

**UNITED STATES  
 SECURITIES AND EXCHANGE COMMISSION**  
 Washington, D.C. 20549

**FORM S-1  
 REGISTRATION STATEMENT  
 UNDER  
 THE SECURITIES ACT OF 1933**

**PHATHOM PHARMACEUTICALS, INC.**

(Exact name of registrant as specified in its charter)

**Delaware**  
 (State or other jurisdiction of  
 incorporation or organization)

**2834**  
 (Primary Standard Industrial  
 Classification Code Number)  
**70 Willow Road, Suite 200**  
**Menlo Park, CA 94025**  
**650-325-5156**

**82-4151574**  
 (I.R.S. Employer  
 Identification No.)

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**David Socks**  
**President and Chief Executive Officer**  
**Phathom Pharmaceuticals, Inc.**  
**70 Willow Road, Suite 200**  
**Menlo Park, CA 94025**  
**650-325-5156**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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**Approximate date of commencement of proposed sale to the public:** As soon as practicable after this Registration Statement is declared effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.  \_\_\_\_\_

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.  \_\_\_\_\_

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.  \_\_\_\_\_

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

**CALCULATION OF REGISTRATION FEE**

Title of Each Class of Securities To Be Registered	Proposed Maximum Aggregate Offering Price <sup>(1)</sup>	Amount of Registration Fee <sup>(2)</sup>
Common Stock, \$0.0001 par value per share	\$	\$

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended. Includes shares of common stock that the underwriters have the option to purchase.

(2) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.

**The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.**

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The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state or other jurisdiction where the offer or sale is not permitted.

Subject to Completion. Dated \_\_\_\_\_, 2019.

Shares



Common Stock

This is an initial public offering of shares of common stock of Phathom Pharmaceuticals, Inc. We are offering \_\_\_\_\_ shares of our common stock.

Prior to this offering, there has been no public market for our common stock. It is currently estimated that the initial public offering price per share will be between \$ \_\_\_\_\_ and \$ \_\_\_\_\_.

We intend to apply to list our common stock on the Nasdaq Global Market under the symbol "PHAT."

We are an "emerging growth company" as defined under the federal securities laws and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus and may elect to do so in future filings.

See "[Risk Factors](#)" beginning on page 12 to read about factors you should consider before buying shares of our common stock.

**Neither the Securities and Exchange Commission nor any other state securities commission has approved or disapproved of these securities or passed on the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.**

	Per Share	Total
Initial public offering price	\$ _____	\$ _____
Underwriting discount <sup>(1)</sup>	\$ _____	\$ _____
Proceeds, before expenses, to Phathom Pharmaceuticals, Inc.	\$ _____	\$ _____

(1) See the section titled "Underwriting" for additional information regarding compensation payable to the underwriters.

To the extent that the underwriters sell more than \_\_\_\_\_ shares of common stock, the underwriters have the option to purchase up to an additional \_\_\_\_\_ shares from us at the initial price to the public less the underwriting discount.

The underwriters expect to deliver the shares against payment in New York, New York on \_\_\_\_\_, 2019.

**Goldman Sachs & Co. LLC**

**Jefferies**

**Evercore ISI**

Prospectus dated \_\_\_\_\_, 2019.

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Neither we nor the underwriters have authorized anyone to provide you with information other than that contained in this prospectus or any free writing prospectus prepared by or on behalf of us or to which we have referred you. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the underwriters are offering to sell, and seeking offers to buy, common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus or any free writing prospectus is accurate only as of its date, regardless of its time of delivery or of any sale of shares of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

For investors outside of the United States: We have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside of the United States.

**PROSPECTUS SUMMARY**

This summary highlights information contained elsewhere in this prospectus. This summary does not contain all of the information you should consider before investing in our common stock. You should read this entire prospectus carefully, especially the section titled “Risk Factors” and our combined financial statements and related notes included elsewhere in this prospectus, before making an investment decision. As used in this prospectus, unless the context otherwise requires, references to “we,” “us,” “our,” “the Company,” “Phathom Pharmaceuticals” and “Phathom” refer to Phathom Pharmaceuticals, Inc.

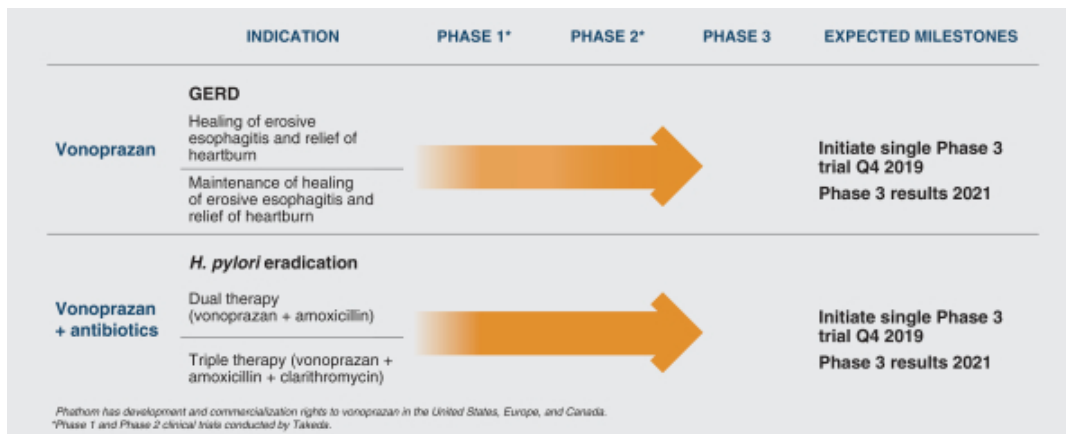
**Overview**

We are a late clinical-stage biopharmaceutical company focused on developing and commercializing novel treatments for gastrointestinal, or GI, diseases. Our initial product candidate, vonoprazan, is an oral small molecule potassium competitive acid blocker, or P-CAB. P-CABs are a novel class of medicines that block acid secretion in the stomach. Vonoprazan has rapid, potent, and durable anti-secretory effects and has demonstrated clinical benefits over the current standard of care as a single agent in the treatment of gastroesophageal reflux disease, or GERD, and in combination with antibiotics for the eradication of *Helicobacter pylori*, or *H. pylori*, infection. Takeda Pharmaceutical Company Limited, or Takeda, developed vonoprazan and has received marketing approval in nine countries in Asia and Latin America. Vonoprazan generated over \$500 million in net sales in its fourth full year on the market since its approval in Japan in late 2014. In May 2019, we in-licensed the U.S., European, and Canadian rights to vonoprazan from Takeda.

We believe we can leverage Takeda’s extensive clinical data, including results from 17 Phase 3 clinical trials, to rapidly advance vonoprazan through pivotal trials in the United States and Europe. Based on our recently completed meeting with the U.S. Food and Drug Administration, or FDA, we plan to initiate two pivotal Phase 3 clinical trials in the fourth quarter of 2019 for vonoprazan: one for the treatment of erosive GERD, also known as erosive esophagitis, and a second for the eradication of *H. pylori* infection. We expect to report top-line data from both trials in 2021. We believe that the successful completion of our Phase 3 clinical trials, together with the existing clinical data, will support regulatory submissions in 2021 and 2022 for marketing approval for the treatment of *H. pylori* infection and erosive esophagitis, respectively. Vonoprazan has the potential to be the first gastric anti-secretory agent from a novel class approved in the United States, Europe, or Canada in over 30 years.

**Our Pipeline**

The following chart summarizes our current development programs.



## Overview of Acid-Related GI Diseases

GI diseases where treatment is related to acid control, such as GERD and *H. pylori* infection, are significant medical problems because of their high prevalence, chronic nature, and clinical sequelae. GERD results from the effects of acid on compromised mucosal defenses in the gastrointestinal tract. The reflux of gastric acid into the esophagus produces frequent and/or severe heartburn, indigestion, and reflux symptoms. Chronic GERD may damage esophageal tissue and progress to more severe diseases including erosive esophagitis, Barrett's esophagus, and esophageal cancer. In *H. pylori* infection, gastric acid limits the effectiveness of antibiotics used to eradicate infection. Chronic *H. pylori* infection can lead to dyspepsia, peptic ulcer disease, gastric cancer, and mucosa-associated lymphoid tissue (MALT) lymphoma.

GERD and *H. pylori* infection are two of the most common acid-related GI diseases and impact millions of people. The prevalence of GERD is estimated to be 20% of the U.S. population and 15% of the population in the five major countries in the European Union (France, Germany, Italy, Spain, and the United Kingdom, or the EU5). We estimate that there are approximately 65 million individuals in the United States and 50 million individuals in the EU5 with GERD. Approximately 30% of GERD patients have erosive esophagitis. *H. pylori* is a bacterial pathogen that infects approximately 35% of the U.S. population and 45% of the EU5 population. We estimate that there are approximately 115 million individuals in the United States and 145 million individuals in the EU5 infected with *H. pylori*.

## Current Standard of Care for GERD and *H. pylori*

Over the last thirty years, the proton pump inhibitor, or PPI, class, has been the standard of care for the treatment of acid-related GI diseases. PPIs are generally used as a single agent for the treatment of GERD and in combination with antibiotics for the eradication of *H. pylori* infection. The PPI class includes drugs such as Prilosec (omeprazole), Nexium (esomeprazole), and Prevacid (lansoprazole). Prior to the introduction of generic and over-the-counter, or OTC, alternatives, annual PPI class sales reached approximately \$12.5 billion in the United States, and peak sales for individual brands were approximately \$3.7 billion for Prilosec, \$3.5 billion for Nexium, and \$3.4 billion for Prevacid in the United States.

While PPIs are the current standard of care and have experienced significant commercial success, they have significant limitations that result in a large unmet medical need. In GERD, PPI therapy is suboptimal for many patients due to the slow onset and insufficient duration of acid control which can lead to inadequate symptom relief. Approximately 15% to 45% of GERD patients remain inadequately treated with PPIs. In the eradication of *H. pylori* infection, the standard of care consists of a combination of a PPI and at least two oral antibiotics. However, increasing antibiotic resistance has resulted in declining eradication rates with PPI-based therapy. We believe these unmet medical needs are in part driven by limitations associated with the mechanism of action and pharmacokinetics of PPIs.

Gastric acid is secreted by proton pumps that are expressed on the channeled surfaces of parietal cells in the stomach. Proton pumps are continuously synthesized and switch between active and inactive states in response to various stimuli, such as food. When activated, proton pumps increase acid secretion. PPIs reduce gastric acid secretion by irreversibly binding to and inhibiting active proton pumps expressed on the parietal cells. PPIs require activation by gastric acid, but they are unstable in the presence of acid. This instability, combined with the short circulating half-life of PPIs, limits their efficacy. Additionally, because proton pumps continuously switch between active and inactive states, multiple doses of PPIs are required to inhibit enough proton pumps to achieve a clinical benefit. As a result, PPIs have a relatively slow onset of action and limited potency and duration of effect, which may result in patients experiencing only partial relief, increasing PPI dosage, and/or cycling through multiple PPIs seeking relief.

### **Our Solution: Vonoprazan**

Vonoprazan, given its differentiated mechanism of action and pharmacologic profile, has been shown to provide more rapid, potent, and durable acid control than PPIs. Unlike PPIs, vonoprazan:

- does not require activation by gastric acid;
- is stable in the presence of acid;
- binds with a slow dissociation rate to both active and inactive proton pumps; and
- has a long plasma half-life that replenishes the drug at the site of action over the course of the day.

These factors have enabled vonoprazan to demonstrate rapid and potent acid suppression in human subjects two hours after oral dosing and maintain target acid inhibition over a 24-hour period. In contrast, PPIs require three to five days to reach steady state acid suppression and do not reliably maintain target acid inhibition over a 24-hour period. In addition, vonoprazan has been shown in human subjects to maintain approximately 10-to-100-fold better acid control compared to a PPI.

We believe that vonoprazan's anti-secretory profile may demonstrate clinically meaningful advantages over PPIs, such as:

- faster, more complete, and more durable healing of erosive esophagitis;
- faster, more complete, and more durable control of GERD symptoms;
- higher *H. pylori* eradication rates in combination with antibiotics compared to standard of care triple therapy and the potential for antibiotic-sparing dual therapy; and
- more flexible dosing, including dosing independent of food and time of day, and the potential for rapid symptom relief through on-demand dosing.

Vonoprazan generated over \$500 million in net sales in its fourth full year on the market in Japan, a 20% increase over the previous year.

### **Vonoprazan Clinical Data**

Vonoprazan has demonstrated clinical advantages over PPIs in erosive esophagitis and eradication of *H. pylori* infection in completed Phase 3 clinical trials conducted in Japan and other Asian countries.

**Erosive esophagitis.** In Phase 3 clinical trials in patients with erosive esophagitis, vonoprazan demonstrated non-inferiority to the PPI lansoprazole for both the healing and maintenance of healing of erosive esophagitis. In post hoc analyses, vonoprazan demonstrated faster and superior healing compared to lansoprazole in patients with more severe erosive esophagitis. After two weeks of treatment, 88% of erosive esophagitis patients with more severe disease were healed after treatment with vonoprazan versus 64% with lansoprazole ( $p=0.0008$ ). In the maintenance of healing, vonoprazan demonstrated lower recurrence rates of erosive esophagitis six months after treatment versus lansoprazole across all grades of severity of erosive esophagitis. Vonoprazan demonstrated a 2% recurrence rate compared to 17% for lansoprazole ( $p<0.0001$ ).

***H. pylori.*** In patients with *H. pylori* infection, vonoprazan in combination with the antibiotics clarithromycin and amoxicillin demonstrated a non-inferior eradication rate of 93% compared to 76%

for lansoprazole in combination with clarithromycin and amoxicillin ( $p < 0.0001$ ) and was also superior in a post hoc analysis ( $p < 0.0001$ ). In patients who failed first line therapy, vonoprazan in combination with the antibiotics metronidazole and amoxicillin demonstrated a 98% eradication rate as second line therapy.

**Safety.** As of December 2018, 6,683 subjects have been exposed to vonoprazan in completed and ongoing Phase 1 to 3 clinical trials. The doses studied have ranged from 1 to 120 mg with durations up to one year. The most commonly reported adverse events, or AEs, in the clinical development program for vonoprazan, as reflected in the Japanese prescribing information published by Japan's Pharmaceuticals and Medical Devices Agency, were diarrhea, constipation, nausea, elevated liver enzymes, rash, and eosinophilia. All such events had an incidence rate of less than 5.0%, other than diarrhea in the eradication of *H. pylori* which had an incidence rate of 10.6% in combination with antibiotics. No dose-related increase in treatment-emergent AEs, or TEAEs, or serious AEs, or SAEs, was observed. The safety profile of vonoprazan and incidence of TEAEs, drug-related TEAEs, and TEAEs leading to drug discontinuation were similar between vonoprazan and lansoprazole across studies.

The most recent post-marketing safety report from December 2018 includes an estimated 23 million patients who have received vonoprazan in Japan since its launch. Based on the post-marketing experience, the clinically significant adverse reactions section of the Japanese prescribing information for vonoprazan was updated to include skin reactions such as toxic epidermal necrolysis, Steven-Johnson syndrome, and erythema multiforme. The incidence of these skin reactions was considered extremely rare (less than 1 in 100,000 patients) and a causal relationship to vonoprazan could not be ruled out. We believe the overall post-marketing safety and tolerability profile of vonoprazan has been consistent with that observed in clinical trials.

### Our Strategy

Our goal is to be a leader in the development and commercialization of novel treatments for GI diseases. Our strategy is initially focused on developing and commercializing vonoprazan as a potential first-in-class P-CAB in the United States, Europe, and Canada for the treatment of acid-related GI diseases. Key elements of this strategy include:

- **Rapidly advance the clinical development of vonoprazan in erosive esophagitis and *H. pylori* infection and seek marketing approval.** We believe we can leverage the existing clinical data and post-marketing experience, as well as our management team's experience with vonoprazan, to rapidly advance vonoprazan through a single pivotal Phase 3 clinical trial in each of erosive esophagitis and *H. pylori* infection beginning in the fourth quarter of 2019, and we expect to report top-line data from both trials in 2021.
- **Commercialize vonoprazan in the United States.** We plan to independently commercialize vonoprazan, if approved, in the United States by building a leading specialty gastroenterology commercial infrastructure to support the adoption of vonoprazan.
- **Seek commercial partnerships to maximize the vonoprazan opportunity outside of the United States.** We believe there is a significant commercial opportunity for vonoprazan in Europe and Canada. To address these markets, we plan to seek one or more partners with existing commercial infrastructure and expertise in these markets.
- **Expand the development of vonoprazan across indications, dosing regimens, and alternative formulations and packaging.** We plan to pursue vonoprazan lifecycle extension

strategies in areas with clear unmet need, clinical rationale, and commercial justification. These strategies may include additional indications, flexible dosing regimens, and alternative formulations and packaging.

- ***In-license or acquire additional clinical or commercial stage product candidates for the treatment of GI diseases in a capital efficient manner.*** We intend to take advantage of our management team's GI expertise to opportunistically in-license or acquire additional innovative therapies for diseases treated by gastroenterologists.

#### **Our Team**

Our founders and management team have deep expertise in developing GI therapeutics, including anti-secretory agents, and direct experience developing vonoprazan at Takeda. Our Chairman, Tadataka (Tachi) Yamada, M.D., is the former Chief Medical Officer and Chief Scientific Officer at Takeda. He is the former President of the American Gastroenterological Association and former Chief of Gastroenterology and Internal Medicine at the University of Michigan. Our Chief Executive Officer, David Socks, is the former Chief Executive Officer of Outpost Medicine, LLC, a GI and urology focused company. Mr. Socks was also President and Chief Operating Officer of Incline Therapeutics Inc. through its sale to The Medicines Company in 2013, and Senior Vice President, Corporate Development and Strategy of Cadence Pharmaceuticals, Inc. Azmi Nabulsi, M.D., M.P.H., our Chief Operating Officer, is the former Deputy Chief Medical and Scientific Officer at Takeda. Our Head of Regulatory, Tom Harris, is the former Senior Vice President and Head of Global Regulatory at Takeda. Dr. Yamada, Dr. Nabulsi, and Mr. Harris were extensively involved with the development of vonoprazan at Takeda.

#### **Risks Related to Our Business**

Our ability to execute our business strategy is subject to numerous risks, as more fully described in the section titled "Risk Factors" immediately following this Prospectus Summary. These risks include, among others:

- We have a limited operating history, have incurred significant operating losses since our inception and expect to incur significant losses for the foreseeable future. We may never generate any revenue or become profitable or, if we achieve profitability, we may not be able to sustain it.
- We will require substantial additional financing to achieve our goals, and a failure to obtain this necessary capital when needed on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our product development programs, commercialization efforts or other operations.
- We currently depend entirely on the success of vonoprazan, which is our only product candidate. If we are unable to advance vonoprazan in clinical development, obtain regulatory approval and ultimately commercialize vonoprazan, or experience significant delays in doing so, our business will be materially harmed.
- We rely on our license agreement with Takeda to provide us rights to develop and commercialize vonoprazan in the United States, Europe, and Canada. If the license agreement is terminated, we would lose our rights to develop and commercialize vonoprazan.
- Clinical drug development involves a lengthy and expensive process with an uncertain outcome, and the results of prior clinical trials and other investigator-initiated clinical trials of



vonoprazan are not necessarily predictive of our future results. Vonoprazan may not have favorable results in our clinical trials, or receive regulatory approval on a timely basis, if at all.

- Any difficulties or delays in the commencement or completion, or termination or suspension, of our planned clinical trials could result in increased costs to us, delay or limit our ability to generate revenue and adversely affect our commercial prospects.
- We rely on third parties to conduct some or all aspects of our product manufacturing, research and preclinical and clinical testing, and these third parties may not perform satisfactorily.
- We face significant competition, and if our competitors develop technologies or product candidates more rapidly than we do or their technologies are more effective, our ability to develop and successfully commercialize products may be adversely affected.
- Our success depends on our ability to protect our intellectual property and our proprietary technologies.
- After this offering, our executive officers, directors, and principal stockholders, if they choose to act together, will continue to have the ability to control or significantly influence all matters submitted to stockholders for approval. Furthermore, many of our current directors were appointed by our principal stockholders.

#### **Corporate Information**

We were originally incorporated under the laws of the state of Delaware on January 9, 2018 under the name North Bridge IV, Inc. On March 13, 2019, we changed our name to Phathom Pharmaceuticals, Inc. and merged YamadaCo IIA, Inc., a Delaware corporation, with and into our company, with Phathom Pharmaceuticals, Inc. as the surviving entity, or the Merger. References throughout this registration statement to Phathom Pharmaceuticals, Inc. include North Bridge IV, Inc. prior to the Merger. Our principal executive offices are located at 70 Willow Road, Suite 200, Menlo Park, California 94025, and our telephone number is 650-325-5156. Our website address is [www.phathompharma.com](http://www.phathompharma.com). The information contained in, or accessible through, our website does not constitute part of this prospectus. We have included our website address as an inactive textual reference only.

We use our pending trademark Phathom Pharmaceuticals in this prospectus. This prospectus also includes trademarks, tradenames, and service marks that are the property of other organizations. Solely for convenience, trademarks and tradenames referred to in this prospectus appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trademarks and tradenames.

#### **Presentation of Japanese Sales Numbers**

All Japanese sales numbers presented in this prospectus are shown in U.S. dollars based on the June 30, 2019 conversion ratio of 0.009 yen to one dollar.

### **Implications of Being an Emerging Growth Company and a Smaller Reporting Company**

As a company with less than \$1.07 billion in revenue during our last fiscal year, we qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. An emerging growth company may take advantage of reduced reporting requirements that are otherwise applicable to public companies. These provisions include, but are not limited to:

- being permitted to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced “Management’s Discussion and Analysis of Financial Condition and Results of Operations” disclosure;
- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, or Sarbanes-Oxley Act;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements, unless the SEC determines the new rules are necessary for protecting the public;
- reduced disclosure obligations regarding executive compensation; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We may take advantage of these provisions until the last day of our fiscal year following the fifth anniversary of the date of the first sale of our common equity securities pursuant to an effective registration statement under the Securities Act of 1933, as amended, or the Securities Act, which such fifth anniversary will occur in 2024. However, if certain events occur prior to the end of such five-year period, including if we become a “large accelerated filer” as defined in Rule 12b-2 under the Securities Exchange Act of 1934, or the Exchange Act, our annual gross revenues exceed \$1.07 billion or we issue more than \$1.0 billion of non-convertible debt in any three-year period, we will cease to be an emerging growth company prior to the end of such five-year period.

We have elected to take advantage of certain of the reduced disclosure obligations in this prospectus and in the registration statement of which this prospectus is a part and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information in this prospectus and that we provide to our stockholders in the future may be different than what you might receive from other public reporting companies in which you hold equity interests.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. We have irrevocably elected not to avail ourselves of this exemption and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

We are also a smaller reporting company as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as our voting and non-voting common stock held by non-affiliates is less than \$250.0 million measured on the last business day of our second fiscal quarter, or our annual revenue is less than \$100.0 million during the most recently completed fiscal year and our voting and non-voting common stock held by non-affiliates is less than \$700.0 million measured on the last business day of our second fiscal quarter.

## The Offering

Common stock offered by us \_\_\_\_\_ shares.

Underwriters' option to purchase additional shares from us \_\_\_\_\_

The underwriters have a 30-day option to purchase up to a total of \_\_\_\_\_ additional shares of our common stock.

Common stock to be outstanding immediately after this offering \_\_\_\_\_

\_\_\_\_\_ shares ( \_\_\_\_\_ shares if the underwriters exercise their option to purchase additional shares of common stock in full).

Use of proceeds

We intend to use the net proceeds of this offering to fund the clinical development of vonoprazan and for working capital and general corporate purposes, including pre-commercial activities. See "Use of Proceeds."

Risk factors

See "[Risk Factors](#)" and other information included in this prospectus for a discussion of factors you should consider carefully before deciding to invest in our common stock.

Proposed Nasdaq Global Market symbol

"PHAT"

The number of shares of our common stock to be outstanding after this offering set forth above is based on \_\_\_\_\_ shares of our common stock outstanding as of June 30, 2019, including 2,148,180 shares subject to forfeiture or our right of repurchase, and gives effect to the automatic conversion of \$90.3 million of aggregate principal amount, plus accrued interest thereon, of convertible promissory notes we issued in May 2019, or the May 2019 Notes, into an aggregate of \_\_\_\_\_ shares of our common stock immediately prior to the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on \_\_\_\_\_, 2019), and excludes:

- 3,500,000 shares of common stock issuable to Takeda upon the exercise of an outstanding warrant, or the Takeda Warrant, as of June 30, 2019, at an exercise price of \$0.0001 per share;
- \_\_\_\_\_ shares of common stock reserved for future issuance under our 2019 Incentive Plan, or the 2019 Plan, which will become effective in connection with this offering (which number includes \_\_\_\_\_ shares remaining available for issuance under our existing 2019 Equity Incentive Plan, or the Existing Incentive Plan, as of June 30, 2019 (which shares will become available for issuance under the 2019 Plan upon its effectiveness), but does not include any potential evergreen increases pursuant to the terms of the 2019 Plan);
- \_\_\_\_\_ shares of common stock reserved for future issuance under our 2019 Employee Stock Purchase Plan, or ESPP, which will become effective in connection with this offering (which number does not include any potential evergreen increases pursuant to the terms of the ESPP); and
- \_\_\_\_\_ shares of common stock which may become issuable to the lenders under our loan and security agreement, or the Loan Agreement, upon the exercise of warrants outstanding as of June 30, 2019, or the Lender Warrants, at an exercise price of \$ \_\_\_\_\_ per share (based on an

assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus), which warrants will only become exercisable if and when we borrow an additional \$25.0 million under our Loan Agreement.

Unless otherwise indicated, all information contained in this prospectus assumes or gives effect to:

- the filing and effectiveness of our amended and restated certificate of incorporation and the adoption of our amended and restated bylaws, each of which will occur immediately prior to the closing of this offering;
- the issuance of \_\_\_\_\_ shares of common stock upon the automatic conversion of the May 2019 Notes immediately prior to the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on \_\_\_\_\_, 2019);
- the expiration of the right granted to Takeda to receive an additional common stock warrant, or the Takeda Warrant Right, upon the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover of this prospectus, as further described below in the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Overview—License Agreement with Takeda”);
- a 1,559.1183-for-1 forward stock split of our common stock effected on March 13, 2019;
- a subsequent \_\_\_\_\_-for-\_\_\_\_\_ stock split of our common stock to be effected before the closing of this offering;
- no exercise of the outstanding warrants described above; and
- no exercise by the underwriters of their option to purchase \_\_\_\_\_ additional shares of our common stock.

Each \$1.00 increase in the assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, would decrease the number of shares of our common stock issued upon conversion of the May 2019 Notes by \_\_\_\_\_ shares. Each \$1.00 decrease in the assumed initial public offering price of \$ \_\_\_\_\_ per share would increase the number of shares of our common stock issued upon conversion of the May 2019 Notes by \_\_\_\_\_ shares.

### Summary Combined Financial Data

The following tables set forth a summary of our historical combined financial data as of, and for the periods ended on, the dates indicated. The combined financial statements include the accounts of our company and YamadaCo IIA, Inc., both of which were entities under common control prior to the Merger. We have derived the summary combined statements of operations data for the year ended December 31, 2018 from our audited combined financial statements included elsewhere in this prospectus. We have derived the summary combined statements of operations data for the six months ended June 30, 2018 and 2019 and the summary combined balance sheet data as of June 30, 2019 from our unaudited combined financial statements included elsewhere in this prospectus. The unaudited combined financial statements have been prepared on a basis consistent with our audited combined financial statements included in this prospectus and, in the opinion of management, reflect all adjustments, consisting only of normal recurring adjustments, necessary to fairly state our results of operations for the six months ended June 30, 2018 and 2019 and financial position as of June 30, 2019. You should read these data together with our combined financial statements and related notes included elsewhere in this prospectus and the sections titled "Selected Combined Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations." Our historical results for any prior period are not necessarily indicative of our future results.

(in thousands, except share and per share data)	Year Ended	Six Months Ended	
	December 31, 2018	2018	2019
		(unaudited)	
<b>Combined Statements of Operations Data:</b>			
Operating expenses:			
Research and development	\$ 20	\$ –	\$ 3,201
In-process research and development	–	–	78,897
General and administrative (includes related party amounts of \$321, \$124 and \$18, respectively)	1,205	506	2,142
Total operating expenses	1,225	506	84,240
Loss from operations	(1,225)	(506)	(84,240)
Other income (expense):			
Interest income	–	–	101
Interest expense (includes related party amounts of \$(13), \$(4) and \$(82), respectively)	(13)	(4)	(1,148)
Change in fair value of warrant liabilities (includes related party amounts of \$0, \$0 and \$(1,277), respectively)	–	–	(1,284)
Change in fair value of convertible promissory notes (includes related party amounts of \$(50), \$(4) and \$(502), respectively)	(50)	(4)	(2,442)
Total other income (expense)	(63)	(8)	(4,773)
Net loss	\$ (1,288)	\$ (514)	\$ (89,013)
Net loss per share, basic and diluted <sup>(1)</sup>	\$ (0.46)	\$ (0.21)	\$ (29.06)
Weighted-average shares of common stock outstanding, basic and diluted <sup>(1)</sup>	2,791,364	2,459,074	3,062,913
Pro forma net loss per share, basic and diluted (unaudited) <sup>(1)</sup>	\$		\$
Pro forma weighted-average shares of common stock outstanding, basic and diluted (unaudited) <sup>(1)</sup>			

(1) See Note 1 to our combined financial statements included elsewhere in this prospectus for an explanation of the method used to calculate the historical and pro forma net loss per share, basic and diluted, and the number of shares used in the computation of the per share amounts.

(in thousands)	As of June 30, 2019		
	Actual (unaudited)	Pro Forma <sup>(1)(3)</sup> (unaudited)	Pro Forma As Adjusted <sup>(2)</sup> <sup>(3)</sup> (unaudited)
<b>Combined Balance Sheet Data:</b>			
Cash and cash equivalents	\$ 82,917	\$	\$
Working capital (deficit) <sup>(4)</sup>	(60,210)		
Total assets	84,879		
Convertible promissory notes payable at fair value (including accrued interest)	93,559		
Warrant liabilities	49,597		
Long-term debt, including final payment fee and net of debt discount	24,512		
Accumulated deficit	(90,301)		
Total stockholders' equity (deficit)	(84,385)		
(1)	Gives effect to the (i) automatic conversion of the May 2019 Notes into an aggregate of _____ shares of our common stock immediately prior to the closing of this offering (based on an assumed initial public offering price of \$ _____ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on _____, 2019), and (ii) the reclassification of the Takeda Warrant to stockholders' equity (deficit).		
(2)	Gives effect to (i) the pro forma adjustments set forth in footnote (1) above, and (ii) the issuance and sale of _____ shares of our common stock in this offering at the assumed initial public offering price of \$ _____ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each \$1.00 increase (decrease) in the assumed initial public offering price of \$ _____ per share would increase (decrease) the pro forma as adjusted amount of each of our cash and cash equivalents, working capital, total assets and total stockholders' equity (deficit) by approximately \$ _____, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each increase (decrease) of 1.0 million shares in the number of shares offered by us at the assumed initial public offering price of \$ _____ per share would increase (decrease) the pro forma as adjusted amounts of each of our cash and cash equivalents, working capital, total assets and total stockholders' equity (deficit) by approximately \$ _____, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.		
(3)	The pro forma and pro forma as adjusted information discussed above is illustrative only and will be adjusted based on the actual initial public offering price and other terms of our initial public offering determined at pricing.		
(4)	We define working capital (deficit) as current assets less current liabilities. See our combined financial statements included elsewhere in this prospectus for further details regarding our current assets and current liabilities.		

## RISK FACTORS

*Investing in our common stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information in this prospectus, including our combined financial statements and related notes included elsewhere in this prospectus and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" before making an investment decision. If any of the following risks are realized, our business, financial condition, results of operations and prospects could be materially and adversely affected. In that event, the trading price of our common stock could decline and you could lose part or all of your investment.*

### **Risks Related to Our Limited Operating History, Financial Position and Capital Requirements**

***We have a limited operating history, have incurred significant operating losses since our inception and expect to incur significant losses for the foreseeable future. We may never generate any revenue or become profitable or, if we achieve profitability, we may not be able to sustain it.***

Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. We are a late clinical-stage biopharmaceutical company with a limited operating history upon which you can evaluate our business and prospects. We commenced operations in 2018, and to date, we have focused primarily on organizing and staffing our company, business planning, raising capital, in-licensing our initial product candidate, vonoprazan, meeting with regulatory authorities, and preparing for our planned Phase 3 clinical trials of vonoprazan. As a company, we have not yet demonstrated an ability to successfully complete any clinical trials, obtain regulatory approvals, manufacture a commercial scale product or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful product commercialization. Consequently, any predictions made about our future success or viability may not be as accurate as they could be if we had a history of successfully developing and commercializing biopharmaceutical products.

We have incurred significant operating losses since our inception. If vonoprazan is not successfully developed and approved in the United States, Europe and/or Canada, we may never generate any revenue. Our net losses were \$1.3 million and \$89.0 million for the year ended December 31, 2018 and the six months ended June 30, 2019, respectively. As of June 30, 2019, we had an accumulated deficit of \$90.3 million. Substantially all of our losses have resulted from expenses incurred in connection with in-licensing and developing vonoprazan and from general and administrative costs associated with our operations. Vonoprazan and any future product candidates will require substantial additional development time and resources before we will be able to apply for or receive regulatory approvals and begin generating revenue from product sales. We expect to continue to incur losses for the foreseeable future, and we anticipate these losses will increase substantially as we continue our development of, seek regulatory approval for, and potentially commercialize vonoprazan and seek to identify, assess, acquire, in-license, or develop additional product candidates.

To become and remain profitable, we must succeed in developing and eventually commercializing products that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing clinical trials and preclinical studies of vonoprazan and any future product candidates, obtaining regulatory approval for these product candidates and manufacturing, marketing and selling any products. We are only in the preliminary stages of most of these activities. We may never succeed in these activities and, even if we do, may never generate revenues that are significant enough to achieve profitability. In addition, we have not yet demonstrated an ability to successfully overcome many of the risks and uncertainties frequently encountered by

companies in new and rapidly evolving fields, particularly in the biopharmaceutical industry. Because of the numerous risks and uncertainties associated with biopharmaceutical product development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would depress the value of our company and could impair our ability to raise capital, expand our business, continue our product development efforts, diversify our product candidate pipeline or even continue our operations. A decline in the value of our company could also cause you to lose all or part of your investment.

***We will require substantial additional financing to achieve our goals, and a failure to obtain this necessary capital when needed on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our product development programs, commercialization efforts or other operations.***

The development of biopharmaceutical product candidates is capital-intensive. We expect our expenses to increase in connection with our ongoing activities, particularly as we conduct our planned Phase 3 clinical trials of vonoprazan and seek regulatory approval for vonoprazan. In addition, if vonoprazan receives approval and is commercialized, we will be required to make milestone and royalty payments to Takeda, from whom we have in-licensed the rights to develop and commercialize vonoprazan in the United States, Europe, and Canada pursuant to the license agreement, dated May 7, 2019, between us and Takeda, or the Takeda License. Furthermore, if and to the extent we seek to acquire or in-license additional product candidates in the future, we may be required to make significant upfront payments, milestone payments, and/or licensing payments. If we obtain regulatory approval for vonoprazan or any future product candidate, we also expect to incur significant commercialization expenses related to product manufacturing, marketing, sales and distribution. Because the outcome of any clinical trial is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of vonoprazan or any future product candidate. Furthermore, following the completion of this offering, we expect to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts.

We believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our operations for at least the next months. In particular, we expect that the net proceeds from this offering will allow us to complete our planned Phase 3 clinical trials of vonoprazan in erosive esophagitis and the eradication of *H. pylori* infection. We have based these estimates on assumptions that may prove to be wrong, and we could use our capital resources sooner than we currently expect. Our operating plans and other demands on our cash resources may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings or other capital sources, including potentially collaborations, licenses and other similar arrangements. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. Attempting to secure additional financing may divert our management from our day-to-day activities, which may adversely affect our ability to develop vonoprazan or any future product candidates.

Our future capital requirements will depend on many factors, including:

- the initiation, type, number, scope, results, costs and timing of, our clinical trials of vonoprazan, and preclinical studies or clinical trials of other potential product candidates we may choose to pursue in the future, including feedback received from regulatory authorities;



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- the costs and timing of manufacturing for vonoprazan or any future product candidates, including commercial scale manufacturing if any product candidate is approved;
- the costs, timing and outcome of regulatory review of vonoprazan or any future product candidates;
- the costs of obtaining, maintaining and enforcing our patents and other intellectual property rights;
- our efforts to enhance operational systems and hire additional personnel to satisfy our obligations as a public company, including enhanced internal controls over financial reporting;
- the costs associated with hiring additional personnel and consultants as our business grows, including additional executive officers, clinical development personnel and commercial personnel;
- the timing and amount of the milestone or other payments we must make to Takeda and any future licensors;
- the costs and timing of establishing or securing sales and marketing capabilities if vonoprazan or any future product candidate is approved;
- our ability to achieve sufficient market acceptance, coverage and adequate reimbursement from third-party payors and adequate market share and revenue for any approved products;
- patients' willingness to pay out-of-pocket for any approved products in the absence of coverage and/or adequate reimbursement from third-party payors;
- the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements; and
- the costs associated with any products or technologies that we may in-license or acquire.

Conducting clinical trials and preclinical studies is a time consuming, expensive, and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory approval and achieve product sales. In addition, vonoprazan and other potential product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, would initially be derived from sales of vonoprazan, which we do not expect to be commercially available in our licensed territories for many years, if at all.

Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all. In addition, we may seek additional capital due to favorable market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans.

***Raising additional capital may cause dilution to our stockholders, including purchasers of common stock in this offering, restrict our operations or require us to relinquish rights to our technologies or product candidates.***

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through equity offerings, our loan and security agreement, or the Loan Agreement, with Silicon Valley Bank, or SVB, as administrative and collateral agent, and lenders SVB and WestRiver Innovation Lending Fund VIII, L.P., or WestRiver, debt financings, or other capital sources, including potential collaborations, licenses and other similar arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Our Loan Agreement includes, and any future debt financing and

preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

If we raise funds through future collaborations, licenses and other similar arrangements, we may have to relinquish valuable rights to our future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us and/or that may reduce the value of our common stock.

***Our management, as of December 31, 2018, and our independent registered public accounting firm, in their report on our combined financial statements as of and for the fiscal year ended December 31, 2018, have concluded that there is substantial doubt as to our ability to continue as a going concern.***

Our audited combined financial statements for the fiscal year ended December 31, 2018 were prepared assuming that we will continue as a going concern. The going concern basis of presentation assumes that we will continue in operation for the foreseeable future and will be able to realize our assets and satisfy our liabilities in the normal course of business and do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or amounts and classification of liabilities that may result from our inability to continue as a going concern. As of December 31, 2018, our management concluded that, based on our expected operating losses, negative cash flows and maturities of outstanding convertible promissory notes, there is substantial doubt about our ability to continue as a going concern for the twelve months after the date the combined financial statements were issued. Our ability to continue as a going concern is subject to our ability to obtain sufficient financing. If we cannot continue as a going concern, we may have to liquidate our assets and may receive less than the value at which those assets are carried on our combined financial statements, and it is likely that our stockholders may lose some or all of their investment in us. After this offering, we may not raise the funding we require such that substantial doubt about our ability to continue as a going concern continues. If we seek additional financing to fund our business activities in the future and there remains substantial doubt about our ability to continue as a going concern, investors or other financing sources may be unwilling to provide additional funding on commercially reasonable terms or at all.

#### **Risks Related to the Development and Regulatory Approval of Product Candidates**

***We currently depend entirely on the success of vonoprazan, which is our only product candidate. If we are unable to advance vonoprazan in clinical development, obtain regulatory approval and ultimately commercialize vonoprazan, or experience significant delays in doing so, our business will be materially harmed.***

We currently only have one product candidate, vonoprazan, which we in-licensed from Takeda. Our business presently depends entirely on our ability to successfully develop, obtain regulatory approval for, and commercialize vonoprazan in a timely manner. This may make an investment in our company riskier than similar companies that have multiple product candidates in active development that may be able to better sustain failure of a lead product candidate. We plan to initiate two pivotal Phase 3 clinical trials in the fourth quarter of 2019 for vonoprazan: one for the treatment of erosive esophagitis, and a second for the eradication of *H. pylori* infection. However, we will need to submit investigational new drug applications, or INDs, to the FDA to allow us to initiate our planned Phase 3 clinical trials to support applications for regulatory approval of vonoprazan. Our assumptions about vonoprazan's development and commercial potential are based in large part on the development and commercial experience of vonoprazan in Japan and other Asian countries. However, our assumptions may prove to be wrong, and we may encounter a materially and adversely different development and

commercial experience. The success of vonoprazan will depend on several factors, including the following:

- acceptance of INDs by the FDA or similar regulatory filing by comparable foreign regulatory authorities for the conduct of clinical trials of vonoprazan and our proposed design of the Phase 3 clinical trials of vonoprazan and any future clinical trials;
- successful enrollment in clinical trials and completion of clinical trials with favorable results;
- the willingness of the FDA, the European Medicines Agency, or EMA, and other comparable foreign regulatory authorities to accept the data from clinical and preclinical studies conducted outside of our licensed territories by Takeda and independent investigators as part of the basis for review and approval of vonoprazan;
- demonstrating safety and efficacy to the satisfaction of applicable regulatory authorities;
- the outcome, timing and cost of meeting regulatory requirements established by the FDA, EMA, and other comparable foreign regulatory authorities;
- receipt of marketing approvals from applicable regulatory authorities, including one or more new drug applications, or NDAs, from the FDA and maintaining such approvals;
- making arrangements with Takeda or any future third-party manufacturers for, or establishing, commercial manufacturing capabilities and receiving/importing commercial supplies approved by FDA and other regulators from Takeda or any future third-party manufacturer;
- establishing sales, marketing and distribution capabilities and commercializing vonoprazan, if approved, whether alone or in collaboration with others;
- establishment and maintenance of patent and trade secret protection or regulatory exclusivity for vonoprazan;
- maintaining an acceptable safety profile of vonoprazan following approval; and
- maintaining and growing an organization of people who can develop and, if approved, commercialize, market, and sell vonoprazan to physicians, patients, healthcare payors, and others in the medical community.

The success of our business, including our ability to finance our company and generate any revenue in the future, will primarily depend on the successful development, regulatory approval and commercialization of vonoprazan, which may never occur. We have not yet succeeded and may not succeed in demonstrating efficacy and safety for vonoprazan in clinical trials or in obtaining marketing approval thereafter. It may be several years, if at all, before we have demonstrated the safety and efficacy of a treatment sufficient to warrant approval for commercialization. If we are unable to develop, or obtain regulatory approval for, or, if approved, successfully commercialize vonoprazan, we may not be able to generate sufficient revenue to continue our business.

***Clinical drug development involves a lengthy and expensive process with an uncertain outcome, and the results of prior clinical trials and other investigator-initiated clinical trials of vonoprazan are not necessarily predictive of our future results. Vonoprazan may not have favorable results in our clinical trials, or receive regulatory approval on a timely basis, if at all.***

Clinical drug development is expensive and can take many years to complete, and its outcome is inherently uncertain. Our clinical trials may not be conducted as planned or completed on schedule, if at all, and failure can occur at any time during the preclinical study or clinical trial process. Despite promising preclinical or clinical results, any product candidate can unexpectedly fail at any stage of preclinical or clinical development. The historical failure rate for product candidates in our industry is high.

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The results from clinical trials or preclinical studies of a product candidate may not predict the results of later clinical trials of the product candidate, and interim results of a clinical trial are not necessarily indicative of final results. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy characteristics despite having progressed through preclinical studies and initial clinical trials. In particular, while vonoprazan has been studied in an extensive clinical program by Takeda, including 17 Phase 3 clinical trials, we do not know how vonoprazan will perform in future clinical trials, including as a result of differences between the clinical trials conducted to date by Takeda or other third parties and our planned Phase 3 clinical trial designs. These differences include, among other things: including higher doses of antibiotics and longer duration of treatment and inclusion of a dual therapy arm in our planned Phase 3 clinical trial for the eradication of *H. pylori* infection, and conducting a single Phase 3 clinical trial for both the healing and maintenance of erosive esophagitis, rather than two separate trials. Further, nearly all preclinical and clinical development of vonoprazan was conducted in Asian subjects, who naturally have differences in height, weight, drug metabolism, and potentially, acid-secretory capacity from Western populations. Although there are data across two Phase 1 clinical trials in healthy volunteers showing that the vonoprazan pharmacokinetic and pharmacodynamic profile is similar in Japanese and non-Japanese subjects, our clinical trials of vonoprazan in a broader population comprised of patients in the United States and Europe may not yield the same results as prior clinical trials. Additionally, Western patients may be more likely to deviate from clinical trial protocols or drop out of clinical trials than Japanese patients, which may negatively impact the results of our clinical trials. Further, in our planned Phase 3 clinical trial for the eradication of *H. pylori* infection, the vonoprazan dual therapy arm will not be double-blinded because patients in this arm will be administered amoxicillin three times daily, versus twice daily for the triple therapy regimens. Both triple therapy regimens will be double-blinded. The inability to double-blind the dual therapy arm may impact the results of this trial and how regulatory agencies or healthcare payors interpret such results.

A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in clinical development even after the product candidate achieved promising results in earlier clinical trials. The results of our planned trials may not be comparable to those achieved previously, whether as a result of differences in trial design, patient population or otherwise.

In addition, Takeda, a third party over which we have no control, has the right to develop and commercialize vonoprazan outside of the United States, Europe, and Canada. Takeda has marketing approval for vonoprazan in certain countries in Asia and Latin America, and Takeda has ongoing clinical trials of vonoprazan in certain indications that we are also pursuing. If such ongoing trials fail to meet their primary endpoints, have serious adverse events or encounter other problems, the development potential of vonoprazan could be materially and adversely affected. In addition, if serious adverse events or other problems occur with patients using vonoprazan marketed outside of our licensed territories, or if the results of ongoing or future clinical trials of vonoprazan conducted by Takeda or others generate negative results or results that conflict with the results of our clinical trials, the FDA, EMA, or other regulatory authorities may delay, limit, or deny approval of vonoprazan, require us to conduct additional clinical trials as a condition to marketing approval, or withdraw their approval of vonoprazan or otherwise restrict our ability to market and sell vonoprazan, if approved. In addition, treating physicians may be less willing to prescribe vonoprazan due to concerns over such trial results or adverse events, which would limit our ability to commercialize vonoprazan.

For the foregoing reasons, our planned clinical trials may not be successful. Any safety concerns observed in any one of our clinical trials in our targeted indications could limit the prospects for regulatory approval of vonoprazan or any future product candidates in those and other indications, which could have a material adverse effect on our business, financial condition and results of operations.

***Any difficulties or delays in the commencement or completion, or termination or suspension, of our planned clinical trials could result in increased costs to us, delay or limit our ability to generate revenue and adversely affect our commercial prospects.***

Before obtaining marketing approval from regulatory authorities for the sale of vonoprazan or any future product candidates, we must conduct extensive clinical trials to demonstrate the safety and efficacy of vonoprazan or any future product candidates in humans. Before we can commence our planned pivotal Phase 3 clinical program for vonoprazan in erosive esophagitis and *H. pylori* infection, we must submit the results of Takeda's previously completed clinical trials to the FDA along with other information, including information about product candidate chemistry, manufacturing and controls and our proposed clinical trial protocol, as part of the investigational new drug, or IND, applications. We plan to submit three separate INDs for vonoprazan in August 2019: one for erosive esophagitis; a second for dual therapy eradication of *H. pylori* infection; and a third for triple therapy eradication of *H. pylori* infection. Takeda performed Phase 3 clinical trials of vonoprazan in erosive esophagitis and triple therapy eradication of *H. pylori* infection and independent investigators conducted clinical trials of vonoprazan in dual therapy eradication of *H. pylori* infection. The FDA, or other regulatory authorities, may not view the data from these third parties, particularly the independent investigators in Japan, as sufficient to allow us to advance into pivotal Phase 3 trials or otherwise accept the data from clinical trials conducted by Takeda or independent investigators to support the regulatory approval of vonoprazan for any of the indications for which we intend to seek approval. Additionally, while the study designs of the two planned Phase 3 clinical trials are highly similar to the study designs of Takeda's successful clinical trials, there are some key differences, including that we intend to investigate higher doses of antibiotics and longer duration of treatment and inclusion of a dual therapy arm in our planned Phase 3 clinical trial for the eradication of *H. pylori* infection and are conducting a single Phase 3 clinical trial for both healing and maintenance of healing of erosive esophagitis, rather than two separate trials. It is possible that the FDA, EMA or other regulatory authorities, may require us to modify our trial design or conduct additional trials before allowing us to initiate clinical trials or in order to obtain regulatory approval.

We will have to follow the same procedures outlined above for any future product candidates that we advance to clinical development, and we may also be required to submit regulatory filings to foreign regulatory authorities to the extent we initiate clinical trials outside of the United States.

We do not know whether our planned trials will begin on time or be completed on schedule, if at all. The commencement and completion of clinical trials can be delayed for a number of reasons, including delays related to:

- the FDA, EMA or comparable foreign regulatory authorities disagreeing as to the design or implementation of our clinical trials and reaching consensus among the FDA and EMA over the design of the same clinical trial;
- any failure or delay in obtaining regulatory authorizations to commence a trial;
- any failure or delay in reaching an agreement with contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- institutional review boards, or IRBs, refusing to approve, suspending or terminating the trial at an investigational site, precluding enrollment of additional subjects, or withdrawing their approval of the trial;
- changes to clinical trial protocols;
- clinical sites deviating from trial protocols or dropping out of a trial;
- manufacturing or obtaining sufficient quantities of vonoprazan and any future product candidates and obtaining sufficient quantities of lansoprazole, which will be used in both of our

planned Phase 3 clinical trials, and/or antibiotics for use in clinical trials, including amoxicillin and clarithromycin, which will be used in our planned Phase 3 clinical trial of vonoprazan for the eradication of *H. pylori* infection;

- subjects failing to enroll or remain in our trials at the rate we expect, or failing to return for post-treatment follow-up;
- subjects choosing an alternative treatment for the indication for which we are developing vonoprazan and any future product candidates, or participating in competing clinical trials;
- lack of adequate funding to continue the clinical trial;
- subjects experiencing severe or unexpected drug-related adverse effects;
- occurrence of serious adverse events in trials of the same class of agents conducted by other companies;
- selection of clinical endpoints that require prolonged periods of clinical observation or analysis of the resulting data;
- a facility manufacturing vonoprazan or any future product candidates or any of their components being ordered by the FDA or comparable foreign regulatory authorities to temporarily or permanently shut down due to violations of current good manufacturing, or cGMP, regulations or other applicable requirements, or infections or cross-contaminations of product candidates in the manufacturing process;
- any changes to our manufacturing process that may be necessary or desired;
- third-party clinical investigators losing the licenses or permits necessary to perform our clinical trials, not performing our clinical trials on our anticipated schedule or consistent with the clinical trial protocol, good clinical practices, or GCP, or other regulatory requirements;
- third-party contractors not performing data collection or analysis in a timely or accurate manner; or
- third-party contractors becoming debarred or suspended or otherwise penalized by the FDA or other government or regulatory authorities for violations of regulatory requirements, in which case we may need to find a substitute contractor, and we may not be able to use some or all of the data produced by such contractors in support of our marketing applications.

We could also encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted or by the FDA or comparable foreign regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or comparable foreign regulatory authorities, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. In addition, changes in regulatory requirements and policies may occur, and we may need to amend clinical trial protocols to comply with these changes. Amendments may require us to resubmit our clinical trial protocols to IRBs for reexamination, which may impact the costs, timing, or successful completion of a clinical trial.

Further, conducting clinical trials in foreign countries, as we may do for vonoprazan or any future product candidates, presents additional risks that may delay completion of our clinical trials. These risks include the failure of enrolled patients in foreign countries to adhere to clinical protocol as a result of differences in healthcare services or cultural customs, managing additional administrative burdens associated with foreign regulatory schemes, as well as political and economic risks relevant to such foreign countries.

Moreover, principal investigators for our clinical trials currently serve and may continue to serve as scientific advisors or consultants to us from time to time and receive compensation in connection with such services. Under certain circumstances, we may be required to report some of these relationships to the FDA or comparable foreign regulatory authorities. The FDA or comparable foreign regulatory authority may conclude that a financial relationship between us and a principal investigator has created a conflict of interest or otherwise affected interpretation of the clinical trial. The FDA or comparable foreign regulatory authority may therefore question the integrity of the data generated at the applicable clinical trial site and the utility of the clinical trial itself may be jeopardized. This could result in a delay in approval, or rejection, of our marketing applications by the FDA or comparable foreign regulatory authority, as the case may be, and may ultimately lead to the denial of marketing approval of vonoprazan or any future product candidates.

If we experience delays in the completion of, or termination of, any clinical trial of vonoprazan or any future product candidates, the commercial prospects of vonoprazan and any future product candidates will be harmed, and our ability to generate product revenues from any of these product candidates will be delayed. Moreover, any delays in completing our clinical trials will increase our costs, slow down our product candidate development and approval process and jeopardize our ability to commence product sales and generate revenues.

In addition, many of the factors that cause, or lead to, termination or suspension of, or a delay in the commencement or completion of, clinical trials may also ultimately lead to the denial of regulatory approval of a product candidate. We may make formulation or manufacturing changes to vonoprazan or any future product candidates, in which case we may need to conduct additional preclinical studies to bridge our modified product candidates to earlier versions. Any delays to our clinical trials that occur as a result could shorten any period during which we may have the exclusive right to commercialize vonoprazan or any future product candidates and our competitors may be able to bring products to market before we do, and the commercial viability of vonoprazan and any future product candidates could be significantly reduced. Any of these occurrences may harm our business, financial condition, and prospects significantly.

***We may find it difficult to enroll patients in our clinical trials. If we encounter difficulties enrolling patients in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.***

We may not be able to initiate or continue clinical trials for vonoprazan or any future product candidates if we are unable to identify and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. Subject enrollment, a significant factor in the timing of clinical trials, is affected by many factors including the size and nature of the patient population, the proximity of patients to clinical sites, the eligibility and exclusion criteria for the trial, the design of the clinical trial, the risk that enrolled patients will not complete a clinical trial, our ability to recruit clinical trial investigators with the appropriate competencies and experience, competing clinical trials and clinicians' and patients' perceptions as to the potential advantages and risks of the product candidate being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating as well as any drugs under development. We will be required to identify and enroll a sufficient number of patients for each of our clinical trials. Potential patients for any planned clinical trials may not be adequately diagnosed or identified with the diseases which we are targeting or may not meet the entry criteria for such trials. For example, a key secondary analysis in our planned Phase 3 clinical trial for the eradication of *H. pylori* infection is the eradication rate in clarithromycin-resistant patients. However, because the process of assessing antibiotic resistance to *H. pylori* takes several weeks, we believe it is not practical to use resistance as an enrollment criteria in our clinical trial. Therefore, the percentage of clarithromycin-resistant patients enrolled in this clinical trial is unpredictable and may

affect the results of the trial. We also may encounter difficulties in identifying and enrolling patients with a stage of disease appropriate for our planned clinical trials and monitoring such patients adequately during and after treatment. For example, in our Phase 3 clinical trial of vonoprazan in erosive esophagitis, we intend for 30% of the patients to have Los Angeles Class C or D erosive esophagitis, which are the most severe forms of erosive esophagitis and are estimated to only represent approximately 10 to 20% of erosive esophagitis patients. We may not be able to initiate or continue clinical trials if we are unable to locate a sufficient number of eligible patients to participate in the clinical trials required by the FDA or comparable foreign regulatory authorities. In addition, the process of finding and diagnosing patients may prove costly as these patients are required to undergo an endoscopy before being diagnosed as having Los Angeles Class C or D erosive esophagitis.

The timing of our clinical trials depends, in part, on the speed at which we can recruit patients to participate in our trials, as well as completion of required follow-up periods. The eligibility criteria of our clinical trials, once established, will further limit the pool of available trial participants. If patients are unwilling to participate in our trials for any reason, including the existence of concurrent clinical trials for similar patient populations, if they are unwilling to enroll in a clinical trial with a placebo-controlled design or the availability of approved therapies, or we otherwise have difficulty enrolling a sufficient number of patients, the timeline for recruiting patients, conducting trials and obtaining regulatory approval of vonoprazan and any future product candidates may be delayed. Our inability to enroll a sufficient number of patients for any of our future clinical trials would result in significant delays or may require us to abandon one or more clinical trials altogether.

Our assumptions used in determining expected clinical trial timelines may not be correct, and we may experience delays in enrollment, which would result in the delay of completion of such trials beyond our expected timelines.

***Use of vonoprazan or any future product candidates could be associated with side effects, adverse events or other properties or safety risks, which could delay or preclude approval, cause us to suspend or discontinue clinical trials, abandon a product candidate, limit the commercial profile of an approved label or result in other significant negative consequences that could severely harm our business, prospects, operating results and financial condition.***

As is the case with pharmaceuticals generally, it is likely that there may be side effects and adverse events associated with vonoprazan's or any future product candidates' use. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. Undesirable side effects caused by vonoprazan and any future product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or comparable foreign regulatory authorities. The drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition, and prospects significantly.

Moreover, if vonoprazan or any other future product candidates are associated with undesirable side effects in clinical trials or have characteristics that are unexpected, we may elect to abandon their development or limit their development to more narrow uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective, which may limit the commercial expectations for the product candidate, if approved. We may also be required to modify our study plans based on findings in our clinical trials.

As of December 2018, 6,683 subjects have been exposed to vonoprazan in completed and ongoing Phase 1 to 3 clinical trials. The doses studied have ranged from 1 to 120 mg with durations up



to one year. The most commonly reported AEs in the clinical development program for vonoprazan, as reflected in the Japanese prescribing information published by Japan's Pharmaceutical and Medical Devices Agency, or PMDA, were diarrhea, constipation, nausea, elevated liver enzymes, rash, and eosinophilia. All such events had an incidence rate of less than 5.0% other than diarrhea in the eradication of *H. pylori* which had an incidence rate of 10.6% in combination with antibiotics. No dose-related increase in TEAEs or SAEs was observed. The safety profile of vonoprazan and incidence of TEAEs, drug-related TEAEs, and TEAEs leading to drug discontinuation were similar between vonoprazan and lansoprazole across studies.

Certain earlier generation P-CABs previously under development by other companies may have been discontinued in part due to their hepatic safety profile. These hepatic safety concerns may be compound-specific and not generalizable to the P-CAB class. Vonoprazan has had a similar hepatic safety profile to lansoprazole across all clinical studies conducted by Takeda, in which 1.0% of subjects treated with vonoprazan 10 mg or 20 mg and 0.8% of subjects treated with lansoprazole 15 mg or 30 mg had ALT or AST elevations greater than three times the upper limit of normal or bilirubin elevations greater than two times the upper limit of normal.

The most recent post-marketing safety report from December 2018 includes an estimated 23 million patients who have received vonoprazan in Japan since launch. Based on the post-marketing experience, the clinically significant adverse reactions section of the Japanese prescribing information for vonoprazan was updated to include skin reactions such as toxic epidermal necrolysis, Steven-Johnson syndrome, and erythema multiforme. The incidence of these skin reactions was considered extremely rare (less than 1 in 100,000 patients) and a causal relationship to vonoprazan could not be ruled out.

Serious hepatic adverse events have also been observed among patients exposed to vonoprazan in Japan in the post-marketing setting. These cases were typically confounded by comorbidities or other concomitant medications and are believed to be idiosyncratic reactions. The incidence of these events was considered extremely rare (less than 1 in 100,000 patients). The post-marketing safety data, including the December 2018 post-marketing safety report and the reported hepatic safety events, have been submitted to the PMDA. To date, there have been no changes to the Japan prescribing information related to hepatic safety. We may also observe hepatic-related events in our clinical trials.

It is possible that as we test vonoprazan and any future product candidates in our clinical trials, or as the use of vonoprazan and any future product candidates becomes more widespread if they receive regulatory approval, illnesses, injuries, discomforts and other adverse events that were observed in earlier trials, as well as conditions that did not occur or went undetected in previous trials, will be reported by patients. If such side effects become known later in development or upon approval, if any, such findings may harm our business, financial condition and prospects significantly. Further, if a serious safety issue is identified in connection with use of vonoprazan commercially or in third-party clinical trials in Asia or elsewhere, such issues may adversely affect the development potential of vonoprazan or result in regulatory authorities restricting our ability to develop vonoprazan.

In addition, if vonoprazan or any future product candidate receives marketing approval, and we or others later identify undesirable side effects caused by such products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw, suspend or limit approvals of such product, or seek an injunction against its manufacturer;
- we may be required to recall a product or change the way such product is administered to patients;

- regulatory authorities may require additional warnings on the label, such as a “black box” warning or a contraindication;
- we may be required to implement a Risk Evaluation and Mitigation Strategy, or REMS, or create a medication guide outlining the risks of such side effects for distribution to patients;
- we may be required to change the way a product is distributed or administered, conduct additional clinical trials or change the labeling of a product or be required to conduct additional post-marketing studies or surveillance;
- we could be sued and held liable for harm caused to patients;
- sales of the product may decrease significantly or the product could become less competitive; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, and could significantly harm our business, results of operations and prospects.

***As a company, we have never conducted a clinical trial or submitted an NDA or comparable foreign regulatory filing, and may be unable to do so for vonoprazan or any future product candidates.***

We are early in our development efforts for vonoprazan, and we will need to successfully complete pivotal clinical trials in order to obtain FDA, EMA or comparable foreign regulatory approval to market vonoprazan or any future product candidates. Carrying out late-stage clinical trials and the submission of a successful new drug application, or NDA, is a complicated process. As an organization, we plan to commence pivotal Phase 3 clinical trials of vonoprazan in erosive esophagitis and *H. pylori* infection in the fourth quarter of 2019. We have not yet conducted any clinical trials for vonoprazan or any other product candidates and have limited experience as a company in preparing, submitting and prosecuting regulatory filings. As a company, we have not previously submitted an IND or an NDA, whether for one or multiple indications, or other comparable foreign regulatory submission for any product candidate. In addition, we have had limited interactions with the FDA and cannot be certain how many clinical trials of vonoprazan or any other product candidates will be required or how such trials should be designed. Consequently, we may be unable to successfully and efficiently execute and complete necessary clinical trials in a way that leads to regulatory submission and approval of vonoprazan or any future product candidates. We may require more time and incur greater costs than our competitors and may not succeed in obtaining regulatory approvals of product candidates that we develop. Failure to commence or complete, or delays in, our planned clinical trials, could prevent us from or delay us in submitting NDAs for and commercializing vonoprazan or any future product candidates.

***Vonoprazan and any future product candidates are subject to extensive regulation and compliance obligations, which is costly and time consuming, and such regulation may cause unanticipated delays or prevent the receipt of the required approvals to commercialize vonoprazan and any future product candidates.***

The clinical development, manufacturing, labeling, storage, record-keeping, advertising, promotion, import, export, marketing and distribution of vonoprazan and any future product candidates are subject to extensive regulation by the FDA in the United States, the EMA in the European Union and by comparable foreign regulatory authorities in other foreign markets. In the United States, we are not permitted to market vonoprazan and any future product candidates until we receive regulatory approval from the FDA and in Europe, we are not permitted to market vonoprazan and any future

product candidates until we receive regulatory approval from the EMA. The process of obtaining regulatory approval is expensive, often takes many years following the commencement of clinical trials and can vary substantially based upon the type, complexity and novelty of the product candidates involved, as well as the target indications and patient population. The ability of the FDA and EMA to review and approve new products can be affected by a variety of factors, including government budget and funding levels and the ability to hire and retain key personnel. In addition, approval policies or regulations may change, and the FDA and EMA have substantial discretion in the drug approval process, including the ability to delay, limit or deny approval of a product candidate for many reasons. Despite the time and expense invested in clinical development of product candidates, regulatory approval is never guaranteed.

Prior to obtaining approval to commercialize a product candidate in the United States or internationally, we must demonstrate with substantial evidence from adequate and well-controlled clinical trials, and to the satisfaction of the FDA or comparable foreign regulatory authorities, that such product candidates are safe and effective for their intended uses. Results from nonclinical studies and clinical trials can be interpreted in different ways. Even if we believe the nonclinical or clinical data for vonoprazan and any future product candidates are promising, such data may not be sufficient to support approval by the FDA and comparable foreign regulatory authorities. The FDA or comparable foreign regulatory authorities, as the case may be, may also require us to conduct additional preclinical studies or clinical trials for vonoprazan and any future product candidates either prior to or post-approval, or may object to elements of our clinical development program.

The FDA, EMA or other comparable foreign regulatory authorities can delay, limit or deny approval of a product candidate for many reasons, including:

- such authorities may disagree with the design or implementation of our clinical trials;
- negative or ambiguous results from our clinical trials or results may not meet the level of statistical significance required by the FDA, EMA, or other comparable foreign regulatory agencies for approval;
- serious and unexpected drug-related side effects may be experienced by participants in our clinical trials or in clinical trials conducted by Takeda or others outside of our licensed territories, or by patients using vonoprazan or drugs similar to vonoprazan;
- the population studied in the clinical trial may not be sufficiently broad or representative to assure safety in the full population for which we seek approval;
- such authorities may not accept clinical data from trials which are conducted at clinical facilities or in countries where the standard of care is potentially different from that of the United States;
- we may be unable to demonstrate to the satisfaction of such authorities that a product candidate is safe and effective for its proposed indication and that a product candidate's clinical and other benefits outweigh its safety risks;
- such authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- such authorities may not agree that the data collected from clinical trials of vonoprazan, including data collected from clinical trials conducted by Takeda and independent investigators outside of our licensed territories, and any future product candidates are acceptable or sufficient to support the submission of an NDA or other submission or to obtain regulatory approval, and such authorities may impose requirements for additional preclinical studies or clinical trials;
- such authorities may disagree regarding the formulation, labeling and/or the specifications of vonoprazan and any future product candidates;

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- approval may be granted only for indications that are significantly more limited than what we apply for and/or with other significant restrictions on distribution and use;
- such authorities may find deficiencies in the manufacturing processes or facilities of Takeda or any future third-party manufacturers with which we contract for clinical and commercial supplies;
- regulations of such authorities may significantly change in a manner rendering our or any of our potential future collaborators' clinical data insufficient for approval; or
- such authorities may not accept a submission due to, among other reasons, the content or formatting of the submission.

With respect to foreign markets, approval procedures vary among countries and, in addition to the foregoing risks, may involve additional product testing, administrative review periods and agreements with pricing authorities. In addition, events raising questions about the safety of certain marketed pharmaceuticals may result in increased cautiousness by the FDA, EMA, and other comparable foreign regulatory authorities in reviewing new drugs based on safety, efficacy, or other regulatory considerations and may result in significant delays in obtaining regulatory approvals. Any delay in obtaining, or inability to obtain, applicable regulatory approvals would prevent us or any of our potential future collaborators from commercializing vonoprazan and any future product candidates.

Of the large number of drugs in development, only a small percentage successfully complete the FDA, EMA or foreign regulatory approval processes and are commercialized. The lengthy approval process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval to market vonoprazan and any future product candidates, which would significantly harm our business, financial condition, results of operations and prospects.

Even if we eventually complete clinical trials and receive approval of an NDA or foreign marketing application for vonoprazan and any future product candidates, the FDA, EMA or other comparable foreign regulatory authority may grant approval contingent on the performance of costly additional clinical trials, including confirmatory Phase 3 clinical trials, Phase 4 clinical trials, and/or the implementation of a REMS, which may be required to ensure safe use of the drug after approval. The FDA, EMA or other comparable foreign regulatory authority also may approve a product candidate for a more limited indication or patient population than we originally requested, and the FDA, EMA or other comparable foreign regulatory authority may not approve the labeling that we believe is necessary or desirable for the successful commercialization of a product. Any delay in obtaining, or inability to obtain, applicable regulatory approval would delay or prevent commercialization of that product candidate and would materially adversely impact our business and prospects.

***We may not be successful in our efforts to expand our pipeline by identifying additional indications and formulations for which to investigate vonoprazan in the future. We may expend our limited resources to pursue a particular indication or formulation for vonoprazan and fail to capitalize on product candidates, indications or formulations that may be more profitable or for which there is a greater likelihood of success.***

Because we have limited financial and managerial resources, we focus on specific indications and formulations for vonoprazan. As a result, we may fail to generate additional clinical development opportunities for vonoprazan for a number of reasons, including, vonoprazan may in certain indications, on further study, be shown to have harmful side effects, limited to no efficacy or other characteristics that indicate that it is unlikely to receive marketing approval and achieve market acceptance in such additional indications. For example, we believe the rapid onset of action of vonoprazan may enable on-demand, or as needed, use for the management of non-erosive reflux

disease, or NERD. However, two Phase 3 clinical trials of vonoprazan in Japanese patients with endoscopically confirmed NERD conducted by Takeda did not demonstrate a statistically significant difference in symptom scores between vonoprazan and placebo. While we believe that this result may be due to the selection of patients with mild to moderate symptoms rather than more frequent and severe symptoms, we may be incorrect in this belief and any future clinical trials we conduct in NERD patients may not succeed for similar or other reasons. Furthermore, research programs to identify additional indications for vonoprazan require substantial technical, financial and human resources. We may also pursue additional formulations and packaging for vonoprazan, such as orally disintegrating tablets and other oral dosage forms for patients with difficulty swallowing, an intravenous formulation for in-hospital applications, and pre-packaged convenience packs for the eradication of *H. pylori* infection. However, we may not successfully develop these additional formulations for chemistry-related, stability-related or other reasons. If we do not accurately evaluate the commercial potential or target market for vonoprazan or any future product candidates, we may relinquish valuable rights to that product candidate through future collaborations, licenses and other similar arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

Additionally, we may pursue additional in-licenses or acquisitions of development-stage assets or programs, which entails additional risk to us. Identifying, selecting and acquiring promising product candidates requires substantial technical, financial and human resources expertise. Efforts to do so may not result in the actual acquisition or license of a particular product candidate, potentially resulting in a diversion of our management's time and the expenditure of our resources with no resulting benefit.

***We intend to enroll patients in Europe in both of our planned Phase 3 clinical trials. Additionally, we may conduct future clinical trials outside of the United States. However, the FDA and other foreign equivalents may not accept data from such trials, in which case our development plans will be delayed, which could materially harm our business.***

We plan to enroll patients in Europe in both of our planned Phase 3 clinical trials, and we may conduct one or more of our future clinical trials outside the United States. Although the FDA may accept data from clinical trials conducted outside the United States, acceptance of this data is subject to certain conditions imposed by the FDA. For example, the FDA requires the clinical trial to have been conducted in accordance with GCPs, and the FDA must be able to validate the data from the clinical trial through an onsite inspection if it deems such inspection necessary. In addition, when clinical trials are conducted only at sites outside of the United States, the FDA generally does not provide advance comment on the clinical protocols for the trials, and therefore there is an additional potential risk that the FDA could determine that the study design or protocol for a non-U.S. clinical trial was inadequate, which would likely require us to conduct additional clinical trials. The FDA may not accept data from clinical trials conducted outside of the United States. If the FDA does not accept data from our clinical trials of vonoprazan and any future product candidates, it would likely result in the need for additional clinical trials, which would be costly and time consuming and delay or permanently halt our development of vonoprazan and any future product candidates.

Conducting clinical trials outside the United States also exposes us to additional risks, including risks associated with:

- additional foreign regulatory requirements;
- foreign exchange fluctuations;
- compliance with foreign manufacturing, customs, shipment and storage requirements;
- cultural differences in medical practice and clinical research; and
- diminished protection of intellectual property in some countries.

***Interim, topline and preliminary data from clinical trials that we or others announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.***

From time to time, we or others, such as Takeda, may publicly disclose preliminary or topline data from clinical trials, which are based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular study or trial. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the topline results that we or others report may differ from future results of the same clinical trials, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Topline data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data previously published. As a result, topline data should be viewed with caution until the final data are available. From time to time, we or others may also disclose interim data from clinical trials. Interim data from clinical trials are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Adverse differences between preliminary or interim data and final data could significantly harm our business prospects.

Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercialization of the particular product candidate or product and our company in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is based on what is typically extensive information, and you or others may not agree with what we determine is the material or otherwise appropriate information to include in our disclosure, and any information we determine not to disclose may ultimately be deemed significant with respect to future decisions, conclusions, views, activities or otherwise regarding a particular drug, drug candidate or our business. If the topline data that we report differ from actual results, or if others, including regulatory authorities, disagree with the conclusions reached, our ability to obtain approval for, and commercialize, vonoprazan and any future product candidates may be harmed, which could harm our business, operating results, prospects, or financial condition.

**Risks Related to Our Reliance on Third Parties**

***We rely on the Takeda License to provide us rights to develop and commercialize vonoprazan in the United States, Europe, and Canada. If the license agreement is terminated, we would lose our rights to develop and commercialize vonoprazan.***

Pursuant to the Takeda License, we have secured an exclusive license from Takeda to commercialize vonoprazan products using specified formulations for all human therapeutic uses in the United States, Europe, and Canada, and a non-exclusive license to develop and manufacture vonoprazan products anywhere in the world (subject to Takeda's consent as to each country) for the purposes of commercializing the vonoprazan products in the United States, Europe, and Canada.

The Takeda License will continue until the expiration of the obligation to pay royalties in all countries and on all products, unless terminated earlier. We may terminate the Takeda License in its entirety without cause upon prior written notice. We and Takeda may terminate the Takeda License in the case of the other party's insolvency or for the other party's material uncured breach. Takeda may terminate the Takeda License in its entirety if we challenge the licensed patents, or if we assist any third party in challenging such patents. In addition, if any of the regulatory milestones or other cash payments become due under the terms of the Takeda License, we may not have sufficient funds

available to meet our obligations, which would allow Takeda to terminate the Takeda License. If the license agreement is terminated, we would lose our rights to develop and commercialize vonoprazan, which in turn would have a material adverse effect on our business, operating results and prospects.

***We intend to rely on third parties to conduct our clinical trials. Any failure by a third party to conduct the clinical trials according to GCPs and other requirements and in a timely manner may delay or prevent our ability to seek or obtain regulatory approval for or commercialize vonoprazan and any future product candidates.***

We will be dependent on third parties to conduct our preclinical and clinical trials, including our planned Phase 3 clinical trials of vonoprazan. Specifically, we intend to use and rely on, medical institutions, clinical investigators, CROs and consultants to conduct our clinical trials in accordance with our clinical protocols and regulatory requirements. These CROs, investigators and other third parties will play a significant role in the conduct and timing of these trials and subsequent collection and analysis of data. While we have agreements governing the activities of our third-party contractors, we have limited influence over their actual performance. Nevertheless, we are responsible for ensuring that each of our clinical trials is conducted in accordance with the applicable protocol and legal, regulatory and scientific standards, and our reliance on the CROs and other third parties does not relieve us of our regulatory responsibilities. We and our CROs are required to comply with GCP requirements, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for vonoprazan and any future product candidates that reach clinical development. Regulatory authorities enforce these GCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of our CROs or trial sites fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable, and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. In addition, our clinical trials must be conducted with product produced under cGMP regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

CROs, investigators or other third parties may not devote adequate time and resources to such trials or perform as contractually required. If any of these third parties fail to meet expected deadlines, adhere to our clinical protocols or meet regulatory requirements, or otherwise performs in a substandard manner, our clinical trials may be extended, delayed, or terminated. In addition, many of the third parties with whom we contract may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials or other drug development activities that could harm our competitive position. In addition, principal investigators for our clinical trials may serve as scientific advisors or consultants to us from time to time and may receive cash or equity compensation in connection with such services. If these relationships and any related compensation result in perceived or actual conflicts of interest, or the FDA concludes that the financial relationship may have affected the interpretation of the study, the integrity of the data generated at the applicable clinical trial site may be questioned and the utility of the clinical trial itself may be jeopardized, which could result in the delay or rejection of any NDA we submit by the FDA. Any such delay or rejection could prevent us from commercializing vonoprazan and any future product candidates.

If any of our relationships with these third parties terminate, we may not be able to enter into arrangements with alternative third parties or do so on commercially reasonable terms. Switching or adding additional CROs, investigators and other third parties involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Though we carefully manage our relationships with our CROs, investigators and other third parties, we may encounter challenges or delays in the future and these

delays or challenges may have a material adverse impact on our business, financial condition and prospects.

***We currently rely on Takeda for the manufacture of vonoprazan for clinical development and expect to continue to do so for the foreseeable future. This reliance on a third party increases the risk that we will not have sufficient quantities of vonoprazan or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.***

We do not own or operate manufacturing facilities and have no plans to build our own clinical or commercial scale manufacturing capabilities. Pursuant to the Takeda License, we entered in a clinical manufacturing and supply agreement with Takeda for the supply of vonoprazan for our clinical trials. In addition, we have the option to negotiate in good faith to enter into a commercial supply agreement with Takeda for the commercial supply of vonoprazan, and we are exploring additional options for commercial supply of vonoprazan from other third party contract manufacturers. As a result, we currently rely, and expect to continue to rely, on Takeda for the manufacture of vonoprazan and related raw materials for clinical development, as well as for commercial manufacture if vonoprazan receives marketing approval. However, we may not be able to enter into a commercial supply agreement with Takeda or other third parties on acceptable terms, or at all. The facilities used by Takeda to manufacture vonoprazan must be approved by the FDA for the manufacture of vonoprazan pursuant to inspections that may be conducted after we submit marketing authorizations to the FDA and comparable foreign regulatory authorities. We do not control the manufacturing process of, and are completely dependent on, Takeda for compliance with cGMP requirements for manufacture of drug products. If Takeda, or any other third party manufacturer we contract with in the future, cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, including requirements related to the manufacturing of high potency compounds, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no control over Takeda's ability to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve of facilities of the third-party manufacturer for the manufacture of vonoprazan or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market vonoprazan, if approved. Our failure, or Takeda's failure, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our products. Furthermore, Takeda may choose to prioritize the manufacture of vonoprazan for its markets over the manufacture of vonoprazan for our licensed markets.

Our or Takeda's failure, or the failure of any future third-party manufacturer, to execute on our manufacturing requirements, to do so on commercially reasonable terms and comply with cGMP could adversely affect our business in a number of ways, including:

- an inability to initiate and continue clinical trials of vonoprazan or any future product candidates;
- delay in submitting regulatory applications, or receiving marketing approvals, for vonoprazan and any future product candidates;
- subjecting third-party manufacturing facilities or our manufacturing facilities to additional inspections by regulatory authorities;
- requirements to cease development or to recall batches of vonoprazan and any future product candidates; and



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- in the event of approval to market and commercialize vonoprazan or any future product candidates, an inability to meet commercial demands for vonoprazan or any future product candidates.

Reliance on third-party manufacturers entails additional risks, including:

- failure of third-party manufacturers to comply with regulatory requirements and maintain quality assurance;
- breach of the manufacturing agreement by the third party;
- failure to manufacture our product according to our specifications;
- failure to manufacture our product according to our schedule or at all;
- misappropriation of our proprietary information, including our trade secrets and know-how; and
- termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

Vonoprazan and any products that we may develop may compete with other product candidates and products for access to manufacturing facilities. Moreover, there may be a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us.

Any performance failure on the part of Takeda or any future manufacturers could delay clinical development or marketing approval, and any related remedial measures may be costly or time consuming to implement. We do not currently have arrangements in place for redundant supply or a second source for all required raw materials used in the manufacture of vonoprazan and any future product candidates. If Takeda cannot perform as agreed, we may be required to replace Takeda and we may be unable to replace them on a timely basis or at all.

Our current and anticipated future dependence upon others for the manufacture of vonoprazan or any future product candidates or products may adversely affect our future profit margins and our ability to commercialize any products that receive marketing approval on a timely and competitive basis.

***Our reliance on third parties, including Takeda, requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.***

Because we currently rely on Takeda to manufacture vonoprazan and to perform quality testing, we must, at times, share our proprietary technology and confidential information, including trade secrets, with them. We seek to protect our proprietary technology, in part, by entering into confidentiality agreements, consulting agreements or other similar agreements with our advisors, employees and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information. Despite the contractual provisions employed when working with third parties, the need to share trade secrets and other confidential information increases the risk that such trade secrets become known by our competitors, are intentionally or inadvertently incorporated into the technology of others or are disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how and trade secrets and despite our efforts to protect our trade secrets, a competitor's discovery of our proprietary technology and confidential information or other unauthorized use or disclosure would impair our competitive position and may have a material adverse effect on our business, financial condition, results of operations and prospects.

***We may seek to enter into collaborations, licenses and other similar arrangements and may not be successful in doing so, and even if we are, we may not realize the benefits of such relationships.***

We may seek to enter into collaborations, joint ventures, licenses and other similar arrangements for the development or commercialization of vonoprazan and any future product candidates, due to capital costs required to develop or commercialize vonoprazan and any future product candidates or manufacturing constraints. We may not be successful in our efforts to establish such collaborations for vonoprazan and any future product candidates because vonoprazan and any future product candidates may be deemed to be at too early of a stage of development for collaborative effort or third parties may not view vonoprazan and any future product candidates as having the requisite potential to demonstrate safety and efficacy or significant commercial opportunity. In addition, we face significant competition in seeking appropriate strategic partners, and the negotiation process can be time consuming and complex. Further, any future collaboration agreements may restrict us from entering into additional agreements with potential collaborators. Following a strategic transaction or license, we may not achieve an economic benefit that justifies such transaction.

Even if we are successful in our efforts to establish such collaborations, the terms that we agree upon may not be favorable to us, and we may not be able to maintain such collaborations if, for example, development or approval of a product candidate is delayed, the safety of a product candidate is questioned or sales of an approved product candidate are unsatisfactory.

In addition, any potential future collaborations may be terminable by our strategic partners, and we may not be able to adequately protect our rights under these agreements. Furthermore, strategic partners may negotiate for certain rights to control decisions regarding the development and commercialization of vonoprazan and any future product candidates, if approved, and may not conduct those activities in the same manner as we do. Any termination of collaborations we enter into in the future, or any delay in entering into collaborations related to vonoprazan or any future product candidates, could delay the development and commercialization of vonoprazan or any future product candidates and reduce their competitiveness if they reach the market, which could have a material adverse effect on our business, financial condition and results of operations.

#### **Risks Related to Commercialization of Vonoprazan and Any Future Product Candidates**

***Even if we receive regulatory approval for vonoprazan and any future product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. Additionally, vonoprazan and any future product candidates, if approved, could be subject to labeling and other restrictions on marketing or withdrawal from the market, and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with vonoprazan and any future product candidates, if approved.***

Following potential approval of vonoprazan or any future product candidates, the FDA, EMA or other comparable regulatory authority may impose significant restrictions on a product's indicated uses or marketing or impose ongoing requirements for potentially costly and time consuming post-approval studies, post-market surveillance or clinical trials to monitor the safety and efficacy of the product. The FDA may also require a REMS as a condition of approval of vonoprazan or any future product candidates, which could include requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. In addition, if the FDA, EMA or a comparable foreign regulatory authority approves vonoprazan or any future product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and recordkeeping for our products will be subject to extensive and ongoing regulatory

requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMPs and GCP requirements for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems with our products, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of our products, withdrawal of the product from the market or voluntary or mandatory product recalls;
- restrictions on product distribution or use, or requirements to conduct post-marketing studies or clinical trials;
- fines, restitutions, disgorgement of profits or revenues, warning letters, untitled letters or holds on clinical trials;
- refusal by the FDA or comparable foreign regulatory authority to approve pending applications or supplements to approved applications filed by us or suspension or revocation of approvals;
- product seizure or detention, or refusal to permit the import or export of our products; and
- injunctions or the imposition of civil or criminal penalties.

The occurrence of any event or penalty described above may inhibit our ability to commercialize vonoprazan and any future product candidates and generate revenue and could require us to expend significant time and resources in response and could generate negative publicity.

In addition, if vonoprazan or any future product candidate is approved, our product labeling, advertising and promotion will be subject to regulatory requirements and continuing regulatory review. The FDA strictly regulates the promotional claims that may be made about drug products. In particular, a product may not be promoted for uses that are not approved by the FDA as reflected in the product's approved labeling. However, companies may share truthful and not misleading information that is otherwise consistent with a product's FDA approved labeling. If we receive marketing approval for vonoprazan or any future product candidate, physicians may nevertheless prescribe it to their patients in a manner that is inconsistent with the approved label. If we are found to have promoted such off-label uses, we may become subject to significant liability. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant sanctions. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

The FDA's and other regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of vonoprazan and any future product candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

We also cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative or executive action, either in the United States or internationally. The policies of the FDA and of other regulatory authorities may change and additional governmental regulations may be enacted that could prevent, limit or delay regulatory approval of vonoprazan or any future product candidates. For example, certain policies of the current U.S.

administration may impact our business and industry. Namely, the current U.S. administration has taken several executive actions, including the issuance of a number of Executive Orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine regulatory and oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. It is difficult to predict how these executive actions, including the Executive Orders, will be implemented, and the extent to which they will impact the FDA's ability to exercise its regulatory authority. If these executive actions impose constraints on the FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted.

If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business, prospects, financial condition and results of operations. Non-compliance by us or any future collaborator with regulatory requirements, including safety monitoring or pharmacovigilance, and with requirements related to the development of products for the pediatric population can also result in significant financial penalties.

***The commercial success of vonoprazan or any future product candidates will depend upon the degree of market acceptance of such product candidates by physicians, patients, healthcare payors and others in the medical community.***

Vonoprazan and any future product candidates may not be commercially successful. The commercial success of vonoprazan or any future product candidates, if approved, will depend significantly on the broad adoption and use of such product by physicians and patients for approved indications. The degree of market acceptance of vonoprazan or any future products, if approved, will depend on a number of factors, including:

- demonstration of clinical efficacy and safety compared to other more-established products;
- the indications for which vonoprazan or any future product candidates are approved;
- the limitation of our targeted patient population and other limitations or warnings contained in any FDA-approved labeling;
- acceptance of a new drug for the relevant indication by healthcare providers and their patients;
- the pricing and cost-effectiveness of our products, as well as the cost of treatment with our products in relation to alternative treatments and therapies;
- our ability to obtain and maintain sufficient third-party coverage and adequate reimbursement from government healthcare programs, including Medicare and Medicaid, private health insurers and other third-party payors;
- the willingness of patients to pay all, or a portion of, out-of-pocket costs associated with our products in the absence of sufficient third-party coverage or adequate reimbursement;
- any restrictions on the use of our products, and the prevalence and severity of any adverse effects;
- potential product liability claims;
- the timing of market introduction of our products as well as competitive drugs;
- the effectiveness of our or any of our potential future collaborators' sales and marketing strategies; and
- unfavorable publicity relating to the product.

If vonoprazan or any future product candidate is approved but does not achieve an adequate level of acceptance by physicians, hospitals, healthcare payors or patients, we may not generate sufficient revenue from that product and may not become or remain profitable. Our efforts to educate the medical community and third-party payors regarding the benefits of our products may require significant resources and may never be successful.

With respect to vonoprazan, Takeda has the right to develop and commercialize the product outside of the United States, Europe, and Canada and has received marketing approval for vonoprazan in certain countries in Asia and Latin America. We have little or no control over Takeda's commercialization activities with respect to vonoprazan outside of our licensed territories even though those activities could impact our ability to successfully commercialize vonoprazan. For example, Takeda can make statements or use promotional materials with respect to vonoprazan outside of our licensed territories that are inconsistent with our positioning of the product in the United States, Europe, and Canada, and could sell vonoprazan in foreign countries at prices that are dramatically lower than the prices we would charge in our licensed territories. These activities and decisions, while occurring outside of our licensed territories, could harm our commercialization strategy. In addition, product recalls or safety issues with vonoprazan outside our licensed territories could result in serious damage to the brand and impair our ability to successfully market vonoprazan in our licensed territories.

***The FDA and other regulatory agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. If we are found or alleged to have improperly promoted off-label uses, we may become subject to significant liability.***

The FDA and other regulatory agencies strictly regulate the promotional claims that may be made about prescription products, as vonoprazan and any future product candidates would be, if approved. In particular, a product may not be promoted for uses that are not approved by the FDA or such other regulatory agencies as reflected in the product's approved labeling. If we receive marketing approval for a product candidate, physicians may nevertheless prescribe it to their patients in a manner that is inconsistent with the approved label. If we are found to have promoted such off-label uses, we may become subject to significant liability. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed. If we cannot successfully manage the promotion of vonoprazan or any future product candidates, if approved, we could become subject to significant liability, which would materially adversely affect our business and financial condition.

***The successful commercialization of vonoprazan or any future product candidates, if approved, will depend in part on the extent to which governmental authorities and health insurers establish coverage, adequate reimbursement levels and favorable pricing policies. Failure to obtain or maintain coverage and adequate reimbursement for our products could limit our ability to market those products and decrease our ability to generate revenue.***

The availability of coverage and the adequacy of reimbursement by governmental healthcare programs, such as Medicare and Medicaid, private health insurers and other third-party payors are essential for most patients to be able to afford prescription medications such as vonoprazan or any future product candidate, if approved. Our ability to achieve coverage and acceptable levels of reimbursement for our products by third-party payors will have an effect on our ability to successfully commercialize those products. Even if we obtain coverage for a given product by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. We cannot be sure that coverage and reimbursement in the United States, the European Union or elsewhere will be available for any product that we may develop, and any reimbursement that may become available may be decreased or eliminated in the future.

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Third-party payors increasingly are challenging prices charged for pharmaceutical products and services, and many third-party payors may refuse to provide coverage and reimbursement for particular drugs when an equivalent generic drug or a less expensive therapy is available. It is possible that a third-party payor may consider our products as substitutable and only offer to reimburse patients for the less expensive product. Even if we are successful in demonstrating improved efficacy or improved convenience of administration with our products, pricing of existing drugs may limit the amount we will be able to charge for our products. These payors may deny or revoke the reimbursement status of a given product or establish prices for new or existing marketed products at levels that are too low to enable us to realize an appropriate return on our investment in product development. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize our products and may not be able to obtain a satisfactory financial return on products that we may develop.

There is significant uncertainty related to third-party payor coverage and reimbursement of newly approved products. In the United States, third-party payors, including private and governmental payors, such as the Medicare and Medicaid programs, play an important role in determining the extent to which new drugs will be covered. Some third-party payors may require pre-approval of coverage for new or innovative devices or drug therapies before they will reimburse healthcare providers who use such therapies. It is difficult to predict at this time what third-party payors will decide with respect to the coverage and reimbursement for our products.

Obtaining and maintaining reimbursement status is time consuming, costly and uncertain. The Medicare and Medicaid programs increasingly are used as models for how private payors and other governmental payors develop their coverage and reimbursement policies for drugs. However, no uniform policy for coverage and reimbursement for products exists among third-party payors in the United States. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. As a result, the coverage determination process will require us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance. Furthermore, rules and regulations regarding reimbursement change frequently, in some cases at short notice, and we believe that changes in these rules and regulations are likely.

Outside the United States, international operations are generally subject to extensive governmental price controls and other market regulations, and we believe the increasing emphasis on cost-containment initiatives in Europe and other countries has and will continue to put pressure on the pricing and usage of our products. In many countries, the prices of medical products are subject to varying price control mechanisms as part of national health systems. Other countries allow companies to fix their own prices for medical products but monitor and control company profits. Additional foreign price controls or other changes in pricing regulation could restrict the amount that we are able to charge for our products. Accordingly, in markets outside the United States, the reimbursement for our products may be reduced compared with the United States and may be insufficient to generate commercially reasonable revenue and profits.

Moreover, increasing efforts by governmental and third-party payors in the United States and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for newly approved products and, as a result, they may not cover or provide adequate payment for our products. We expect to experience pricing pressures in connection with the sale of any of our products due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs and surgical procedures and other treatments, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products.

***We face significant competition, and if our competitors develop technologies or product candidates more rapidly than we do or their technologies are more effective, our ability to develop and successfully commercialize products may be adversely affected.***

The biotechnology and pharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary and novel products and product candidates. Our competitors have developed, are developing or may develop products, product candidates and processes competitive with vonoprazan. Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future. We believe that a significant number of products are currently under development, and may become commercially available in the future, for the treatment of GI diseases for which we may attempt to develop vonoprazan or any future product candidates. Our competitors include larger and better funded pharmaceutical, biopharmaceutical, biotechnological and therapeutics companies. Moreover, we may also compete with universities and other research institutions who may be active in the indications we are targeting and could be in direct competition with us. We also compete with these organizations to recruit management, scientists and clinical development personnel, which could negatively affect our level of expertise and our ability to execute our business plan. We will also face competition in establishing clinical trial sites, enrolling patients for clinical trials and in identifying and in-licensing new product candidates. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies.

We expect that vonoprazan, if approved for the treatment of erosive esophagitis and eradication of *H. pylori* infection, will primarily compete with generic PPIs marketed by multiple pharmaceutical companies in both the prescription and OTC markets. Additionally, RedHill Biopharma Ltd. is developing Talicia, a co-formulated capsule comprising generic omeprazole, amoxicillin, and rifabutin for the treatment of *H. pylori* infection, and filed an NDA in the United States in May 2019. Ironwood Pharmaceuticals, Inc. is developing IW-3718, a bile acid sequestrant, currently in Phase 3 clinical trials as an adjunct to PPIs for the treatment of patients with persistent GERD.

We are also aware of other P-CABs in territories outside of the United States that, if developed and approved in our territories, may compete with vonoprazan. Revaprazan is marketed by Yuhan Corporation in South Korea. Tegoprazan is marketed by CJ Healthcare Corp. in South Korea and is currently in Phase 3 development in Japan by RaQualia Pharma, Inc. Daewoong Pharmaceutical Co., Ltd.'s DWP14012 has been studied in Phase 2 clinical trials in South Korea, and Cinclus Pharma AG's X842 has completed a Phase 1 clinical trial in Europe.

Additionally, we are aware of several clinical-stage PPIs in territories outside of the United States that if developed and approved in our licensed territories may compete with vonoprazan. These include Dexam Medica's DLBS-2411, currently in Phase 3 clinical trials in Indonesia, Sihuan Pharmaceutical's anaprazole, currently in Phase 3 clinical trials in China, Eisai's azeloprazole, currently in a Phase 2 clinical trial in Japan, and Sidem Pharma's tenatoprazole, currently in Phase 2 clinical trials in Europe and Canada.

Many of our competitors have significantly greater financial, technical, manufacturing, marketing, sales and supply resources or experience than we do. If we successfully obtain approval for vonoprazan or any future product candidate, we will face competition based on many different factors, including the safety and effectiveness of our products, the ease with which our products can be administered and the extent to which patients accept relatively new routes of administration, the timing and scope of regulatory approvals for these products, the availability and cost of manufacturing, marketing and sales capabilities, price, reimbursement coverage and patent position. Competing products could present superior treatment alternatives, including by being more effective, safer, more

convenient, less expensive or marketed and sold more effectively than any products we may develop. Competitive products may make any products we develop obsolete or noncompetitive before we recover the expense of developing and commercializing vonoprazan or any future product candidates. If we are unable to compete effectively, our opportunity to generate revenue from the sale of our products we may develop, if approved, could be adversely affected.

***If the market opportunities for vonoprazan or any future products are smaller than we believe they are, our revenue may be adversely affected, and our business may suffer.***

The precise incidence and prevalence for all the conditions we aim to address with vonoprazan or any future product candidates are unknown. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment of vonoprazan or any future product candidates, are based on our beliefs and estimates. These estimates have been derived from a variety of sources, including the scientific literature, surveys of clinics or market research, and may prove to be incorrect. Further, new trials may change the estimated incidence or prevalence of these diseases. The total addressable market across vonoprazan and any future product candidates will ultimately depend upon, among other things, the diagnosis criteria included in the final label for each of vonoprazan and any future product candidates approved for sale for these indications, the availability of alternative treatments and the safety, convenience, cost and efficacy of vonoprazan and any future product candidates relative to such alternative treatments, acceptance by the medical community and patient access, drug pricing and reimbursement. The number of patients in the United States and other major markets and elsewhere may turn out to be lower than expected, patients may not be otherwise amenable to treatment with our products or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business.

***We currently have no marketing and sales organization and have no experience as a company in commercializing products, and we may have to invest significant resources to develop these capabilities. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our products, we may not be able to generate product revenue.***

We have no internal sales, marketing or distribution capabilities, nor have we commercialized a product. If vonoprazan or any future product candidates ultimately receive regulatory approval, we must build a marketing and sales organization with technical expertise and supporting distribution capabilities to commercialize each such product in major markets, which will be expensive and time consuming, or collaborate with third parties that have direct sales forces and established distribution systems, either to augment our own sales force and distribution systems or in lieu of our own sales force and distribution systems. We plan to independently commercialize vonoprazan in the United States by building a leading specialty gastroenterology commercial infrastructure to support the adoption of vonoprazan and we plan to seek one or more partners with existing commercial infrastructure and expertise in Europe and Canada. We have no prior experience as a company in the marketing, sale and distribution of biopharmaceutical products and there are significant risks involved in building and managing a marketing and sales organization, including our ability to hire, retain and incentivize qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel and effectively manage a geographically dispersed sales and marketing team. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of these products. We may not be able to enter into collaborations or hire consultants or external service providers to assist us in sales, marketing and distribution functions on acceptable financial terms, or at all. In addition, our product revenues and our profitability, if any, may be lower if we rely on third parties for these functions than if we were to market, sell and distribute any products that we develop ourselves. We likely will have little control over such



third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively. If we are not successful in commercializing vonoprazan or any future product candidates, either on our own or through arrangements with one or more third parties, we may not be able to generate any future product revenue and we would incur significant additional losses.

***Our future growth may depend, in part, on our ability to operate in foreign markets, particularly Europe and Canada, where we would be subject to additional regulatory burdens and other risks and uncertainties.***

Our future growth may depend, in part, on our ability to develop and commercialize vonoprazan and any future product candidates in foreign markets, particularly Europe and Canada. We are not permitted to market or promote vonoprazan and any future product candidates before we receive regulatory approval from applicable regulatory authorities in foreign markets, and we may never receive such regulatory approvals for vonoprazan or any future product candidates. To obtain separate regulatory approval in any other countries we must comply with numerous and varying regulatory requirements regarding safety and efficacy and governing, among other things, clinical trials, commercial sales, pricing and distribution of vonoprazan and any future product candidates. If we obtain regulatory approval of vonoprazan and any future product candidates and ultimately commercialize our products in foreign markets, we would be subject to additional risks and uncertainties, including:

- different regulatory requirements for approval of drugs in foreign countries;
- reduced protection for intellectual property rights;
- the existence of additional third-party patent rights of potential relevance to our business;
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling internationally;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country;
- foreign reimbursement, pricing and insurance regimes;
- workforce uncertainty in countries where labor unrest is common;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities internationally; and
- business interruptions resulting from geopolitical actions, including war and terrorism, or natural disasters including earthquakes, typhoons, floods and fires.

#### **Risks Related to Our Business Operations and Industry**

***Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.***

Our quarterly and annual operating results may fluctuate significantly, which makes it difficult for us to predict our future operating results. These fluctuations may occur due to a variety of factors, many of which are outside of our control, including, but not limited to:

- the timing and cost of, and level of investment in, research, development, regulatory approval and commercialization activities relating to vonoprazan or any future product candidates, which may change from time to time;

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- coverage and reimbursement policies with respect to vonoprazan or any future product candidates, if approved, and potential future drugs that compete with such products, if approved;
- the cost of manufacturing vonoprazan or any future product candidates, which may vary depending on the quantity of production and the terms of our agreements with Takeda and any future third-party manufacturers;
- the timing and amount of the milestone or other payments we will be required to pay to Takeda pursuant to the Takeda License;
- expenditures that we may incur to acquire, develop or commercialize additional product candidates and technologies;
- the level of demand for any approved products, which may vary significantly;
- future accounting pronouncements or changes in our accounting policies; and
- the timing and success or failure of preclinical studies or clinical trials for vonoprazan or any future product candidates or competing product candidates, or any other change in the competitive landscape of our industry, including consolidation among our competitors or partners.

The cumulative effects of these factors could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance.

This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any forecasts we may provide to the market, or if the forecasts we provide to the market are below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated revenue or earnings guidance we may provide.

***Our indebtedness may limit our flexibility in operating our business and adversely affect our financial health and competitive position, and all of our obligations under our indebtedness are secured by substantially all of our assets, excluding our intellectual property and certain other assets. If we default on these obligations, our lenders could foreclose on our assets.***

In May 2019, we entered into the Loan Agreement with SVB and WestRiver. We borrowed \$25.0 million, or Term Loan A, at the inception of the Loan Agreement and have the right to borrow an additional \$25.0 million, or Term Loan B, and which we collectively refer to as the Term Loans. Term Loan B is available through March 31, 2020, provided that (i) we have received at least \$150.0 million of net cash proceeds in connection with the issuance and sale, subsequent to April 1, 2019, of our equity securities and subordinated debt, (ii) we have initiated Phase 3 clinical trials for vonoprazan, and (iii) no event of default has occurred. All obligations under the Term Loans are secured by a first priority lien on substantially all of our assets, excluding intellectual property and certain other assets. We have agreed not to encumber our intellectual property assets without SVB's prior written consent unless a security interest in the underlying intellectual property is necessary to have a security interest in the accounts and proceeds that are part of the assets securing the Term Loans, in which case our intellectual property shall automatically be included within the assets securing the Term Loans. As a result, if we default on any of our obligations under the Loan Agreement, SVB could foreclose on its security interest and liquidate some or all of the collateral, which would harm our business, financial condition and results of operations and could require us to reduce or cease operations.

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In order to service this indebtedness and any additional indebtedness we may incur in the future, we need to generate cash from our operating activities. Our ability to generate cash is subject, in part, to our ability to successfully execute our business strategy, as well as general economic, financial, competitive, regulatory and other factors beyond our control. Our business may not be able to generate sufficient cash flow from operations, and future borrowings or other financings may not be available to us in an amount sufficient to enable us to service our indebtedness and fund our other liquidity needs. To the extent we are required to use cash from operations or the proceeds of any future financing to service our indebtedness instead of funding working capital, capital expenditures or other general corporate purposes, we will be less able to plan for, or react to, changes in our business, industry and in the economy generally. This could place us at a competitive disadvantage compared to our competitors that have less indebtedness.

The Loan Agreement contains customary affirmative and negative covenants that limit our ability to engage in certain transactions that may be in our long-term best interest. The affirmative covenants include, among others, covenants requiring us to maintain our legal existence and governmental approvals, deliver certain financial reports, maintain insurance coverage and satisfy certain requirements regarding our operating accounts. The negative covenants include, among others, limitations on our ability to incur additional indebtedness and liens, merge with other companies or consummate certain changes of control, acquire other companies, engage in new lines of business, make certain investments, pay dividends, transfer or dispose of assets, amend certain material agreements or enter into various specified transactions.

While we believe we are currently in compliance with the covenants contained in the Loan Agreement, we may breach these covenants in the future. Our ability to comply with these covenants may be affected by events and factors beyond our control. In the event that we breach one or more covenants, the lenders may choose to declare an event of default and require that we immediately repay all amounts outstanding under the Loan Agreement, terminate any commitment to extend further credit and foreclose on the collateral. The occurrence of any of these events could have a material adverse effect on our business, financial condition and results of operations.

***We are dependent on the services of our current management and other clinical and scientific personnel, and if we are not able to retain these individuals or recruit additional management or clinical and scientific personnel, our business will suffer.***

Our success depends in part on our continued ability to attract, retain and motivate highly qualified management, clinical and scientific personnel. We are highly dependent upon our current senior management team, our Chairman and our development personnel. The loss of services of any of these individuals or personnel could delay or prevent the successful development of our product pipeline, initiation or completion of our planned clinical trials or the commercialization of vonoprazan or any other future product candidates. Although we have executed employment agreements or offer letters with each member of our senior management team, these agreements are terminable at will with or without notice and, therefore, we may not be able to retain their services as expected. We do not currently maintain "key person" life insurance on the lives of our executives or any of our employees. This lack of insurance means that we may not have adequate compensation for the loss of the services of these individuals.

We will need to expand and effectively manage our managerial, operational, financial and other resources in order to successfully pursue our clinical development and commercialization efforts. We may not be successful in maintaining our unique company culture and continuing to attract or retain qualified management and scientific and clinical personnel in the future due to the intense competition for qualified personnel among pharmaceutical, biotechnology and other businesses. Our industry has experienced a high rate of turnover of management personnel in recent years. If we are not able to

attract, integrate, retain and motivate necessary personnel to accomplish our business objectives, we may experience constraints that will significantly impede the achievement of our development objectives, our ability to raise additional capital and our ability to implement our business strategy.

***We have recently substantially increased the size of our organization, and we may encounter difficulties in managing our growth and expanding our operations successfully.***

We have substantially increased our organization from four employees in February 2018 to 12 full-time employees as of June 30, 2019. As we continue development and pursue the potential commercialization of vonoprazan and any future product candidates, as well as function as a public company, we will need to continue to expand our financial, development, regulatory, manufacturing, marketing and sales capabilities or contract with third parties to provide these capabilities for us. As our operations expand, we expect that we will need to manage additional relationships with various strategic partners, suppliers and other third parties. Our future financial performance and our ability to develop and commercialize vonoprazan and any future product candidates and to compete effectively will depend, in part, on our ability to manage our recent substantial growth and any future growth effectively.

***We are subject to various foreign, federal, and state healthcare and privacy laws and regulations, and our failure to comply with these laws and regulations could harm our results of operations and financial condition.***

Our business operations and current and future arrangements with investigators, healthcare professionals, consultants, third-party payors, patient organizations and customers expose us to broadly applicable foreign, federal and state fraud and abuse and other healthcare and privacy laws and regulations. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell and distribute any products for which we obtain marketing approval. Such laws include, but are not limited to:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving or providing any remuneration (including any kickback, bribe or certain rebates), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, lease, or order, or arranging for or recommending the purchase, lease, or order of any good, facility, item or service, for which payment may be made, in whole or in part, under any U.S. federal healthcare program, such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it in order to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act;
- the U.S. civil and criminal federal false claims and civil monetary penalties laws, including the civil False Claims Act, which can be enforced through civil whistleblower or qui tam actions, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, to the federal government, claims for payment or approval that are false or fraudulent, knowingly making, using or causing to be made or used, a false record or statement material to a false or fraudulent claim, or from knowingly making or causing to be made a false statement to avoid, decrease or conceal an obligation to pay money to the U.S. federal government;
- the U.S. federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, or knowingly and

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willfully falsifying, concealing or covering up a material fact or making any materially false statement, in connection with the delivery of, or payment for, healthcare benefits, items or services. Similar to the U.S. federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the healthcare fraud statute implemented under HIPAA or specific intent to violate it in order to have committed a violation;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and its implementing regulations, also impose obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information of covered entities subject to the rule, such as health plans, healthcare clearinghouses and certain healthcare providers as well as their business associates that perform certain services for or on their behalf involving the use or disclosure of individually identifiable health information;
- the U.S. federal Physician Payments Sunshine Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to certain payments and other "transfers of value" made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by the physicians described above and their immediate family members; and
- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to our business practices, including but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, or by the patients themselves; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information or which require tracking gifts and other remuneration and items of value provided to physicians, other healthcare providers and entities; state and local laws that require the registration of pharmaceutical sales representatives; state and foreign laws governing the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA; state and foreign governments that have enacted or proposed requirements regarding the collection, distribution, use, security, and storage of personally identifiable information and other data relating to individuals (including the EU General Data Protection Regulation 2016/679, or GDPR, and the California Consumer Privacy Act, or CCPA), and federal and state consumer protection laws are being applied to enforce regulations related to the online collection, use, and dissemination of data, thus complicating compliance efforts.

We may also be subject to additional regulation in the conduct of our business. For example, we may be subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended, which prohibits, among other things, U.S. companies and their employees and agents from authorizing, promising, offering, or providing, directly or indirectly, corrupt or improper payments or anything else of value to foreign government officials, employees of public international organizations and foreign government owned or affiliated entities, candidates for foreign political office, and foreign political parties or officials thereof.

In addition, California recently enacted the CCPA, which creates new individual privacy rights for California consumers (as defined in the law) and places increased privacy and security obligations on

entities handling certain personal data of consumers or households. The CCPA will require covered companies to provide new disclosure to consumers about such companies' data collection, use and sharing practices, provide such consumers new ways to opt-out of certain sales or transfers of personal information, and provide consumers with additional causes of action. The CCPA goes into effect on January 1, 2020, and the California Attorney General may bring enforcement actions for violations beginning July 1, 2020. The CCPA was amended on September 23, 2018, and it remains unclear what, if any, further modifications will be made to this legislation or how it will be interpreted. As currently written, the CCPA may impact our business activities and exemplifies the vulnerability of our business to the evolving regulatory environment related to personal data and protected health information.

Ensuring that our internal operations and business arrangements with third parties comply with applicable healthcare laws and regulations could involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of the laws described above or any other governmental laws and regulations that may apply to us, we may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, exclusion from U.S. government funded healthcare programs, such as Medicare and Medicaid, or similar programs in other countries or jurisdictions, disgorgement, imprisonment, contractual damages, reputational harm, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, diminished profits and the curtailment or restructuring of our operations. Further, defending against any such actions can be costly, time consuming and may require significant financial and personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired. If any of the physicians or other providers or entities with whom we expect to do business are found not to be in compliance with applicable laws, they may be subject to significant criminal, civil or administrative sanctions, including exclusion from government funded healthcare programs and imprisonment. If any of the above occur, it could adversely affect our ability to operate our business and our results of operations.

***Enacted and future legislation and healthcare reform measures may increase the difficulty and cost for us to obtain marketing approval for and commercialize vonoprazan and any future product candidates and may affect the prices we may set.***

In the United States and some foreign jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory changes and proposed changes to the healthcare system, including cost-containment measures that may reduce or limit coverage and reimbursement for newly approved drugs and affect our ability to profitably sell any product candidates for which we obtain marketing approval. In particular, there have been and continue to be a number of initiatives at the U.S. federal and state levels that seek to reduce healthcare costs and improve the quality of healthcare.

For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively the Affordable Care Act, was enacted in the United States. Among the provisions of the Affordable Care Act of importance to our potential product candidates, the Affordable Care Act includes:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents, which is apportioned among these entities according to their market share in certain government healthcare programs;
- a Medicare Part D coverage gap discount program, in which manufacturers must agree to offer point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries

during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;

- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13.0% of the average manufacturer price for branded and generic drugs, respectively;
- a methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected;
- an extension of a manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in and conduct comparative clinical effectiveness research, along with funding for such research; and
- establishment of a Center for Medicare Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been judicial and political challenges to certain aspects of the Affordable Care Act, and we expect there will be additional challenges and amendments to the Affordable Care Act in the future. For example, the Tax Cuts and Jobs Act of 2017, or Tax Act, includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the Affordable Care Act on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." On December 14, 2018, a U.S. District Court Judge in the Northern District of Texas, or Texas District Court Judge, ruled that the individual mandate is a critical and inseparable feature of the Affordable Care Act, and therefore, because it was repealed as part of the Tax Act, the remaining provisions of the Affordable Care Act are invalid as well. While the Texas District Court Judge, as well as the Trump Administration and CMS, have stated that the ruling will have no immediate effect, it is unclear how this decision, subsequent appeals, and other efforts to repeal and replace the Affordable Care Act will impact the Affordable Care Act and our business.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. These changes included aggregate reductions to Medicare payments to providers of 2% per fiscal year, which went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, including the Bipartisan Budget Act of 2018, will remain in effect through 2027 unless additional Congressional action is taken. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, reduced Medicare payments to several providers, including hospitals, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Further, there has been heightened governmental scrutiny in the United States of pharmaceutical pricing practices in light of the rising cost of prescription drugs. Such scrutiny has resulted in several recent congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products.

At the federal level, the Trump administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the

price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid and to eliminate cost sharing for generic drugs for low-income patients. While proposed measures will require authorization through additional legislation to become effective, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs.

At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs. Furthermore, there has been increased interest by third party payors and governmental authorities in reference pricing systems and publication of discounts and list prices. These reforms could reduce the ultimate demand for vonoprazan and any future product candidates, if approved, or put pressure on our product pricing, which could negatively affect our business, results of operations, financial condition and prospects.

Additionally, on May 30, 2018, the Trickett Wendler, Frank Mongiello, Jordan McLinn, and Matthew Bellina Right to Try Act of 2017, or Right to Try Act, was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase 1 clinical trial. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a drug manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act.

We expect that these new laws and other healthcare reform measures that may be adopted in the future may result in more rigorous coverage criteria, new payment methodologies and additional downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize vonoprazan and any future product candidates, if approved.

***We and any of our third-party manufacturers or suppliers may use potent chemical agents and hazardous materials, and any claims relating to improper handling, storage or disposal of these materials could be time consuming or costly.***

We and any of our third-party manufacturers or suppliers will use biological materials, potent chemical agents and may use hazardous materials, including chemicals and biological agents and compounds that could be dangerous to human health and safety of the environment. Our operations and the operations of our third-party manufacturers and suppliers also produce hazardous waste products. Federal, state and local laws and regulations govern the use, generation, manufacture, storage, handling and disposal of these materials and wastes. Compliance with applicable environmental laws and regulations may be expensive, and current or future environmental laws and regulations may impair our product development efforts. In addition, we cannot eliminate the risk of accidental injury or contamination from these materials or wastes. We do not carry specific biological or hazardous waste insurance coverage, and our property, casualty and general liability insurance policies specifically exclude coverage for damages and fines arising from biological or hazardous waste exposure or contamination. In the event of contamination or injury, we could be held liable for damages or be penalized with fines in an amount exceeding our resources, and our clinical trials or regulatory approvals could be suspended.



Although we maintain workers' compensation insurance for certain costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials or other work-related injuries, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for toxic tort claims that may be asserted against us in connection with our storage or disposal of biologic, hazardous or radioactive materials.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations, which have tended to become more stringent over time. These current or future laws and regulations may impair our research, development or production efforts. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions or liabilities, which could materially adversely affect our business, financial condition, results of operations and prospects.

***If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of our products.***

We face an inherent risk of product liability as a result of the clinical trials of vonoprazan and any future product candidates and will face an even greater risk if we commercialize vonoprazan and any future product candidates. For example, we may be sued if vonoprazan and any future product candidates allegedly cause injury or are found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product candidate, negligence, strict liability and a breach of warranties. Claims may be brought against us by clinical trial participants, patients or others using, administering or selling products that may be approved in the future. Claims could also be asserted under state consumer protection acts.

If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit or cease the commercialization of our products. Even a successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our products;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- costs to defend the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- significant negative financial impact;
- the inability to commercialize vonoprazan and any future product candidates; and
- a decline in our stock price.

We currently do not have product liability insurance coverage, but will need to obtain such coverage as we begin our clinical trials or if we commence commercialization of vonoprazan and any future product candidates. Insurance coverage is increasingly expensive. Our inability to obtain and retain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of vonoprazan and any future product candidates. Although we plan to maintain such insurance, any claim that may be brought against us

could result in a court judgment or settlement in an amount that is not covered, in whole or in part, by our insurance or that is in excess of the limits of our insurance coverage. Our insurance policies will also have various exclusions, and we may be subject to a product liability claim for which we have no coverage. We may have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts.

***We and others, including any of our potential future collaborators, will be required to report to regulatory authorities if any of our approved products cause or contribute to adverse medical events, and any failure to do so would result in sanctions that would materially harm our business.***

If we or any of our potential future collaborators are successful in commercializing vonoprazan or any future product candidates, the FDA and foreign regulatory authorities would require that we and Takeda (with respect to vonoprazan) and any of our current or potential future collaborators, report certain information about adverse medical events if those products may have caused or contributed to those adverse events. The timing of our obligation to report would be triggered by the date we become aware of the adverse event as well as the nature of the event. We, Takeda and any of our potential future collaborators or CROs may fail to report adverse events within the prescribed timeframe. If we, Takeda or any of our potential future collaborators or CROs fail to comply with such reporting obligations, the FDA or a foreign regulatory authority could take action, including criminal prosecution, the imposition of civil monetary penalties, seizure of our products or delay in approval or clearance of future products.

***Our internal computer systems, or those of any of our CROs, manufacturers, other contractors or consultants or potential future collaborators, may fail or suffer security breaches, which could result in a material disruption of our product development programs.***

The United States federal and various state and foreign governments have adopted or proposed requirements regarding the collection, distribution, use, security, and storage of personally identifiable information and other data relating to individuals, and federal and state consumer protection laws are being applied to enforce regulations related to the online collection, use, and dissemination of data. Despite the implementation of security measures, our internal computer systems and those of our current and any future CROs and other contractors, consultants and collaborators are vulnerable to damage from computer viruses, cybersecurity threats, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. If such an event were to occur and cause interruptions in our operations or result in the unauthorized disclosure of or access to personally identifiable information or individually identifiable health information (violating certain privacy laws such as GDPR), it could result in a material disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other similar disruptions. Some of the federal, state and foreign government requirements include obligations of companies to notify individuals of security breaches involving particular personally identifiable information, which could result from breaches experienced by us or by our vendors, contractors, or organizations with which we have formed strategic relationships. Even though we may have contractual protections with such vendors, contractors, or other organizations, notifications and follow-up actions related to a security breach could impact our reputation, cause us to incur significant costs, including legal expenses, harm customer confidence, hurt our expansion into new markets, cause us to incur remediation costs, or cause us to lose existing customers. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. We also rely on third parties to manufacture vonoprazan and any future product candidates, and similar events relating to their computer systems could also have a material adverse effect on our business. To the extent that any disruption or security breach were to

result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, the further development and commercialization of vonoprazan and any future product candidates could be delayed, and we could be subject to significant fines, penalties or liabilities for any noncompliance to certain privacy and security laws.

***Business disruptions could seriously harm our future revenue and financial condition and increase our costs and expenses.***

Our operations could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics and other natural or manmade disasters or business interruptions, for which we are predominantly self-insured. We rely on third-party manufacturers to produce vonoprazan and any future product candidates. Our ability to obtain clinical supplies of vonoprazan and any future product candidates could be disrupted if the operations of these suppliers were affected by a man-made or natural disaster or other business interruption. In addition, our corporate headquarters is located in Menlo Park, California near major earthquake faults and fire zones, and the ultimate impact on us of being located near major earthquake faults and fire zones and being consolidated in a certain geographical area is unknown. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses.

***Our employees and independent contractors, including principal investigators, CROs, consultants and vendors, may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.***

We are exposed to the risk that our employees and independent contractors, including principal investigators, CROs, consultants and vendors may engage in misconduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or other unauthorized activities that violate: (i) the laws and regulations of the FDA and other similar regulatory bodies, including those laws that require the reporting of true, complete and accurate information to such regulatory bodies, (ii) manufacturing standards, including cGMP requirements, or (iii) federal and state healthcare, security, fraud and abuse laws, data privacy and security laws, and other similar non-U.S. laws that require the true, complete and accurate reporting of financial information or data. Activities subject to these laws also involve the improper use or misrepresentation of information obtained in the course of clinical trials, the creation of fraudulent data in our preclinical studies or clinical trials, or illegal misappropriation of product, which could result in regulatory sanctions and cause serious harm to our reputation. It is not always possible to identify and deter misconduct by employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. In addition, we are subject to the risk that a person or government could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and financial results, including, without limitation, the imposition of significant civil, criminal and administrative penalties, damages, monetary fines, disgorgement, possible exclusion from participation in Medicare, Medicaid and other U.S. federal healthcare programs or healthcare programs in other jurisdictions, integrity oversight and reporting obligations to resolve allegations of non-compliance, imprisonment, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

***We are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws and anti-money laundering laws and regulations. Compliance with these legal standards could impair our ability to compete in domestic and international markets. We could face criminal liability and other serious consequences for violations, which could harm our business.***

We are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls, and anti-corruption and anti-money laundering laws and regulations, including the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, clinical research organizations, contractors and other collaborators and partners from authorizing, promising, offering, providing, soliciting or receiving, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We may engage third parties for clinical trials outside of the United States, to sell our products abroad once we enter a commercialization phase, and/or to obtain necessary permits, licenses, patent registrations and other regulatory approvals. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, clinical research organizations, contractors and other collaborators and partners, even if we do not explicitly authorize or have actual knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm and other consequences.

***We may engage in strategic transactions that could impact our liquidity, increase our expenses and present significant distractions to our management.***

From time to time, we may consider strategic transactions, such as acquisitions of companies, asset purchases and out-licensing or in-licensing of intellectual property, products or technologies, similar to our approach in in-licensing and acquiring our current product candidates. Any future transactions could increase our near and long-term expenditures, result in potentially dilutive issuances of our equity securities, including our common stock, or the incurrence of debt, contingent liabilities, amortization expenses or acquired in-process research and development expenses, any of which could affect our financial condition, liquidity and results of operations. Additional potential transactions that we may consider in the future include a variety of business arrangements, including spin-offs, strategic partnerships, joint ventures, restructurings, divestitures, business combinations and investments. Future acquisitions may also require us to obtain additional financing, which may not be available on favorable terms or at all. These transactions may never be successful and may require significant time and attention of management. In addition, the integration of any business that we may acquire in the future may disrupt our existing business and may be a complex, risky and costly endeavor for which we may never realize the full benefits of the acquisition. Accordingly, although we may not undertake or successfully complete any additional transactions of the nature described above, any additional transactions that we do complete could have a material adverse effect on our business, results of operations, financial condition and prospects.

## Risks Related to Our Intellectual Property

### ***Our success depends on our ability to protect our intellectual property and our proprietary technologies.***

Our commercial success depends in part on our ability to obtain and maintain patent protection and trade secret protection for vonoprazan and any future product candidates, proprietary technologies and their uses as well as our ability to operate without infringing upon the proprietary rights of others. If we are unable to protect our intellectual property rights or if our intellectual property rights are inadequate for our technology or vonoprazan or any future product candidates, our competitive position could be harmed. We generally seek to protect our proprietary position by filing patent applications in the United States and abroad related to vonoprazan or any future product candidates, proprietary technologies and their uses that are important to our business. We do not currently own any issued patents or pending patent applications. We also seek to protect our proprietary position by acquiring or in-licensing relevant issued patents or pending patent applications from third parties. We have in-licensed from Takeda a number of United States, European, and Canadian patents and patent applications relating to the compound vonoprazan as well as the use and manufacture of vonoprazan products.

Pending patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless, and until, patents issue from such applications, and then only to the extent the issued claims cover the technology. There can be no assurance that our future patent applications or the patent applications of our current and future licensors will result in patents being issued or that issued patents will afford sufficient protection against competitors with similar technology, nor can there be any assurance that the patents if issued will not be infringed, designed around or invalidated by third parties.

Even issued patents may later be found invalid or unenforceable or may be modified or revoked in proceedings instituted by third parties before various patent offices or in courts. The degree of future protection for our proprietary rights is uncertain. Only limited protection may be available and may not adequately protect our rights or permit us to gain or keep any competitive advantage. These uncertainties and/or limitations in our ability to properly protect the intellectual property rights relating to vonoprazan and any future product candidates could have a material adverse effect on our financial condition and results of operations.

We cannot be certain that the claims in our licensor's U.S. pending patent applications, corresponding international patent applications and patent applications in certain foreign countries will be considered patentable by the United States Patent and Trademark Office, or USPTO, courts in the United States or by the patent offices and courts in foreign countries, nor can we be certain that the claims in our licensor's issued patents will not be found invalid or unenforceable if challenged.

The patent application process is subject to numerous risks and uncertainties, and there can be no assurance that we or any of our potential future collaborators will be successful in protecting vonoprazan and any future product candidates by obtaining and defending patents. These risks and uncertainties include the following:

- the USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions during the patent process, the noncompliance with which can result in abandonment or lapse of a patent or patent application, and partial or complete loss of patent rights in the relevant jurisdiction;
- patent applications may not result in any patents being issued;
- patents may be challenged, invalidated, modified, revoked, circumvented, found to be unenforceable or otherwise may not provide any competitive advantage;

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- our competitors, many of whom have substantially greater resources than we do and many of whom have made significant investments in competing technologies, may seek or may have already obtained patents that will limit, interfere with or block our ability to make, use and sell vonoprazan and any future product candidates;
- there may be significant pressure on the U.S. government and international governmental bodies to limit the scope of patent protection both inside and outside the United States for disease treatments that prove successful, as a matter of public policy regarding worldwide health concerns; and
- countries other than the United States may have patent laws less favorable to patentees than those upheld by U.S. courts, allowing foreign competitors a better opportunity to create, develop and market competing products.

The patent prosecution process is also expensive and time consuming, and we and our licensor may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner or in all jurisdictions where protection may be commercially advantageous. It is also possible that we and our licensor will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, in some circumstances such as under the Takeda License, we do not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, directed to technology that we license from third parties. We may also require the cooperation of our licensors in order to enforce the licensed patent rights, and such cooperation may not be provided. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. We cannot be certain that patent prosecution and maintenance activities by our licensors have been or will be conducted in compliance with applicable laws and regulations, which may affect the validity and enforceability of such patents or any patents that may issue from such applications. If they fail to do so, this could cause us to lose rights in any applicable intellectual property that we in-license, and as a result our ability to develop and commercialize products or product candidates may be adversely affected and we may be unable to prevent competitors from making, using and selling competing products.

In addition, although we enter into non-disclosure and confidentiality agreements with parties who have access to patentable aspects of our research and development output, such as our employees, outside scientific collaborators, CROs, third-party manufacturers, consultants, advisors and other third parties, any of these parties may breach such agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection.

***If we fail to comply with our obligations in the agreements under which we license intellectual property rights from third parties, including our rights in vonoprazan licensed from Takeda, or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.***

We are a party to the Takeda License under which we are granted rights to intellectual property that are important to our business and we may enter into additional license agreements in the future with other third parties. The Takeda License imposes, and we expect that any future license agreements where we in-license intellectual property, will impose on us, various development, regulatory and/or commercial diligence obligations, payment of milestones and/or royalties and other obligations. If we fail to comply with our obligations under these agreements, or we are subject to bankruptcy-related proceedings, the licensor may have the right to terminate the license, in which event we would not be able to market products covered by the license. Additionally, if a future license agreement includes a sublicense from a third party who is not the original licensor of the intellectual property at issue, then we must rely on our direct licensor to comply with its obligations under the

primary license agreements under which such licensor obtained rights in the applicable intellectual property, where we may have no relationship with the original licensor of such rights. If such a licensor fails to comply with its obligations under its upstream license agreement, the original third-party licensor may have the right to terminate the original license, which may terminate our sublicense. If this were to occur, we would no longer have rights to the applicable intellectual property unless we are able to secure our own direct license with the owner of the relevant rights, which we may not be able to do on reasonable terms, or at all, which may impact our ability to continue to develop and commercialize vonoprazan and any future product candidates incorporating the relevant intellectual property.

We may need to obtain further licenses from third parties to advance our research or allow commercialization of vonoprazan and any future product candidates, and we cannot provide any assurances that third-party patents do not exist which might be enforced against vonoprazan and any future product candidates in the absence of such a license. We may fail to obtain any of these licenses on commercially reasonable terms, if at all. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In that event, we may be required to expend significant time and resources to develop or license replacement technology. If we are unable to do so, we may be unable to develop or commercialize the affected product candidates, which could materially harm our business and the third parties owning such intellectual property rights could seek either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation.

Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues. Disputes may arise between us and our licensors regarding intellectual property subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- our right to sublicense patents and other rights to third parties;
- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of vonoprazan and any future product candidates, and what activities satisfy those diligence obligations;
- our right to transfer or assign the license; and
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners.

If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may not be able to successfully develop and commercialize the affected product candidates, which would have a material adverse effect on our business.

In addition, certain of our agreements may limit or delay our ability to consummate certain transactions, may impact the value of those transactions, or may limit our ability to pursue certain activities. For example, if we choose to sublicense or assign to any third parties our rights under our existing license agreement with Takeda with respect to any licensed product, we may be required to wait for a certain period or until the occurrence of certain funding or development milestones.

***If the scope of any patent protection we obtain is not sufficiently broad, or if we lose any of our patent protection, our ability to prevent our competitors from commercializing similar or identical product candidates would be adversely affected.***

The patent position of biopharmaceutical companies generally is highly uncertain, involves complex legal and factual questions, and has been the subject of much litigation in recent years. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Our in-licensed pending and future patent applications may not result in patents being issued which protect vonoprazan or any future product candidates or which effectively prevent others from commercializing competitive product candidates.

Moreover, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance. Even if patent applications we own in the future or license currently issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us, or otherwise provide us with any competitive advantage. Any future patents that we own or license, now or in the future, may be challenged or circumvented by third parties or may be narrowed or invalidated as a result of challenges by third parties. Consequently, we do not know whether vonoprazan or any future product candidates will be protectable or remain protected by valid and enforceable patents. Our competitors or other third parties may be able to circumvent our future patents or the patents of our current and future licensors by developing similar or alternative technologies or products in a non-infringing manner which could materially adversely affect our business, financial condition, results of operations and prospects.

The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our future patents or the patents of our current and future licensors may not cover vonoprazan or any future product candidates or may be challenged in the courts or patent offices in the United States and abroad. We may be subject to a third party pre-issuance submission of prior art to the USPTO, or become involved in opposition, derivation, revocation, reexamination, post-grant review, or PGR, and inter partes review, or IPR, or other similar proceedings in the USPTO or foreign patent offices challenging our patent rights. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we or our predecessors and the patent examiner were unaware during prosecution. There is no assurance that all potentially relevant prior art relating to our in-licensed patents and patent applications has been found. There is also no assurance that there is not prior art of which we, our predecessors or licensors are aware, but which we do not believe affects the validity or enforceability of a claim in our in-licensed patents and patent applications, which may, nonetheless, ultimately be found to affect the validity or enforceability of a claim. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate or render unenforceable, our patent rights, allow third parties to commercialize vonoprazan or any future product candidates and compete directly with us, without payment to us. It is possible that defects of form in the preparation or filing of our or our current and future licensors' patents or patent applications may exist, or may arise in the future, for example with respect to proper priority claims, inventorship, claim scope, or requests for patent term adjustments. If there are material defects in the form, preparation, prosecution, or enforcement of our future patents or future patent applications or our current and future licensors' patents or patent applications, such patents may be invalid and/or unenforceable, and such applications may never result in valid, enforceable patents.

Any loss of patent rights, loss of exclusivity or in patent claims being narrowed, invalidated or held unenforceable could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of vonoprazan or any future product candidates, which could materially and adversely impact our business. Such proceedings also



may result in substantial cost and require significant time from our scientists and management, even if the eventual outcome is favorable to us. In addition, if the breadth or strength of protection provided by our future patents and future patent applications or the patents and patent applications of our current and future licensors is threatened, regardless of the outcome, it could dissuade companies from collaborating with us to license, develop or commercialize vonoprazan or any future product candidates.

***The patent protection and patent prosecution for vonoprazan or any future product candidates may be dependent on third parties.***

We may rely on third parties to file and prosecute patent applications and maintain patents and otherwise protect the licensed intellectual property under certain current and future license agreements, such as the Takeda License. Under such arrangements, we may not have primary control over these activities for certain of licensed patents or patent applications and other intellectual property rights. We cannot be certain that such activities by third parties have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents or other intellectual property rights. In addition, our current and future licensors may not be fully cooperative or disagree with us as to the prosecution, maintenance or enforcement of any patent rights, which could compromise such patent rights. We may in the future enter into license agreements where the licensors may have the right to control enforcement of our licensed patents or defense of any claims asserting the invalidity of these patents and even if we are permitted to pursue such enforcement or defense, we will require the cooperation of our licensors. We cannot be certain that our licensors will allocate sufficient resources or prioritize their or our enforcement of such patents or defense of such claims to protect our interests in the licensed patents. Even if we are not a party to these legal actions, an adverse outcome could harm our business because it might prevent us from continuing to license intellectual property that we may need to operate our business. If any of our licensors or any of our future licensors or future collaborators fail to appropriately prosecute and maintain patent protection for patents covering vonoprazan or any future product candidates, our ability to develop and commercialize those product candidates may be adversely affected and we may not be able to prevent competitors from making, using and selling competing products.

In addition, even where we have the right to control prosecution of patent applications or enforcement of patents we have acquired or licensed from third parties, we may still be adversely affected or prejudiced by actions or inactions of our predecessors or licensors and their counsel that took place prior to us assuming control over such activities.

Third parties may retain certain rights to the technology that they license to us, including the right to use the underlying technology for noncommercial academic and research use, to publish general scientific findings from research related to the technology, and to make customary scientific and scholarly disclosures of information relating to the technology. For example, under the Takeda License, Takeda retained the rights to the inventions in all countries other than the United States, Europe, and Canada. Takeda also retained the right to development certain drug products that contain vonoprazan where vonoprazan is not the only active pharmaceutical ingredient. It is difficult to monitor whether our predecessors or licensors limit their use of the technology to these uses, and we could incur substantial expenses to enforce our rights to our licensed technology in the event of misuse.

If we are limited in our ability to utilize acquired or licensed technologies, or if we lose our rights to critical in-licensed technology, we may be unable to successfully develop, out-license, market and sell our products, which could prevent or delay new product introductions. Our business strategy depends on the successful development of licensed and acquired technologies into commercial products. Therefore, any limitations on our ability to utilize these technologies may impair our ability to develop, out-license or market and sell our product candidate.

***Intellectual property rights do not necessarily address all potential threats to our competitive advantage.***

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to develop products that are similar to vonoprazan or any future product candidates but that are not covered by the claims of the patents that we own in the future or license;
- we or our current and future licensors or predecessors might not have been the first to make the inventions covered by the issued patents or patent applications that we own in the future or license;
- we or our current and future licensors or predecessors might not have been the first to file patent applications covering certain of the claimed inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- it is possible that the pending patent applications we own or license will not lead to issued patents;
- issued patents that we own in the future or license may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable; and
- the patents of others may have an adverse effect on our business.

Should any of these events occur, it could significantly harm our business, results of operations and prospects.

***Our commercial success depends significantly on our ability to operate without infringing the patents and other proprietary rights of third parties. Claims by third parties that we infringe their proprietary rights may result in liability for damages or prevent or delay our developmental and commercialization efforts.***

Our commercial success depends in part on avoiding infringement of the patents and proprietary rights of third parties. However, our research, development and commercialization activities may be subject to claims that we infringe or otherwise violate patents or other intellectual property rights owned or controlled by third parties. Other entities may have or obtain patents or proprietary rights that could limit our ability to make, use, sell, offer for sale or import vonoprazan and any future product candidates and products that may be approved in the future, or impair our competitive position. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biopharmaceutical industry, including patent infringement lawsuits, oppositions, reexaminations, IPR proceedings and PGR proceedings before the USPTO and/or foreign patent offices. Numerous third-party U.S. and foreign issued patents and pending patent applications exist in the fields in which we are developing product candidates. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of vonoprazan and any future product candidates.

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As the biopharmaceutical industry expands and more patents are issued, the risk increases that vonoprazan and any future product candidates may be subject to claims of infringement of the patent rights of third parties. Because patent applications are maintained as confidential for a certain period of time, until the relevant application is published we may be unaware of third-party patents that may be infringed by commercialization of vonoprazan and any future product candidates, and we cannot be certain that we were the first to file a patent application related to a product candidate or technology. Moreover, because patent applications can take many years to issue, there may be currently-pending patent applications that may later result in issued patents that vonoprazan and any future product candidates may infringe. In addition, identification of third-party patent rights that may be relevant to our technology is difficult because patent searching is imperfect due to differences in terminology among patents, incomplete databases and the difficulty in assessing the meaning of patent claims. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. Any claims of patent infringement asserted by third parties would be time consuming and could:

- result in costly litigation that may cause negative publicity;
- divert the time and attention of our technical personnel and management;
- cause development delays;
- prevent us from commercializing vonoprazan and any future product candidates until the asserted patent expires or is held finally invalid or not infringed in a court of law;
- require us to develop non-infringing technology, which may not be possible on a cost-effective basis;
- subject us to significant liability to third parties; or
- require us to enter into royalty or licensing agreements, which may not be available on commercially reasonable terms, or at all, or which might be non-exclusive, which could result in our competitors gaining access to the same technology.

Although no third party has asserted a claim of patent infringement against us as of the date of this prospectus, others may hold proprietary rights that could prevent vonoprazan and any future product candidates from being marketed.

Any patent-related legal action against us claiming damages and seeking to enjoin activities relating to vonoprazan and any future product candidates or processes could subject us to potential liability for damages, including treble damages if we were determined to willfully infringe, and require us to obtain a license to manufacture or develop vonoprazan and any future product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. We cannot predict whether we would prevail in any such actions or that any license required under any of these patents would be made available on commercially acceptable terms, if at all. Moreover, even if we or our future strategic partners were able to obtain a license, the rights may be nonexclusive, which could result in our competitors gaining access to the same intellectual property. In addition, we cannot be certain that we could redesign vonoprazan and any future product candidates or processes to avoid infringement, if necessary. Accordingly, an adverse determination in a judicial or administrative proceeding, or the failure to obtain necessary licenses, could prevent us from developing and commercializing vonoprazan and any future product candidates, which could harm our business, financial condition and operating results.

Parties making claims against us may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. Furthermore,

because of the substantial amount of discovery required in connection with intellectual property litigation or administrative proceedings, there is a risk that some of our confidential information could be compromised by disclosure. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise additional funds or otherwise have a material adverse effect on our business, results of operations, financial condition and prospects.

***We may not be successful in obtaining or maintaining necessary rights to vonoprazan and any future product candidates through acquisitions and in-licenses.***

Because our development programs may in the future require the use of proprietary rights held by other third parties, the growth of our business may depend in part on our ability to acquire, in-license, or use these third-party proprietary rights. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify as necessary for vonoprazan and any future product candidates. The licensing and acquisition of third-party intellectual property rights is a competitive area, and a number of more established companies are also pursuing strategies to license or acquire third-party intellectual property rights that we may consider attractive. These established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment. If we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of that program and our business and financial condition could suffer.

***We may be involved in lawsuits to protect or enforce our future patents or the patents of our current and future licensors, which could be expensive, time consuming and unsuccessful. Further, our future issued patents or the patents of our current and future licensors could be found invalid or unenforceable if challenged in court.***

Competitors may infringe our intellectual property rights or those of our current and future licensors. To prevent infringement or unauthorized use, we and/or any such licensors may be required to file infringement claims, which can be expensive and time consuming. In addition, in a patent infringement proceeding, a court may decide that a patent we own or license is not valid, is unenforceable and/or is not infringed. If we or any of our current and future licensors were to initiate legal proceedings against a third party to enforce a patent directed at vonoprazan and any future product candidates, the defendant could counterclaim that our patent or the patent of our current or future licensor is invalid and/or unenforceable in whole or in part. In patent litigation, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge include an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, written description, non-enablement, or obviousness-type double patenting. Grounds for an unenforceability assertion could include an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution.

If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on such product candidate. In addition, if the breadth or strength of protection provided by our future patents and future patent applications or those of our current and future licensors is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates. Such a loss of patent protection would have a material adverse impact on our business.

Even if resolved in our favor, litigation or other legal proceedings relating to our intellectual property rights may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise our ability to compete in the marketplace.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or other legal proceedings relating to our intellectual property rights, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation or other proceedings.

***Intellectual property litigation may lead to unfavorable publicity that harms our reputation and causes the market price of our common shares to decline.***

During the course of any intellectual property litigation, there could be public announcements of the initiation of the litigation as well as results of hearings, rulings on motions, and other interim proceedings in the litigation. If securities analysts or investors regard these announcements as negative, the perceived value of our existing products, programs or intellectual property could be diminished. Accordingly, the market price of shares of our common stock may decline. Such announcements could also harm our reputation or the market for our future products, which could have a material adverse effect on our business.

***Derivation or interference proceedings may be necessary to determine priority of inventions, and an unfavorable outcome may require us to cease using the related technology or to attempt to license rights from the prevailing party.***

Derivation or interference proceedings provoked by third parties or brought by us or declared by the USPTO or similar proceedings in foreign patent offices may be necessary to determine the priority of inventions with respect to our future patents or future patent applications or those of our current and future licensors. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Our defense of such proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. In addition, the uncertainties associated with such proceedings could have a material adverse effect on our ability to raise the funds necessary to continue our clinical trials, continue our research programs, license necessary technology from third parties or enter into development or manufacturing partnerships that would help us bring vonoprazan and any future product candidates to market.

***Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our future patent applications or those of our current and future licensors and the enforcement or defense of our future issued patents or those of our current and future licensors.***

On September 16, 2011, the Leahy-Smith America Invents Act, or Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications will be prosecuted and may also affect patent litigation. In particular, under the Leahy-Smith Act, the United States transitioned in March 2013 to a

“first inventor to file” system in which, assuming that other requirements of patentability are met, the first inventor to file a patent application will be entitled to the patent regardless of whether a third party was first to invent the claimed invention. A third party that files a patent application in the USPTO after March 2013 but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by such third party. This will require us to be cognizant going forward of the time from invention to filing of a patent application. Furthermore, our ability to obtain and maintain valid and enforceable patents depends on whether the differences between our technology and the prior art allow our technology to be patentable over the prior art. Since patent applications in the United States and most other countries are confidential for a period of time after filing or until issuance, we may not be certain that we or our current and future licensors are the first to either (1) file any patent application related to vonoprazan and any future product candidates or (2) invent any of the inventions claimed in the patents or patent applications.

The Leahy-Smith Act also includes a number of significant changes that affect the way patent applications will be prosecuted and also may affect patent litigation. These include allowing third-party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent by USPTO administered post-grant proceedings, including PGR, IPR, and derivation proceedings. An adverse determination in any such submission or proceeding could reduce the scope or enforceability of, or invalidate, our patent rights, which could adversely affect our competitive position.

Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action. Thus, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our future patent applications or those of our current and future licensors and the enforcement or defense of our future issued patents or those of our current and future licensors, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

***Changes in U.S. patent law, or laws in other countries, could diminish the value of patents in general, thereby impairing our ability to protect vonoprazan and any future product candidates.***

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involve a high degree of technological and legal complexity. Therefore, obtaining and enforcing biopharmaceutical patents is costly, time consuming and inherently uncertain. Changes in either the patent laws or in the interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property and may increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. We cannot predict the breadth of claims that may be allowed or enforced in our future patents or in third-party patents. In addition, Congress or other foreign legislative bodies may pass patent reform legislation that is unfavorable to us. For example, a new bill (Terminating the Extension of Rights Misappropriated Act H.R. 3199) percolating through the United States Congress aims to reduce the term of certain drug patents in order to ease generic entry and increase competition. Evolving judicial interpretation of patent law could also adversely affect our business. For example, the U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future,

this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the U.S. federal courts, the USPTO, or similar authorities in foreign jurisdictions, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce the existing licensed patents and the patents we might obtain or license in the future.

***We may be subject to claims challenging the inventorship or ownership of our future patents, the patents of our current and future licensors, or other intellectual property.***

We may also be subject to claims that former employees or other third parties have an ownership interest in our future patents, the patents of our current and future licensors or other intellectual property. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and distraction to management and other employees.

***Patent terms may be inadequate to protect our competitive position on vonoprazan and any future product candidates for an adequate amount of time.***

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering vonoprazan and any future product candidates are obtained, once the patent life has expired, we may be open to competition from competitive products. Given the amount of time required for the development, testing and regulatory review of product candidates, patents protecting vonoprazan and any future product candidates might expire before or shortly after such candidates are commercialized. As a result, our patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

***If we do not obtain patent term extension for vonoprazan and any future product candidates, our business may be materially harmed.***

Depending upon the timing, duration and specifics of FDA marketing approval of vonoprazan and any future product candidates, one or more of our U.S. patents or those of our current and future licensors, may be eligible for limited patent term restoration under the Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. A maximum of one patent may be extended per FDA approved product as compensation for the patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only those claims covering such approved drug product, a method for using it or a method for manufacturing it may be extended. Patent term extension may also be available in certain foreign countries upon regulatory approval of vonoprazan and any future product candidates. However, we may not be granted an extension because of, for example, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or restoration or the term of any such extension is less than we request, our competitors may obtain approval of competing products following our patent expiration, and our revenue could be reduced, possibly materially. Further, if this occurs, our competitors may take advantage of our investment in development and trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case.

***We may not be able to protect our intellectual property rights throughout our licensed territories.***

Although we have issued patents and pending patent applications in the United States and certain other countries in which we intend to commercialize our products, filing, prosecuting and defending patents in all relevant countries throughout the world could be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection but enforcement is not as strong as that in the United States. These products may compete with voprazan or any future product candidates, and our patents, the patents of our current and future licensors or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of many foreign countries do not favor the enforcement of patents and other intellectual property protection, which could make it difficult for us to stop the infringement of our intellectual property rights or marketing of competing products in violation of our proprietary rights. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our future patents or the patents of our current and future licensors at risk of being invalidated or interpreted narrowly and our future patent applications or the patent applications of our current and future licensors at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we are forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations and prospects may be adversely affected.

***Obtaining and maintaining our patent protection depends on compliance with various procedural, documentary, fee payment and other requirements imposed by regulations and governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.***

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to the USPTO and various foreign patent offices at various points over the lifetime of our future patents and/or future applications and those of our current and future licensors. We have systems in place to remind us to pay these fees, and we rely on third parties to pay these fees when due. Additionally, the USPTO and various foreign patent offices require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help



us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with rules applicable to the particular jurisdiction. However, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. If such an event were to occur, it could have a material adverse effect on our business.

***If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.***

In addition, we rely on the protection of our trade secrets, including unpatented know-how, technology and other proprietary information to maintain our competitive position. Although we have taken steps to protect our trade secrets and unpatented know-how, including entering into confidentiality agreements with third parties, and confidential information and inventions agreements with employees, consultants and advisors, we cannot provide any assurances that all such agreements have been duly executed, and any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets.

Moreover, third parties may still obtain this information or may come upon this or similar information independently, and we would have no right to prevent them from using that technology or information to compete with us. If any of these events occurs or if we otherwise lose protection for our trade secrets, the value of this information may be greatly reduced and our competitive position would be harmed. If we cannot otherwise maintain the confidentiality of our proprietary technology and other confidential information, then our ability to protect our trade secret information may be jeopardized.

***We may be subject to claims that we have wrongfully hired an employee from a competitor or that we or our employees have wrongfully used or disclosed alleged confidential information or trade secrets of their former employers.***

As is common in the biopharmaceutical industry, in addition to our employees, we engage the services of consultants to assist us in the development of vonoprazan and any future product candidates. Many of these consultants, and many of our employees, were previously employed at, or may have previously provided or may be currently providing consulting services to, other biopharmaceutical companies including our competitors or potential competitors. We may become subject to claims that we, our employees or a consultant inadvertently or otherwise used or disclosed trade secrets or other information proprietary to their former employers or their former or current clients. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, which could adversely affect our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to our management team and other employees.

***If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.***

We intend to use registered or unregistered trademarks or trade names to brand and market ourselves and our products. Our trademarks or trade names may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names, which we need to build name recognition among potential partners or customers in our markets of interest. At times, competitors may adopt

trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement claims brought by owners of other trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected. We may license our trademarks and trade names to third parties, such as distributors. Though these license agreements may provide guidelines for how our trademarks and trade names may be used, a breach of these agreements or misuse of our trademarks and tradenames by our licensees may jeopardize our rights in or diminish the goodwill associated with our trademarks and trade names. Our efforts to enforce or protect our proprietary rights related to trademarks, trade names, trade secrets, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely affect our financial condition or results of operations.

***Any collaboration arrangements that we have or may enter into in the future may not be successful, which could adversely affect our ability to develop and commercialize our products.***

The success of our collaboration arrangements will depend heavily on the efforts and activities of our collaborators and partners. Under the Takeda License, for example, Takeda has certain obligations with respect to assisting with the transition of information and materials to us as well as providing clinical and commercial supply of the vonoprazan product. Collaborations and partnerships are subject to numerous risks, which may include that:

- collaborators have significant discretion in determining the efforts and resources that they will apply to collaborations;
- collaborators may not pursue development and commercialization of our products or may elect not to continue or renew development or commercialization programs based on trial or test results, changes in their strategic focus due to the acquisition of competitive products, availability of funding or other external factors, such as a business combination that diverts resources or creates competing priorities;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products or product candidates;
- a collaborator with marketing, manufacturing and distribution rights to one or more products may not commit sufficient resources to or otherwise not perform satisfactorily in carrying out these activities;
- we could grant exclusive rights to our collaborators that would prevent us from collaborating with others;
- collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- disputes may arise between us and a collaborator that causes the delay or termination of the research, development or commercialization of our current or future products or that results in costly litigation or arbitration that diverts management attention and resources;
- collaborations may be terminated, and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable current or future products;

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- collaborators may own or co-own intellectual property covering our products that results from our collaborating with them, and in such cases, we would not have the exclusive right to develop or commercialize such intellectual property; and
- a collaborator's sales and marketing activities or other operations may not be in compliance with applicable laws resulting in civil or criminal proceedings.

***Intellectual property discovered through government funded programs may be subject to federal regulations such as "march-in" rights, certain reporting requirements and a preference for U.S.-based companies. Compliance with such regulations may limit our exclusive rights, and limit our ability to contract with non-U.S. manufacturers.***

We may acquire or license in the future intellectual property rights that have been generated through the use of U.S. government funding or grant. Pursuant to the Bayh-Dole Act of 1980, the U.S. government has certain rights in inventions developed with government funding. These U.S. government rights include a non-exclusive, non-transferable, irrevocable worldwide license to use inventions for any governmental purpose. In addition, the U.S. government has the right, under certain limited circumstances, to require us to grant exclusive, partially exclusive, or non-exclusive licenses to any of these inventions to a third party if it determines that: (i) adequate steps have not been taken to commercialize the invention; (ii) government action is necessary to meet public health or safety needs; or (iii) government action is necessary to meet requirements for public use under federal regulations (also referred to as "march-in rights"). The U.S. government also has the right to take title to these inventions if the grant recipient fails to disclose the invention to the government or fails to file an application to register the intellectual property within specified time limits. Intellectual property generated under a government funded program is also subject to certain reporting requirements, compliance with which may require us to expend substantial resources. In addition, the U.S. government requires that any products embodying any of these inventions or produced through the use of any of these inventions be manufactured substantially in the United States. This preference for U.S. industry may be waived by the federal agency that provided the funding if the owner or assignee of the intellectual property can show that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible. This preference for U.S. industry may limit our ability to contract with non-U.S. product manufacturers for products covered by such intellectual property.

### **Risks Related to Our Common Stock and This Offering**

***An active, liquid and orderly market for our common stock may not develop, and you may not be able to resell your common stock at or above the public offering price.***

Prior to this offering, there has been no public market for our common stock. Although we expect to list our common stock on Nasdaq, an active trading market for our common stock may never develop or be sustained following this offering. We and the representatives of the underwriters will determine the initial public offering price of our common stock through negotiation. This price will not necessarily reflect the price at which investors in the market will be willing to buy and sell our shares following this offering. In addition, an active trading market may not develop following the consummation of this offering or, if it is developed, may not be sustained. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. An inactive market may also impair our ability to raise capital by selling shares and may impair our ability to acquire other businesses or technologies using our shares as consideration, which, in turn, could materially adversely affect our business.

***The trading price of the shares of our common stock could be highly volatile, and purchasers of our common stock could incur substantial losses.***

Our stock price is likely to be volatile. The stock market in general and the market for stock of biopharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, investors may not be able to sell their common stock at or above the initial public offering price. The market price for our common stock may be influenced by those factors discussed in this “Risk Factors” section and many others, including:

- our ability to enroll patients in our planned clinical trials;
- results of our clinical trials and preclinical studies, the results of clinical trials conducted by Takeda and others for vonoprazan, and the results of trials of our competitors or those of other companies in our market sector;
- regulatory approval of vonoprazan and any future product candidates, or limitations to specific label indications or patient populations for its use, or changes or delays in the regulatory review process;
- any termination or loss of rights under the Takeda License;
- regulatory developments in the United States and foreign countries;
- changes in the structure of healthcare payment systems, especially in light of current reforms to the U.S. healthcare system;
- the success or failure of our efforts to acquire, license or develop additional product candidates;
- innovations or new products developed by us or our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- manufacturing, supply or distribution delays or shortages;
- any changes to our relationship with any manufacturers, suppliers, licensors, future collaborators or other strategic partners;
- achievement of expected product sales and profitability;
- variations in our financial results or those of companies that are perceived to be similar to us;
- market conditions in the biopharmaceutical sector and issuance of securities analysts' reports or recommendations;
- trading volume of our common stock;
- an inability to obtain additional funding;
- sales of our stock by insiders and stockholders, including Takeda;
- general economic, industry and market conditions other events or factors, many of which are beyond our control;
- additions or departures of key personnel;
- intellectual property, product liability or other litigation against us;
- changes in our capital structure, such as future issuances of securities and the incurrence of additional debt; and
- changes in accounting standards, policies, guidelines, interpretations or principles.

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In addition, in the past, stockholders have initiated class action lawsuits against biopharmaceutical companies following periods of volatility in the market prices of these companies' stock. Such litigation, if instituted against us, could cause us to incur substantial costs and divert management's attention and resources, which could have a material adverse effect on our business, financial condition and results of operations.

### ***Our failure to meet the continued listing requirements of the Nasdaq could result in a delisting of our common stock.***

If, after listing, we fail to satisfy the continued listing requirements of the Nasdaq, such as the corporate governance requirements or the minimum closing bid price requirement, Nasdaq may take steps to delist our common stock. Such a delisting would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. In the event of a delisting, any action taken by us to restore compliance with listing requirements may not allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the Nasdaq minimum bid price requirement or prevent future non-compliance with Nasdaq's listing requirements.

### ***We may allocate the net proceeds from this offering in ways that you and other stockholders may not approve.***

Our management will have broad discretion in the application of the net proceeds from this offering, including for any of the purposes described in the section titled "Use of Proceeds." Because of the number and variability of factors that will determine our use of the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. Our management might not apply our net proceeds in ways that ultimately increase the value of your investment, and the failure by our management to apply these funds effectively could harm our business. Pending their use, we may invest the net proceeds from this offering in short- and intermediate-term, investment grade interest-bearing instruments. These investments may not yield a favorable return to our stockholders. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected results, which could cause our stock price to decline.

### ***You will suffer immediate and substantial dilution in the net tangible book value of the common stock you purchase.***

The initial public offering price of our common stock is substantially higher than the pro forma as adjusted net tangible book value per share of our outstanding common stock immediately after the completion of this offering. Purchasers of common stock in this offering will experience immediate dilution of approximately \$            per share, assuming an initial public offering price of \$            per share, the midpoint of the price range set forth on the cover page of this prospectus.

### ***After this offering, our executive officers, directors and principal stockholders, if they choose to act together, will continue to have the ability to control or significantly influence all matters submitted to stockholders for approval. Furthermore, many of our current directors were appointed by our principal stockholders.***

Following the completion of this offering, our executive officers, directors and greater than 5% stockholders, in the aggregate, will own approximately    % of our outstanding common stock (assuming no exercise of the underwriters' option to purchase additional shares and no exercise of outstanding warrants or other rights), assuming an initial public offering price of \$            per share, the midpoint of the price range set forth on the cover page of this prospectus. Furthermore, many of our

current directors were appointed by our principal stockholders. As a result, such persons or their appointees to our board of directors, acting together, will have the ability to control or significantly influence all matters submitted to our board of directors or stockholders for approval, including the appointment of our management, the election and removal of directors and approval of any significant transaction, as well as our management and business affairs. This concentration of ownership may have the effect of delaying, deferring or preventing a change in control, impeding a merger, consolidation, takeover or other business combination involving us, or discouraging a potential acquiror from making a tender offer or otherwise attempting to obtain control of our business, even if such a transaction would benefit other stockholders.

***We do not currently intend to pay dividends on our common stock, and, consequently, your ability to achieve a return on your investment will depend on appreciation, if any, in the price of our common stock.***

We have never declared or paid any cash dividend on our common stock. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. In addition, under the terms of the Loan Agreement, we are prohibited from paying any cash dividends without the consent of the lenders. Any return to stockholders will therefore be limited to the appreciation of their stock. Shares of our common stock may not appreciate in value or even maintain the price at which stockholders have purchased their shares.

***Sales of a substantial number of shares of our common stock by our existing stockholders, including Takeda, in the public market could cause our stock price to fall.***

Sales of a substantial number of shares of our common stock in the public market or the perception that these sales might occur could significantly reduce the market price of our common stock and impair our ability to raise adequate capital through the sale of additional equity securities.

Based on shares of common stock outstanding as of June 30, 2019, upon the closing of this offering, we will have outstanding a total of \_\_\_\_\_ shares of common stock after this offering, assuming no exercise of the underwriters' option to purchase additional shares and no exercise of outstanding warrants or other rights. Of these shares, only the \_\_\_\_\_ shares of common stock sold in this offering by us, plus any shares sold upon exercise of the underwriters' option to purchase additional shares, will be freely tradable, without restriction, in the public market immediately following this offering, unless they are purchased by one of our affiliates.

In addition, immediately following the completion of this offering, Takeda will beneficially own \_\_\_\_\_ % of our outstanding shares of common stock, including 3,500,000 shares of common stock issuable pursuant to the Takeda Warrant (or \_\_\_\_\_ % if the underwriters exercise their option to purchase additional shares in full). The sale by Takeda of a substantial number of shares after this offering, or a perception that such sales could occur, could significantly reduce the market price of our common stock.

Our officers, directors and holders of substantially all of our outstanding securities have entered into lock-up agreements with the underwriters pursuant to which they may not, with limited exceptions, for a period of 180 days from the date of this prospectus, offer, sell or otherwise transfer or dispose of any of our securities, without the prior written consent of Goldman Sachs & Co. LLC, Jefferies LLC and Evercore Group L.L.C. The underwriters may permit our officers, directors and other securityholders who are \_\_\_\_\_ subject to the lock-up agreements to sell shares prior to the expiration of the lock-up agreements, subject to limitations. Sales of these shares, or perceptions that they will be sold, could cause the trading price of our common stock to decline. After the lock-up agreements expire, up to an

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additional shares of common stock will be eligible for sale in the public market of which shares are held by directors, executive officers and other affiliates and will be subject to volume limitations under Rule 144 under the Securities Act.

In addition, as of June 30, 2019, up to shares of common stock that are either subject to outstanding warrants or other rights or reserved for future issuance under our employee benefit plans will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, exercise limitations, the lock-up agreements and Rule 144 and Rule 701 under the Securities Act. If these additional shares of common stock are sold, or if it is perceived that they will be sold, in the public market, the trading price of our common stock could decline.

After this offering, the holders of shares of our outstanding common stock, or approximately % of our total outstanding common stock as of June 30, 2019, will be entitled to rights with respect to the registration of their shares under the Securities Act, subject to vesting and the 180-day lock-up agreements described above. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares held by affiliates, as defined in Rule 144 under the Securities Act. Any sales of securities by these stockholders could have a material adverse effect on the trading price of our common stock.

***We are an emerging growth company and a smaller reporting company, and the reduced disclosure requirements applicable to emerging growth companies and smaller reporting company may make our common stock less attractive to investors.***

We are an emerging growth company, as defined in the JOBS Act, and may remain an emerging growth company until the last day of the fiscal year following the fifth anniversary of the completion of this offering. However, if certain events occur prior to the end of such five-year period, including if we become a “large accelerated filer” as defined in Rule 12b-2 under the Exchange Act, our annual gross revenues exceed \$1.07 billion or we issue more than \$1.0 billion of non-convertible debt in any three-year period, we will cease to be an emerging growth company prior to the end of such five-year period. For so long as we remain an emerging growth company, we are permitted and intend to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include:

- being permitted to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced “Management’s Discussion and Analysis of Financial Condition and Results of Operations” disclosure;
- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements, unless the SEC, determines the new rules are necessary for protecting the public;
- reduced disclosure obligations regarding executive compensation; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved.

We have taken advantage of reduced reporting burdens in this prospectus. In particular, we have not included all of the executive compensation related information that would be required if we were not an emerging growth company. Investors may find our common stock less attractive if we rely on

these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be reduced or more volatile. In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of these accounting standards until they would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this exemption and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

We are also a smaller reporting company as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as our voting and non-voting common stock held by non-affiliates is less than \$250.0 million measured on the last business day of our second fiscal quarter, or our annual revenue is less than \$100.0 million during the most recently completed fiscal year and our voting and non-voting common stock held by non-affiliates is less than \$700.0 million measured on the last business day of our second fiscal quarter.

***We will incur significant increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives.***

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. We will be subject to the reporting requirements of the Exchange Act, which will require, among other things, that we file with the SEC, annual, quarterly and current reports with respect to our business and financial condition. In addition, the Sarbanes-Oxley Act, as well as rules subsequently adopted by the SEC and Nasdaq to implement provisions of the Sarbanes-Oxley Act, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the SEC has adopted additional rules and regulations in these areas, such as mandatory “say on pay” voting requirements that will apply to us when we cease to be an emerging growth company. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

We expect the rules and regulations applicable to public companies to substantially increase our legal and financial compliance costs and to make some activities more time consuming and costly. If these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition and results of operations. The increased costs will decrease our net income or increase our net loss, and may require us to reduce costs in other areas of our business or increase the prices of our products or services. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to incur substantial costs to maintain the same or similar coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers.



***If securities or industry analysts do not publish research or reports or publish unfavorable research or reports about our business, our stock price and trading volume could decline.***

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us, our business, our market or our competitors. We do not currently have and may never obtain research coverage by securities and industry analysts. If no securities or industry analysts commence coverage of our company, the trading price for our stock would be negatively impacted. In the event we obtain securities or industry analyst coverage, if one or more of the analysts who covers us downgrades our stock, our stock price would likely decline. If one or more of these analysts ceases to cover us or fails to regularly publish reports on us, interest in our stock could decrease, which could cause our stock price or trading volume to decline.

***If we fail to maintain proper and effective internal control over financial reporting, our ability to produce accurate and timely financial statements could be impaired, investors may lose confidence in our financial reporting and the trading price of our common stock may decline.***

Pursuant to Section 404 of Sarbanes-Oxley, our management will be required to report upon the effectiveness of our internal control over financial reporting beginning with our second annual report after this offering. When we lose our status as an “emerging growth company” and reach an accelerated filer threshold, our independent registered public accounting firm will be required to attest to the effectiveness of our internal control over financial reporting. The rules governing the standards that must be met for management to assess our internal control over financial reporting are complex and require significant documentation, testing and possible remediation. To comply with the requirements of being a reporting company under the Exchange Act, we will need to upgrade our information technology systems; implement additional financial and management controls, reporting systems and procedures; and hire additional accounting and finance staff. If we or, if required, our auditors are unable to conclude that our internal control over financial reporting is effective, investors may lose confidence in our financial reporting and the trading price of our common stock may decline.

There could be material weaknesses or significant deficiencies in our internal control over financial reporting in the future. Any failure to maintain internal control over financial reporting could severely inhibit our ability to accurately report our financial condition, results of operations or cash flows. If we are unable to conclude that our internal control over financial reporting is effective, or if our independent registered public accounting firm determines we have a material weakness or significant deficiency in our internal control over financial reporting once that firm begin its Section 404 reviews, investors may lose confidence in the accuracy and completeness of our financial reports, the market price of our common stock could decline, and we could be subject to sanctions or investigations by Nasdaq, the SEC or other regulatory authorities. Failure to remedy any material weakness in our internal control over financial reporting, or to implement or maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

***Provisions in our charter documents and under Delaware law could discourage a takeover that stockholders may consider favorable and may lead to entrenchment of management.***

Our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect immediately prior to the consummation of this offering will contain provisions that could significantly reduce the value of our shares to a potential acquiror or delay or prevent changes in control or changes in our management without the consent of our board of directors. The provisions in our charter documents will include the following:

- a classified board of directors with three-year staggered terms, which may delay the ability of stockholders to change the membership of a majority of our board of directors;

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- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the exclusive right of our board of directors, unless the board of directors grants such right to the stockholders, to elect a director to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;
- the required approval of at least 66-2/3% of the shares entitled to vote to remove a director for cause, and the prohibition on removal of directors without cause;
- the ability of our board of directors to authorize the issuance of shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquiror;
- the ability of our board of directors to alter our amended and restated bylaws without obtaining stockholder approval;
- the required approval of at least 66-2/3% of the shares entitled to vote to adopt, amend or repeal our amended and restated bylaws or repeal the provisions of our amended and restated certificate of incorporation regarding the election and removal of directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- an exclusive forum provision providing that the Court of Chancery of the State of Delaware will be the exclusive forum for certain actions and proceedings;
- the requirement that a special meeting of stockholders may be called only by the board of directors, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors; and
- advance notice procedures that stockholders must comply with in order to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of us.

We are also subject to the anti-takeover provisions contained in Section 203 of the Delaware General Corporation Law. Under Section 203, a corporation may not, in general, engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other exceptions, the board of directors has approved the transaction.

***Our amended and restated certificate of incorporation and amended and restated bylaws will provide that the Court of Chancery of the State of Delaware will be the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.***

Our amended and restated certificate of incorporation and amended and restated bylaws will provide that the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf under Delaware statutory or common law, including any action asserting a breach of fiduciary duty, any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws, or any action asserting a claim against us that is governed by the internal affairs doctrine; provided, that, this provision would not apply to suits brought to enforce a duty

or liability created by the Exchange Act. Furthermore, our amended and restated certificate of incorporation will also provide that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and other employees. By agreeing to this provision, however, stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder. Furthermore, the enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable. If a court were to find the choice of forum provisions in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our business and financial condition.

***Our ability to use net operating loss carryforwards and other tax attributes may be limited in connection with this offering or other ownership changes.***

We have incurred substantial losses during our history and do not expect to become profitable in the near future, and we may never achieve profitability. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset future taxable income, if any, until such unused losses expire (if at all).

Under recently enacted U.S. tax legislation, federal net operating loss, or NOL, carryforwards generated in periods after December 31, 2017, may be carried forward indefinitely but may only be used to offset 80% of our taxable income annually. Our NOL carryforwards are subject to review and possible adjustment by the Internal Revenue Service, or the IRS, and state tax authorities. Under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, our federal NOL carryforwards may become subject to an annual limitation in the event of certain cumulative changes in the ownership interest of significant stockholders over a three-year period in excess of 50 percentage points. Our ability to utilize our NOL carryforwards and other tax attributes to offset future taxable income or tax liabilities may be limited as a result of ownership changes, including potential changes in connection with this offering. Similar rules may apply under state tax laws. We have not yet determined the amount of the cumulative change in our ownership resulting from this offering or other transactions, or any resulting limitations on our ability to utilize our NOL carryforwards and other tax attributes. If we earn taxable income, such limitations could result in increased future tax liability to us and our future cash flows could be adversely affected. We have recorded a full valuation allowance related to our NOLs and other deferred tax assets due to the uncertainty of the ultimate realization of the future benefits of those assets.

***Recent U.S. tax legislation may materially adversely affect our financial condition, results of operations and cash flows.***

The Tax Act has significantly changed the U.S. federal income taxation of U.S. corporations, including by reducing the U.S. corporate income tax rate and revising the rules governing NOLs. Many of these changes became effective beginning in 2018, without any transition periods or grandfathering for existing transactions. The legislation is unclear in many respects and could be subject to potential amendments and technical corrections, as well as interpretations and implementing regulations by the U.S. Treasury Department and the IRS, any of which could lessen or increase certain adverse impacts of the legislation. In addition, it is unclear how these U.S. federal income tax changes will affect state and local taxation, which often uses federal taxable income as a starting point for computing state and local tax liabilities.

There may be other material adverse effects resulting from the legislation that we have not yet identified. While some of the changes made by the tax legislation may adversely affect us in one or more reporting periods and prospectively, other changes may be beneficial on a going forward basis. We continue to work with our tax advisors to determine the full impact that the recent tax legislation as a whole will have on us. We urge our investors to consult with their legal and tax advisors with respect to such legislation and the potential tax consequences of investing in our common stock.

***We could be subject to securities class action litigation.***

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us, because biotechnology and pharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

## **SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS**

This prospectus contains forward-looking statements. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy, research and development plans, the anticipated timing, costs, design and conduct of our planned clinical trials for vonoprazan, our only product candidate, the timing and likelihood of regulatory filings and approvals for vonoprazan, our ability to commercialize vonoprazan, if approved, the pricing and reimbursement of vonoprazan, if approved, the potential to develop future product candidates, the potential benefits of strategic collaborations and our intent to enter into any strategic arrangements, the timing and likelihood of success, plans and objectives of management for future operations, and future results of anticipated product development efforts, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplates,” “believes,” “estimates,” “predicts,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this prospectus are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of risks, uncertainties and assumptions described under the sections titled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and elsewhere in this prospectus. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. Except as required by applicable law, we undertake no obligation to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise. You should, however, review the factors and risks we describe in the reports we will file from time to time with the SEC after the date of this prospectus. See the section titled “Where You Can Find More Information.”

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and you are cautioned not to rely unduly upon them.

## MARKET AND INDUSTRY DATA

We obtained the industry, market and competitive position data used throughout this prospectus from our own internal estimates and research, as well as from independent market research, industry and general publications and surveys, governmental agencies and publicly available information in addition to research, surveys and studies conducted by third parties. Internal estimates are derived from publicly available information released by industry analysts and third-party sources, our internal research and our industry experience, and are based on assumptions made by us based on such data and our knowledge of our industry and market, which we believe to be reasonable. In some cases, we do not expressly refer to the sources from which this data is derived. In that regard, when we refer to one or more sources of this type of data in any paragraph, you should assume that other data of this type appearing in the same paragraph is derived from the same sources, unless otherwise expressly stated or the context otherwise requires. In addition, while we believe the industry, market and competitive position data included in this prospectus is reliable and based on reasonable assumptions, such data involve risks and uncertainties and are subject to change based on various factors, including those discussed in the section titled "Risk Factors." These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties or by us.

## USE OF PROCEEDS

We estimate that the net proceeds to us from the sale of the common stock that we are offering will be approximately \$ \_\_\_\_\_ million (or \$ \_\_\_\_\_ million if the underwriters exercise their option to purchase additional shares in full), assuming an initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Each \$1.00 increase (decrease) in the assumed initial public offering price of \$ \_\_\_\_\_ per share would increase (decrease) the net proceeds to us from this offering by approximately \$ \_\_\_\_\_ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each increase (decrease) of 1.0 million shares in the number of shares offered by us would increase (decrease) the net proceeds to us from this offering, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, by approximately \$ \_\_\_\_\_ million, assuming the assumed initial public offering price stays the same.

The principal purposes of this offering are to obtain additional capital to support our operations, to create a public market for our common stock and to facilitate our future access to the public equity markets. We intend to use approximately \$ \_\_\_\_\_ million of the net proceeds from this offering to fund the clinical development of vonoprazan and the remainder for working capital and general corporate purposes, including pre-commercial activities.

We may also use a portion of the remaining net proceeds and our existing cash and cash equivalents to in-license, acquire, or invest in complementary businesses, technologies, products or assets. However, we have no current commitments or obligations to do so.

We believe, based on our current operating plan, that the net proceeds from this offering together with our existing cash and cash equivalents, will be sufficient to fund our operations for at least the next \_\_\_\_\_ months, although there can be no assurance in that regard. In particular, we expect that the net proceeds from this offering will allow us to complete our planned Phase 3 clinical trials of vonoprazan in erosive esophagitis and the eradication of *H. pylori* infection. However, our expected use of proceeds from this offering described above represents our current intentions based on our present plans and business condition. We cannot predict with certainty all of the particular uses of the net from this offering or the actual amounts that we will spend on the uses set forth above.

The amounts and timing of our actual expenditures will depend on numerous factors, including the time and cost necessary to conduct our planned clinical trials, the results of such trials, and other factors described in the section titled "Risk Factors," as well as the amount of cash used in our operations and any unforeseen cash needs. Therefore, our actual expenditures may differ materially from the estimates described above. We may find it necessary or advisable to use the net proceeds for other purposes, and we will have broad discretion in the application of the net proceeds.

Pending the uses described above, we plan to invest the net proceeds from this offering in short- and intermediate-term, investment grade interest-bearing instruments.

## **DIVIDEND POLICY**

We have never declared or paid any cash dividends on our capital stock. We intend to retain future earnings, if any, to finance the operation of our business and do not anticipate paying any cash dividends in the foreseeable future. Any future determination related to dividend policy will be made at the discretion of our board of directors after considering our financial condition, results of operations, capital requirements, business prospects and other factors the board of directors deems relevant, and subject to the restrictions contained in any future financing instruments. In addition, under the terms of our Loan Agreement, we are prohibited from paying any cash dividends without the consent of the lenders.



## CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of June 30, 2019:

- on an actual basis;
- on a pro forma basis to reflect (i) the automatic conversion of the May 2019 Notes into an aggregate of \_\_\_\_\_ shares of our common stock immediately prior to the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on \_\_\_\_\_, 2019), (ii) the reclassification of the Takeda Warrant to stockholders' equity (deficit), and (iii) the filing and effectiveness of our amended and restated certificate of incorporation immediately prior to the closing of this offering; and
- on a pro forma as adjusted basis to give further effect to our issuance and sale of \_\_\_\_\_ shares of our common stock in this offering at an assumed initial public offering price of \$ \_\_\_\_\_ per share, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma and pro forma as adjusted information below is illustrative only, and our cash and cash equivalents and capitalization following the closing of this offering will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing. You should read this information in conjunction with our combined financial statements and related notes included in this prospectus and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and other financial information contained in this prospectus.

(in thousands, except share and par value data)	As of June 30, 2019		
	Actual (unaudited)	Pro Forma (unaudited)	Pro Forma As Adjusted <sup>(1)</sup> (unaudited)
Cash and cash equivalents	\$ 82,917	\$ _____	\$ _____
Capitalization:			
Convertible promissory notes payable at fair value (including accrued interest)	\$ 93,559	\$ _____	\$ _____
Warrant liabilities	49,597		
Long-term debt, including final payment fee and net of debt discount	24,512		
Stockholders' equity (deficit):			
Preferred stock, \$0.0001 par value; no shares authorized, issued and outstanding, actual; _____ shares authorized and no shares issued and outstanding, pro forma and pro forma as adjusted	-		
Common stock, \$0.0001 par value; 10,000,000 shares authorized, 5,478,100 shares issued and 3,329,920 shares outstanding, actual; _____ shares authorized, _____ shares issued and _____ shares outstanding, pro forma; shares authorized, _____ shares issued and _____ shares outstanding, pro forma as adjusted	-		
Additional paid-in capital	5,916		
Accumulated deficit	(90,301)		
<b>Total stockholders' equity (deficit)</b>	<b>(84,385)</b>	_____	_____
<b>Total capitalization</b>	<b>\$ 83,283</b>	\$ _____	\$ _____

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(1) Each \$1.00 increase (decrease) in the assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of our cash and cash equivalents, total stockholders' equity (deficit) and total capitalization by approximately \$ \_\_\_\_\_, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each increase (decrease) of 1.0 million shares in the number of shares offered by us at the assumed initial public offering price of \$ \_\_\_\_\_ per share would increase (decrease) the pro forma as adjusted amount of each of our cash and cash equivalents, total stockholders' equity (deficit) and total capitalization by approximately \$ \_\_\_\_\_, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The number of shares of common stock issued and outstanding pro forma and pro forma as adjusted in the table above is based on \_\_\_\_\_ shares of our common stock outstanding as of June 30, 2019, including 2,148,180 shares subject to forfeiture or our right of repurchase, and gives effect to the automatic conversion of the May 2019 Notes into an aggregate of \_\_\_\_\_ shares of our common stock immediately prior to the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on \_\_\_\_\_, 2019), and excludes:

- 3,500,000 shares of common stock issuable to Takeda upon the exercise of the Takeda Warrant, which warrant will become exercisable upon the closing of this offering;
- \_\_\_\_\_ shares of our common stock reserved for future issuance under our 2019 Plan, which will become effective in connection with this offering (which number includes \_\_\_\_\_ shares remaining available for issuance under our Existing Incentive Plan as of June 30, 2019 (which shares will become available for issuance under the 2019 Plan upon its effectiveness), but does not include any potential evergreen increases pursuant to the terms of the 2019 Plan);
- \_\_\_\_\_ shares of common stock reserved for future issuance under our ESPP, which will become effective in connection with this offering (which number does not include any potential evergreen increases pursuant to the terms of the ESPP); and
- \_\_\_\_\_ shares of our common stock which may become issuable to the lenders under our Loan Agreement upon the exercise of the Lender Warrants, at an exercise price of \$ \_\_\_\_\_ per share (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus), which warrants will only become exercisable if and when we borrow an additional \$25.0 million under our Loan Agreement.

Each \$1.00 increase in the assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, would decrease the number of shares of our common stock issued upon conversion of the May 2019 Notes by \_\_\_\_\_ shares. Each \$1.00 decrease in the assumed initial public offering price of \$ \_\_\_\_\_ per share would increase the number of shares of our common stock issued on conversion of the May 2019 Notes by \_\_\_\_\_ shares.

## DILUTION

If you invest in our common stock in this offering, your ownership interest will be immediately diluted to the extent of the difference between the initial public offering price per share and the pro forma as adjusted net tangible book value per share of our common stock after this offering.

As of June 30, 2019, our historical net tangible book value (deficit) was \$(84.4) million, or \$(15.40) per share of our common stock, based on 5,478,100 shares of common stock issued and outstanding as of such date, including 2,148,180 shares subject to forfeiture or our right of repurchase as of such date. Our historical net tangible book value per share represents total tangible assets less total liabilities, divided by the number of shares of common stock outstanding at June 30, 2019.

On a pro forma basis, after giving effect to (i) the automatic conversion of the May 2019 Notes into an aggregate of \_\_\_\_\_ shares of our common stock immediately prior to the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on \_\_\_\_\_, 2019), and (ii) the reclassification of the Takeda Warrant to stockholders' equity (deficit), our pro forma net tangible book value as of June 30, 2019 would have been approximately \$ \_\_\_\_\_ million, or approximately \$ \_\_\_\_\_ per share of our common stock.

After giving further effect to the sale of \_\_\_\_\_ shares of common stock in this offering at an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of June 30, 2019 would have been approximately \$ \_\_\_\_\_ million, or approximately \$ \_\_\_\_\_ per share. This amount represents an immediate increase in pro forma net tangible book value of approximately \$ \_\_\_\_\_ per share to our existing stockholders and an immediate dilution in pro forma net tangible book value of approximately \$ \_\_\_\_\_ per share to new investors purchasing shares of common stock in this offering.

Dilution per share to new investors is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the initial public offering price per share paid by new investors. The following table illustrates this dilution (without giving effect to any exercise by the underwriters of their option to purchase additional shares):

Assumed initial public offering price per share	\$
Historical net tangible book value (deficit) per share as of June 30, 2019	\$(15.40)
Pro forma increase in historical net tangible book value per share as of June 30, 2019 attributable to the pro forma adjustments described above	_____
Pro forma net tangible book value per share as of June 30, 2019	_____
Increase in pro forma net tangible book value per share attributable to new investors participating in this offering	_____
Pro forma as adjusted net tangible book value per share after this offering	_____
Dilution per share to new investors participating in this offering	\$ _____

Each \$1.00 increase (decrease) in the assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted net tangible book value per share after this offering by approximately \$ \_\_\_\_\_, and dilution in pro forma as adjusted net tangible book value per share to new investors by approximately \$ \_\_\_\_\_, assuming that the number of shares offered by us, as set forth on

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the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and the estimated offering expenses payable by us. Each increase (decrease) of 1.0 million shares in the number of shares offered by us would increase (decrease) our pro forma as adjusted net tangible book value per share after this offering by approximately \$ per share and decrease (increase) the dilution to investors participating in this offering by approximately \$ per share, assuming that the assumed initial public offering price of \$ per share remains the same, and after deducting the estimated underwriting discounts and commissions and the estimated offering expenses payable by us.

Each \$1.00 increase in the assumed initial public offering price of \$ per share, the midpoint of the price range set forth on the cover page of this prospectus, would decrease the number of shares of our common stock issued upon conversion of the May 2019 Notes by shares, and would increase (decrease) the pro forma as adjusted net tangible book value per share after this offering by approximately \$ , and dilution in pro forma net tangible book value per share to new investors by approximately \$ . Each \$1.00 decrease in the assumed initial public offering price of \$ per share would increase the number of shares of our common stock issued upon conversion of the May 2019 Notes by shares, and would decrease (increase) the pro forma as adjusted net tangible book value per share after this offering by approximately \$ , and dilution in pro forma net tangible book value per share to new investors by approximately \$ .

If the underwriters exercise their option to purchase additional shares of our common stock in full in this offering, the pro forma as adjusted net tangible book value after the offering would be approximately \$ per share, the increase in pro forma as adjusted net tangible book value per share to existing stockholders would be approximately \$ per share and the dilution per share to new investors would be \$ per share, in each case assuming an initial public offering price of \$ per share, the midpoint of the price range set forth on the cover page of this prospectus.

The following table summarizes on the pro forma as adjusted basis described above, as of June 30, 2019, the differences between the number of shares purchased from us, the total consideration paid to us in cash and the average price per share paid by existing stockholders for shares issued prior to this offering and the price to be paid by new investors in this offering. The calculations below are based on an assumed initial public offering price of \$ per share, the midpoint of the price range set forth on the cover page of the prospectus, before deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	Shares Purchased		Total Consideration		Weighted-average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders before this offering		%	\$	%	\$
New investors participating in this offering					\$
<b>Total</b>		<b>100%</b>	<b>\$</b>	<b>100%</b>	

If the Takeda Warrant had been exercised as of June 30, 2019, the pro forma as adjusted net tangible book value per share after this offering would be approximately \$ million, or approximately \$ per share, and total dilution per share to new investors would be approximately \$ per share.

If the underwriters exercise their option to purchase additional shares of our common stock in full:

- the percentage of shares of common stock held by existing stockholders before this offering will decrease to approximately % of the total number of shares of our common stock outstanding after this offering; and

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- the number of shares held by new investors participating in this offering will increase to \_\_\_\_\_, or approximately \_\_\_\_\_ % of the total number of shares of our common stock outstanding after this offering.

The foregoing tables and calculations on a pro forma and pro forma as adjusted basis are based on \_\_\_\_\_ shares of our common stock outstanding as of June 30, 2019, including 2,148,180 shares subject to forfeiture or our right of repurchase, and gives effect to the automatic conversion of the May 2019 Notes into an aggregate of \_\_\_\_\_ shares of our common stock immediately prior to the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on \_\_\_\_\_, 2019) and excludes:

- 3,500,000 shares of common stock issuable to Takeda upon the exercise of the Takeda Warrant, which warrant will become exercisable upon the closing of this offering;
- \_\_\_\_\_ shares of our common stock reserved for future issuance under our 2019 Plan, which will become effective in connection with this offering (which number includes \_\_\_\_\_ shares remaining available for issuance under our Existing Incentive Plan as of June 30, 2019 (which shares will become available for issuance under the 2019 Plan upon its effectiveness), but does not include any potential evergreen increases pursuant to the terms of the 2019 Plan);
- \_\_\_\_\_ shares of common stock reserved for future issuance under our ESPP, which will become effective in connection with this offering (which number does not include any potential evergreen increases pursuant to the terms of the ESPP); and
- \_\_\_\_\_ shares of our common stock which may become issuable to the lenders under our Loan Agreement upon the exercise of the Lender Warrants, at an exercise price of \$ \_\_\_\_\_ per share (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus) which warrants will only become exercisable if and when we borrow an additional \$25.0 million under our Loan Agreement.

To the extent any outstanding warrants or other rights are exercised, or we issue additional equity or convertible securities in the future, there will be further dilution to new investors.

## SELECTED COMBINED FINANCIAL DATA

The following tables set forth our selected historical combined financial data as of, and for the periods ended on, the dates indicated. The combined financial statements include the accounts of our company and YamadaCo IIA, Inc., both of which were entities under common control prior to the Merger. We have derived the selected combined statements of operations data for the year ended December 31, 2018 and the selected combined balance sheet data as of December 31, 2018 from our audited combined financial statements included elsewhere in this prospectus. We have derived the selected combined statements of operations data for the six months ended June 30, 2018 and 2019 and the selected combined balance sheet data as of June 30, 2019 from our unaudited combined financial statements included elsewhere in this prospectus. The unaudited combined financial statements have been prepared on a basis consistent with our audited combined financial statements included in this prospectus and, in the opinion of management, reflect all adjustments, consisting only of normal recurring adjustments, necessary to fairly state our results of operations for the six months ended June 30, 2018 and 2019 and financial position as of June 30, 2019. You should read these data together with our combined financial statements and related notes included elsewhere in this prospectus and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations." Our historical results for any prior period are not necessarily indicative of our future results.

(in thousands, except share and per share data)	Year Ended December 31, 2018	Six Months Ended June 30, 2018      2019 (unaudited)	
<b>Combined Statements of Operations Data:</b>			
<b>Operating expenses:</b>			
Research and development	\$ 20	\$ –	\$ 3,201
In-process research and development	–	–	78,897
General and administrative (includes related party amounts of \$321, \$124 and \$18, respectively)	1,205	506	2,142
<b>Total operating expenses</b>	<b>1,225</b>	<b>506</b>	<b>84,240</b>
Loss from operations	(1,225)	(506)	(84,240)
<b>Other income (expense):</b>			
Interest income	–	–	101
Interest expense (includes related party amounts of \$(13), \$(4) and \$(82), respectively)	(13)	(4)	(1,148)
Change in fair value of warrant liabilities (includes related party amounts of \$0, \$0 and \$(1,277), respectively)	–	–	(1,284)
Change in fair value of convertible promissory notes (includes related party amounts of \$(50), \$(4) and \$(502), respectively)	(50)	(4)	(2,442)
<b>Total other income (expense)</b>	<b>(63)</b>	<b>(8)</b>	<b>(4,773)</b>
<b>Net loss</b>	<b>\$ (1,288)</b>	<b>\$ (514)</b>	<b>\$ (89,013)</b>
Net loss per share, basic and diluted <sup>(1)</sup>	\$ (0.46)	\$ (0.21)	\$ (29.06)
Weighted-average shares of common stock outstanding, basic and diluted <sup>(1)</sup>	2,791,364	2,459,074	3,062,913
Pro forma net loss per share, basic and diluted (unaudited) <sup>(1)</sup>	\$		\$
Pro forma weighted-average shares of common stock outstanding, basic and diluted (unaudited) <sup>(1)</sup>			

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(1) See Note 1 to our combined financial statements included elsewhere in this prospectus for an explanation of the method used to calculate the historical and pro forma net loss per share, basic and diluted, and the number of shares used in the computation of the per share amounts.

(in thousands)	As of December 31, 2018	As of June 30, 2019 (unaudited)
<b>Combined Balance Sheet Data:</b>		
Cash and cash equivalents	\$ 879	\$ 82,917
Working capital (deficit) <sup>(1)</sup>	(1,286)	(60,210)
Total assets	902	84,879
Convertible promissory notes payable at fair value (including accrued interest)	1,963	93,559
Warrant liabilities	–	49,597
Long-term debt, including final payment fee and net of debt discount	–	24,512
Accumulated deficit	(1,288)	(90,301)
Total stockholders' equity (deficit)	(1,286)	(84,385)

(1) We define working capital (deficit) as current assets less current liabilities. See our combined financial statements included elsewhere in this prospectus for further details regarding our current assets and current liabilities.

## MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

*You should read the following discussion and analysis of our financial condition and results of operations together with our combined financial statements and related notes included elsewhere in this prospectus. Some of the information contained in this discussion and analysis are set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business and related financing, and includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the section titled "Risk Factors," our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.*

### Overview

We are a late clinical-stage biopharmaceutical company focused on developing and commercializing novel treatments for GI diseases. Our initial product candidate, vonoprazan, is an oral small molecule P-CAB. P-CABs are a novel class of medicines that block acid secretion in the stomach. Vonoprazan has rapid, potent, and durable anti-secretory effects and has demonstrated clinical benefits over the current standard of care as a single agent in the treatment of GERD, and in combination with antibiotics for the eradication of *H. pylori* infection. Takeda developed vonoprazan and has received marketing approval in nine countries in Asia and Latin America. Vonoprazan generated over \$500 million in net sales in its fourth full year on the market since its approval in Japan in late 2014. In May 2019, we in-licensed the U.S., European, and Canadian rights to vonoprazan from Takeda. We intend to initiate two pivotal Phase 3 clinical trials of vonoprazan in the fourth quarter of 2019. We believe that the successful completion of our Phase 3 clinical trials, together with the existing clinical data, will support regulatory submissions in 2021 and 2022 for marketing approval for the treatment of *H. pylori* infection and erosive esophagitis, respectively. If approved, we plan to independently commercialize vonoprazan in the United States. We also plan to seek commercial partnerships for vonoprazan in Europe and Canada, expand development of vonoprazan across indications, dosing regimens and alternative formulations and packaging, and in-license or acquire additional clinical or commercial stage product candidates for the treatment of GI diseases in a capital efficient manner.

We commenced our operations in 2018 and have devoted substantially all of our resources to date to organizing and staffing our company, business planning, raising capital, in-licensing our initial product candidate, vonoprazan, meeting with regulatory authorities, preparing for our planned Phase 3 clinical trials of vonoprazan, and providing other general and administrative support for these operations. Our operations to date have been funded primarily through the issuance of convertible promissory notes and commercial bank debt. From our inception through June 30, 2019, we have raised aggregate gross proceeds of \$90.3 million from the issuance of convertible promissory notes and \$25.0 million of commercial bank debt. As of June 30, 2019, we had cash and cash equivalents of \$82.9 million. Based on our current operating plan, we believe that our existing cash and cash equivalents, together with the estimated net proceeds from this offering, will be sufficient to meet our anticipated cash requirements through at least the next months.

We do not have any products approved for sale and have incurred net losses since our inception. Our net losses for the year ended December 31, 2018 and the six months ended June 30, 2019 were \$1.3 million and \$89.0 million, respectively. As of June 30, 2019, we had an accumulated deficit of \$90.3 million. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our clinical development activities, other research and development activities and pre-commercialization activities. We expect our expenses and operating losses will increase substantially as we advance vonoprazan through clinical trials, seek regulatory approval for



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vonoprazan, expand our clinical, regulatory, quality, manufacturing and commercialization capabilities, incur significant commercialization expenses for marketing, sales, manufacturing and distribution if we obtain marketing approval for vonoprazan, protect our intellectual property, expand our general and administrative support functions, including hiring additional personnel, and incur additional costs associated with operating as a public company.

We have never generated any revenue and do not expect to generate any revenues from product sales unless and until we successfully complete development and obtain regulatory approval for vonoprazan, which will not be for several years, if ever. Accordingly, until such time as we can generate significant revenue from sales of vonoprazan, if ever, we expect to finance our cash needs through equity offerings, our existing Loan Agreement, debt financings, or other capital sources, including potential collaborations, licenses and other similar arrangements. However, we may be unable to raise additional funds or enter into such other arrangements when needed on favorable terms or at all. Our failure to raise capital or enter into such other arrangements when needed would have a negative impact on our financial condition and could force us to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

### ***Financial Operations Overview***

Our combined financial statements include the accounts of Phathom (the receiving entity) and YamadaCo IIA prior to being merged into a single entity effective March 13, 2019. Phathom and YamadaCo IIA were entities under common control of Frazier, as a result of, among other things, Frazier's: (i) ownership of a majority of the outstanding capital stock of both companies; (ii) financing of both companies; (iii) control of the board of directors of both companies; and (iv) management of both companies. Both Phathom and YamadaCo IIA were formed for the purpose of identifying potential assets around which to form an operating company. As the merged entities were under common control, the combined financial statements report the financial position, results of operations and cash flows of Phathom and YamadaCo IIA as though the transfer of net assets and equity interests had occurred at the beginning of 2018. All intercompany accounts and transactions have been eliminated in combination.

### ***License Agreement with Takeda***

On May 7, 2019, we and Takeda entered into the Takeda License, pursuant to which we in-licensed the U.S., European, and Canadian rights to vonoprazan. During the term of the Takeda License, we and our affiliates are not permitted to commercialize any pharmaceutical product, other than vonoprazan, that treats acid-related disorders, except for certain generic and OTC competing products in specified circumstances. We will be responsible at our cost for the development, manufacture and commercialization of vonoprazan products. We are required to use commercially reasonable efforts to develop and commercialize the vonoprazan products in our licensed territory.

Under the Takeda License, Takeda has the sole right and authority, with our input, to prepare, file, prosecute, and maintain all Takeda and joint patents on a worldwide basis at its own cost. We are responsible, at our cost, for preparing, filing, prosecuting, and maintaining patents on inventions made solely by us in connection with vonoprazan, subject to input from Takeda.

We paid Takeda upfront consideration consisting of a cash fee of \$25.0 million, 500,000 shares of our common stock, a warrant to purchase 3,500,000 shares of our common stock at an exercise price of \$0.0001 per share, or the Takeda Warrant, and issued Takeda a right to receive an additional common stock warrant, or the Takeda Warrant Right, if Takeda's fully-diluted ownership of the

Company represents less than a certain specified percentage of the fully-diluted capitalization, including shares issuable upon conversion of outstanding convertible promissory notes, calculated immediately prior to the closing of our initial public offering. We agreed to make milestone payments to Takeda upon achieving certain tiered aggregate annual net sales of licensed products in the United States, Europe and Canada up a total maximum milestone amount of \$250.0 million. We also agreed to make tiered royalty payments at percentages in the very low to mid double digits on net sales of licensed products, subject to specified offsets and reductions. Royalties will be payable, on a product-by-product and country-by-country basis from the first commercial sale of such product in such country, until the latest of expiration of the licensed patents covering the applicable product, expiration of regulatory exclusivity in such country, or 15 years following first commercial sale in such country. For additional information regarding the Takeda License, see “Business—Intellectual Property—License Agreement with Takeda Pharmaceutical Company Limited.”

## **Components of Results of Operations**

### ***Operating Expenses***

#### ***Research and Development***

To date, our research and development expenses have related to the development of vonoprazan. Research and development expenses are recognized as incurred and payments made prior to the receipt of goods or services to be used in research and development are capitalized until the goods or services are received.

Research and development expenses include:

- salaries, payroll taxes, employee benefits, and stock-based compensation charges for those individuals involved in research and development efforts;
- external research and development expenses incurred under agreements with contract research organizations, or CROs, and consultants to conduct and support our planned clinical trials of vonoprazan; and
- costs related to manufacturing vonoprazan clinical trials.

We plan to substantially increase our research and development expenses for the foreseeable future as we continue the development of vonoprazan. We cannot determine with certainty the timing of initiation, the duration or the completion costs of current or future clinical trials and nonclinical studies of vonoprazan or any future product candidates due to the inherently unpredictable nature of clinical and preclinical development. Clinical and preclinical development timelines, the probability of success and development costs can differ materially from expectations. In addition, we cannot forecast which product candidates may be subject to future collaborations, when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development plans and capital requirements.

Our future clinical development costs may vary significantly based on factors such as:

- per patient trial costs;
- the number of trials required for approval;
- the number of sites included in the trials;
- the countries in which the trials are conducted;
- the length of time required to enroll eligible patients;
- the number of patients that participate in the trials;

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- the number of doses evaluated in the trials;
- the drop-out or discontinuation rates of patients;
- potential additional safety monitoring requested by regulatory agencies;
- the duration of patient participation in the trials and follow-up;
- the phase of development of the product candidate; and
- the efficacy and safety profile of the product candidate.

### ***In-Process Research and Development***

In-process research and development expenses relate to the Takeda License, and include the \$78.9 million purchase price of the acquired research and development assets. The purchase price of the Takeda License consisted of the following: (i) \$25.0 million in cash; (ii) issuance to Takeda of 500,000 shares of our common stock at a fair value of \$5.9 million; (iii) issuance of the Takeda Warrant at an initial fair value of \$47.9 million; (iv) issuance of the Takeda Warrant Right, with a nominal initial fair value due to the low probability of issuance; and (v) \$0.1 million of transaction costs incurred by us.

### ***General and Administrative***

General and administrative expenses consist of salaries and employee-related costs, including stock-based compensation, for personnel in executive, finance and other administrative functions, legal fees relating to intellectual property and corporate matters, and professional fees for accounting and consulting services. We anticipate that our general and administrative expenses will increase in the future to support our continued research and development activities, pre-commercial preparation activities for vonoprazan and, if any future product candidate receives marketing approval, commercialization activities. We also anticipate increased expenses related to audit, legal, regulatory, and tax-related services associated with maintaining compliance with exchange listing and SEC requirements, director and officer insurance premiums, and investor relations costs associated with operating as a public company.

### ***Interest Income***

Interest income consists of interest on our money market fund.

### ***Interest Expense***

Interest expense consists of (i) interest on our outstanding convertible promissory notes at per annum interest rates ranging from 1.68% to 6.00% and (ii) interest on our outstanding commercial bank debt at a floating per annum interest rate (7.25% as of June 30, 2019) and amortization of the commercial bank debt discount recorded in connection with the fair value of warrants issued to the lenders, debt issuance costs incurred and the obligation to make a final payment fee.

### ***Change in Fair Value of Warrant Liabilities***

In connection with the Takeda License, we issued the Takeda Warrant and Takeda Warrant Right, or together the Takeda Warrants. In connection with our commercial bank debt, we issued the lenders warrants to purchase our capital stock, or the Lender Warrants. The Takeda Warrants are accounted for as liabilities as they do not meet all the conditions for equity classification due to (i) insufficient authorized shares for the Takeda Warrant and (ii) the Takeda Warrant Right is not indexed to our own stock. The Lender Warrants are accounted for as liabilities as they contain a holder

put right under which the lenders could require us to pay cash in exchange for the warrants. We adjust the carrying value of our warrant liabilities to their estimated fair value at each reporting date, with any change in fair value of the warrant liabilities recorded as an increase or decrease to change in fair value of warrant liabilities in the combined statements of operations.

The fair value of the Takeda Warrants is derived from the model used to estimate the fair value of our common stock and the fair value of the Lender Warrants is estimated using a probability-weighted model considering initial public offering and non-initial public offering scenarios. The initial public offering scenarios utilize a binomial lattice model to estimate a distribution of total equity values as of a projected initial public offering date. The non-initial public offering scenario utilizes the repurchase price associated with the warrant put right discounted to present value based on venture capital rates of return and the term associated with the put right.

Upon the closing of this offering, (i) the Takeda Warrant will become reclassified to stockholders' equity and require a final adjustment to fair value, (ii) the Takeda Warrant Right (based on an assumed initial public offering price of \$            per share, the midpoint of the price range set forth on the cover of this prospectus) will expire without effect since no fair value has been allocated to it, and (iii) the Lender Warrants, as a result of a put option, will continue as warrant liabilities adjusted to fair value at each reporting date.

#### ***Change in Fair Value of Convertible Promissory Notes***

We issued convertible promissory notes in 2018 and 2019 for which we have elected the fair value option. We adjust the carrying value of our convertible promissory notes to their estimated fair value at each reporting date, with any change in fair value of the convertible promissory notes recorded as an increase or decrease to change in fair value of convertible promissory notes in our combined statements of operations. All outstanding convertible promissory notes and related accrued interest will convert to shares of our common stock upon the closing of this offering.

Prior to their exchange into convertible promissory notes issued in May 2019, the fair value of convertible promissory notes issued from inception through April 2019 was estimated using a scenario-based analysis that estimated the fair value of the convertible promissory notes based on the probability-weighted present value of expected future investment returns, considering possible outcomes available to the noteholders, including conversions in subsequent equity financings, change of control transactions, settlement and dissolution. The fair value of the convertible promissory notes issued in May 2019 is estimated using a scenario-based analysis that estimates the fair value of the convertible promissory notes based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available to the noteholders, including various initial public offering, settlement, equity financing, corporate transaction and dissolution scenarios.

**Results of Operations****Comparison of the Six Months Ended June 30, 2018 and 2019**

The following table summarizes our results of operations for each of the periods indicated (in thousands):

	Six Months Ended June 30,		Change
	2018	2019 (unaudited)	
Operating expenses:			
Research and development	\$ —	\$ 3,201	\$ 3,201
In-process research and development	—	78,897	78,897
General and administrative	506	2,142	1,636
Total operating expenses	<u>506</u>	<u>84,240</u>	<u>83,734</u>
Loss from operations	(506)	(84,240)	(83,734)
Other income (expense):			
Interest income	—	101	101
Interest expense	(4)	(1,148)	(1,144)
Change in fair value of warrant liabilities	—	(1,284)	(1,284)
Change in fair value of convertible promissory notes	(4)	(2,442)	(2,438)
Total other income (expense)	<u>(8)</u>	<u>(4,773)</u>	<u>(4,765)</u>
Net loss	<u>\$ (514)</u>	<u>\$ (89,013)</u>	<u>\$ (88,499)</u>

**Research and Development Expenses.** We had no research and development expenses for the six months ended June 30, 2018 as we had not yet identified or in-licensed a product candidate. The \$3.2 million of research and development expenses for the six months ended June 30, 2019 consisted of \$3.0 million of clinical development of vonoprazan and \$0.2 million of personnel-related expenses.

**In-Process Research and Development Expenses.** We had no in-process research and development expenses for the six months ended June 30, 2018. The \$78.9 million of in-process research and development expenses for the six months ended June 30, 2019 consisted of the purchase price for the research and development assets we acquired as part of the Takeda License.

**General and Administrative Expenses.** General and administrative expenses were \$0.5 million and \$2.1 million for the six months ended June 30, 2018 and 2019, respectively. The increase of \$1.6 million was due to increases of \$0.6 million in legal fees related to corporate and intellectual property matters, \$0.4 million in professional services expenses for accounting, audit, tax, valuation and other services, \$0.3 million in personnel-related expenses, \$0.2 million of consulting services expenses, and \$0.1 million of other operating expenses.

**Other Income (Expense).** Other expense of \$8,000 for the six months ended June 30, 2018 consisted of \$4,000 of interest expense on our outstanding convertible promissory notes and \$4,000 of other expense related to the increase in fair value of those convertible promissory notes. Other expense of \$4.8 million for the six months ended June 30, 2019 consisted of \$2.4 million of other expense related to the increase in the fair value of our convertible promissory notes, \$1.3 million of other expense related to the increase in the fair value of warrant liabilities, \$0.9 million of interest expense on our outstanding convertible promissory notes, \$0.3 million of interest expense on outstanding commercial bank debt, and partially offset by \$0.1 million of interest income.

## **Liquidity and Capital Resources**

We have incurred net losses and negative cash flows from operations since our inception and anticipate we will continue to incur net losses for the foreseeable future. As of June 30, 2019, we had cash and cash equivalents of \$82.9 million.

### **Commercial Bank Debt**

On May 14, 2019, we entered into the Loan Agreement with SVB, as administrative and collateral agent, and lenders SVB and WestRiver. We borrowed \$25.0 million, or Term Loan A, at the inception of the Loan Agreement and have the right to borrow an additional \$25.0 million, or Term Loan B, and which we collectively refer to as the Term Loans. Term Loan B is available through March 31, 2020, provided that (i) we have received at least \$150.0 million of net cash proceeds in connection with the issuance and sale, subsequent to April 1, 2019, of our equity securities and subordinated debt, (ii) we have initiated Phase 3 clinical trials for vonoprazan, and (iii) no event of default has occurred. As of June 30, 2019, we had outstanding Term Loans of \$25.0 million and accrued interest of \$0.2 million.

The Term Loans bear interest at a floating rate of the higher of the Wall Street Journal Prime rate plus 1.75% (7.25% at June 30, 2019) or 7.25%. The monthly payments consist of interest-only through June 1, 2021 or, in the event of positive data with respect to our Phase 3 clinical trials in both indications for vonoprazan sufficient to file an NDA with the FDA, through June 1, 2022. Subsequent to the interest-only period, the Term Loans will be payable in equal monthly installments of principal, plus accrued and unpaid interest through the maturity date of May 1, 2024. In addition, we are obligated to pay a final payment fee of 8.25% of the original principal amount of the Term Loans. We may elect to prepay all or a portion of the Term Loans prior to maturity, subject to a prepayment fee of up to 2.0% of the then outstanding principal balance and payment of a pro rata portion of the final payment fee. After repayment, no Term Loan amounts may be borrowed again. The borrowings under the Loan Agreement are collateralized by substantially all of our assets, excluding intellectual property and certain other assets. The Loan Agreement contains certain customary affirmative and negative covenants and events of default. The affirmative covenants include, among others, covenants requiring us to maintain our legal existence and governmental approvals, deliver certain financial reports, maintain insurance coverage and satisfy certain requirements regarding our operating accounts. The negative covenants include, among others, limitations on our ability to incur additional indebtedness and liens, merge with other companies or consummate certain changes of control, acquire other companies, engage in new lines of business, make certain investments, pay dividends, transfer or dispose of assets, amend certain material agreements or enter into various specified transactions. Upon the occurrence of an event of default, subject to any specified cure periods, all amounts owed by us would begin to bear interest at a rate that is 4.00% above the rate effective immediately before the event of default and may be declared immediately due and payable by SVB, as collateral agent. As of June 30, 2019, we were in compliance with all applicable covenants under the Loan Agreement.

In connection with the Loan Agreement, we issued the Lender Warrants, which become exercisable only if we borrow Term Loan B, and the number, class and per share exercise price of the shares subject to the warrants is dependent on the terms of certain future equity financing transactions of the Company, including an initial public offering. The Lender Warrants expire ten years from the date of issuance, subject to earlier termination on September 30, 2020 if we do not draw down Term Loan B on or before March 31, 2020. The Lender Warrants include a put option pursuant to which, in the event that we do not draw down Term Loan B on or before March 31, 2020, the warrant holders may require us to repurchase the warrants for a total aggregate repurchase price of \$0.5 million. The put right is exercisable through September 30, 2020.

### **Convertible Note Financings**

From January 2018 to April 2019, we issued an aggregate of \$2.4 million of convertible promissory notes to Frazier, or the Frazier Notes, bearing interest at per annum rates ranging from 1.68% to 2.55%. In May 2019, these notes and related accrued interest were exchanged, at their then fair value of \$2.4 million, for the May 2019 convertible promissory notes described below.

On May 7, 2019, we entered into a note purchase agreement under which we issued an aggregate of \$90.3 million of unsecured convertible promissory notes, or the May 2019 Notes, resulting in gross proceeds to us of \$87.8 million in cash and \$2.4 million related to the exchange of the Frazier Notes. Including the conversion of the Frazier Notes, Frazier purchased \$20.0 million of the May 2019 Notes. The May 2019 Notes bear interest at a rate of 6% per annum and are subordinated to borrowings under our Loan Agreement. The May 2019 Notes become payable upon demand of the holders of at least 60% of the outstanding principal amount of the May 2019 Notes, including Frazier, on May 7, 2020, or the Maturity Date, and become due and payable on May 7, 2022, subject to earlier conversion or repayment in the event we complete certain equity financings or a change of control. The note purchase agreement includes certain customary covenants and events of default. The May 2019 Notes will automatically convert into shares of our common stock immediately prior to the completion of this offering.

### **Funding Requirements**

Based on our current operating plan, we believe that our existing cash and cash equivalents, together with the estimated net proceeds from this offering, will be sufficient to meet our anticipated cash requirements through at least the next months. In particular, we expect the net proceeds from this offering will allow us to complete our planned Phase 3 clinical trials of vonoprazan in erosive esophagitis and the eradication of *H. pylori* infection. However, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially. We have based this estimate on assumptions that may prove to be wrong, and we could deplete our capital resources sooner than we expect. Additionally, the process of testing product candidates in clinical trials is costly, and the timing of progress and expenses in these trials is uncertain.

Our future capital requirements will depend on many factors, including:

- the initiation, type, number, scope, results, costs and timing of, our clinical trials of vonoprazan, and preclinical studies or clinical trials of other potential product candidates we may choose to pursue in the future, including feedback received from regulatory authorities;
- the costs and timing of manufacturing for vonoprazan or any future product candidates, including commercial scale manufacturing if any product candidate is approved;
- the costs, timing and outcome of regulatory review of vonoprazan or any future product candidates;
- the costs of obtaining, maintaining and enforcing our patents and other intellectual property rights;
- our efforts to enhance operational systems and hire additional personnel to satisfy our obligations as a public company, including enhanced internal controls over financial reporting;
- the costs associated with hiring additional personnel and consultants as our business grows, including additional executive officers and clinical development personnel;
- the timing and amount of the milestone or other payments we must make to Takeda and any future licensors;

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- the costs and timing of establishing or securing sales and marketing capabilities if vonoprazan or any future product candidate is approved;
- our ability to achieve sufficient market acceptance, coverage and adequate reimbursement from third-party payors and adequate market share and revenue for any approved products;
- patients' willingness to pay out-of-pocket for any approved products in the absence of coverage and/or adequate reimbursement from third-party payors;
- the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements; and
- costs associated with any products or technologies that we may in-license or acquire.

Until such time, if ever, as we can generate substantial product revenues to support our cost structure, we expect to finance our cash needs through equity offerings, the Loan Agreement, debt financings, or other capital sources, including potential collaborations, licenses and other similar arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be or could be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt financing and equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise funds through collaborations, or other similar arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us and/or may reduce the value of our common stock. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market our product candidates even if we would otherwise prefer to develop and market such product candidates ourselves. We have prepared cash flow forecasts which indicate that based on our expected operating losses and negative cash flows, there is substantial doubt about our ability to continue as a going concern without raising additional capital within 12 months after the date that the combined financial statements for the year ended December 31, 2018 and for the six months ended June 30, 2019 are issued. Our independent registered public accounting firm also included an explanatory paragraph in its report on our combined financial statements as of and for the year ended December 31, 2018 indicating that there is substantial doubt about our ability to continue as a going concern.

### **Cash Flows**

The following table sets forth a summary of the net cash flow activity for each of the periods indicated (in thousands):

	Year Ended December 31, 2018	Six Months Ended June 30,	
		2018	2019
Net cash provided by (used in):			
Operating activities	\$ (1,023)	\$ (452)	\$ (6,018)
Investing activities	–	–	(25,118)
Financing activities	1,902	552	113,174
Net increase in cash	<u>\$ 879</u>	<u>\$ 100</u>	<u>\$ 82,038</u>



**Operating Activities**

Net cash used in operating activities was approximately \$1.0 million for the year ended December 31, 2018, and \$0.5 million and \$6.0 million for the six months ended June 30, 2018 and 2019, respectively. The net cash used in operating activities for the year ended December 31, 2018 and the six months ended June 30, 2018 was primarily due to our net loss in each period. The net cash used in operating activities for the six months ended June 30, 2019 was due to our net loss of \$89.0 million, adjusted for \$82.7 million of noncash charges and a \$0.3 million net change in operating assets and liabilities. Noncash charges consisted of our in-process research and development charges of \$78.9 million related to the Takeda License, \$2.4 million related to the change in fair value of convertible promissory notes, \$1.3 million related to the change in fair value of warrant liabilities, and \$0.1 million of amortization of debt discounts on our commercial bank debt. The net change in operating assets and liabilities related to a \$1.0 million increase in accrued interest on our outstanding convertible promissory notes and commercial bank debt and a \$0.9 million increase in accounts payable and accrued expenses in support of the growth in our operating activities, partially offset by a \$1.6 million increase in prepaid clinical activities.

**Investing Activities**

Net cash used in investing activities for the six months ended June 30, 2019 was primarily due to the cash we paid, including transaction costs, to acquire the Takeda License. We had no investing activities for the year ended December 31, 2018.

**Financing Activities**

Net cash provided by financing activities for the year ended December 31, 2018 and the six months ended June 30, 2018 was primarily due to proceeds from our issuance of convertible promissory notes. Net cash provided by financing activities for the six months ended June 30, 2019 was \$113.2 million, due to \$88.3 million of net proceeds from our issuance of convertible promissory notes and \$24.9 million of net proceeds from our commercial bank debt.

**Contractual Obligations and Commitments**

The following table summarizes our contractual obligations as of June 30, 2019 (in thousands):

	Payments Due by Period				
	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Long-term debt, including interest and final payment fee <sup>(1)</sup>	\$ 33,425	\$ 1,843	\$12,372	\$19,210	\$ —
Convertible promissory notes, including interest <sup>(2)</sup>	95,680	95,680	—	—	—
<b>Total</b>	<b>\$129,105</b>	<b>\$97,523</b>	<b>\$12,372</b>	<b>\$19,210</b>	<b>\$ —</b>

(1) Our outstanding long-term debt bears interest at a variable rate. The interest amounts included herein are based on the interest rate in effect as of June 30, 2019.

(2) Our outstanding convertible promissory notes become payable upon demand of the holders of at least 60% of the outstanding principal amount of the notes on May 7, 2020, and become due and payable on May 7, 2022, subject to earlier conversion or repayment in the event we complete certain equity financings or a change of control. The amounts herein assume repayment on May 7, 2020.

Under the Takeda License, we have milestone payment obligations that are contingent upon the achievement of specified levels of product sales and are required to make certain royalty payments in

connection with the sale of products developed under the agreement. As of June 30, 2019, we are unable to estimate the timing or likelihood of achieving the milestones or making future product sales and, therefore, any related payments are not included in the table above.

We enter into contracts in the normal course of business for contract research services, contract manufacturing services, professional services and other services and products for operating purposes. These contracts generally provide for termination after a notice period, and, therefore, are cancelable contracts and not included in the table above.

### **Critical Accounting Policies and Significant Judgments and Estimates**

Our management's discussion and analysis of our financial condition and results of operations is based on our combined financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States, or GAAP. The preparation of our combined financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities and expenses and the disclosure of contingent assets and liabilities in our combined financial statements and accompanying notes. We evaluate these estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are more fully described in Note 1 to our combined financial statements included elsewhere in this prospectus, we believe that the following accounting policies are the most critical for fully understanding and evaluating our financial condition and results of operations.

### ***Accrued Research and Development Expenses***

As part of the process of preparing our combined financial statements, we are required to estimate our accrued expenses as of each balance sheet date. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. We make estimates of our accrued expenses as of each balance sheet date based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments, if necessary. The significant estimates in our accrued research and development expenses include the costs incurred for services performed by our vendors in connection with research and development activities for which we have not yet been invoiced.

We base our expenses related to research and development activities on our estimates of the services received and efforts expended pursuant to quotes and contracts with vendors that conduct research and development on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the research and development expense. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or prepaid expense accordingly. Advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received rather than when the payment is made.

Although we do not expect our estimates to be materially different from amounts actually incurred, if our estimates of the status and timing of services performed differ from the actual status and timing of services performed, it could result in us reporting amounts that are too high or too low in any particular period. To date, there have been no material differences between our estimates of such expenses and the amounts actually incurred.

### ***In-Process Research and Development***

We evaluate whether acquired intangible assets are a business under applicable accounting standards. Additionally, we evaluate whether the acquired assets have a future alternative use. Intangible assets that do not have future alternative use, such as the Takeda License, are considered acquired in-process research and development. When the acquired in-process research and development assets are not part of a business combination, the value of the consideration paid is expensed on the acquisition date. Future costs to develop these assets are recorded to research and development expense as they are incurred.

### ***Fair Value of Warrant Liabilities and Convertible Promissory Notes***

As described above, our warrant liabilities and convertible promissory notes are revalued at each reporting period with changes in the fair value of the liabilities recorded as a component of other income (expense) in the combined statements of operations. There are significant judgments and estimates inherent in the determination of the fair value of these liabilities. If we had made different assumptions including, among others, those related to the timing and probability of various corporate scenarios, discount rates, volatilities and exit valuations, the carrying values of our warrant liabilities and convertible promissory notes, and our net loss and net loss per common share could have been significantly different.

### ***Stock-Based Compensation Expense***

Stock-based compensation expense represents the cost of the grant date fair value of equity awards recognized over the requisite service period of the awards (generally the vesting period) on a straight-line basis with forfeitures recognized as they occur. Through June 30, 2019, our stock-based compensation expense primarily consisted of our issuance of restricted stock awards, or RSAs, for which the fair value is determined based on the fair value of the underlying common stock. As of June 30, 2019, the unrecognized stock-based compensation expense was \$59,000, which is expected to be recognized as expense over a weighted-average period of approximately 0.7 years.

### ***Common Stock Valuations***

Prior to obtaining the Takeda License in May 2019 and entering into the May 2019 Notes, the fair value of our common stock was nominal because we were not sufficiently capitalized and held no assets that could be used to generate future revenues. Subsequent to obtaining the Takeda License and entering into the May 2019 Notes, we estimated the fair value of our common stock using methodologies, approaches and assumptions consistent with the American Institute of Certified Public Accountants Accounting and Valuation Guide: *Valuation of Privately Held Company Equity Securities Issued as Compensation*, or the Practice Aid. The Practice Aid prescribes several valuation approaches for setting the value of an enterprise, such as the cost, income and market approaches, and various methodologies for allocating the value of an enterprise to its common stock. We utilized a scenario-based analysis that estimated the fair value per share based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available to us, including various initial public offering, stay private and dissolution scenarios, and applying a discount for lack of marketability. We considered various stay private scenarios using the

income approach and allocated the indicated equity value to each class of equity based on the current-value method. We also considered various initial public offering scenarios based on expected equity values in an initial public offering and allocated the indicated equity value to each class of equity on a fully-diluted basis considering the dilutive impacts of the May 2019 Notes and the Lender Warrants.

We considered various objective and subjective factors to determine the fair value of our common stock, including:

- valuations of our common stock performed with the assistance of independent third-party valuation specialists;
- our stage of development and business strategy, including the status of research and development efforts of vonoprazan, and the material risks related to our business and industry;
- our results of operations and financial position, including our levels of available capital resources;
- the valuation of publicly-traded companies in the life sciences and biotechnology sectors;
- the lack of marketability of our common stock as a private company;
- the likelihood of achieving a liquidity event for the holders of our common stock, such as an initial public offering or a sale of our company, given prevailing market conditions;
- trends and developments in our industry; and
- external market conditions affecting the life sciences and biotechnology industry sectors.

There are significant judgments and estimates inherent in the determination of the fair value of our common stock. These judgments and estimates include assumptions regarding our future operating performance, the time to complete an initial public offering or other liquidity event and the determination of the appropriate valuation methods. If we had made different assumptions, our net loss and net loss per common share could have been significantly different.

Following the completion of this offering, the fair value of our common stock will be based on the closing price as reported on the date of grant on the primary stock exchange on which our common stock is traded.

#### **JOBS Act**

As an emerging growth company under the JOBS Act, we can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this exemption and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. We intend to rely on other exemptions provided by the JOBS Act, including without limitation, not being required to comply with the auditor attestation requirements of Section 404(b) of Sarbanes-Oxley.

We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year following the fifth anniversary of the consummation of this offering, (ii) the last day of the fiscal year in which we have total annual gross revenue of at least \$1.07 billion, (iii) the last day of the fiscal year in which we are deemed to be a "large accelerated filer" as defined in Rule 12b-2 under the Exchange Act, which would occur if the market value of our common stock held by non-affiliates exceeded \$700.0 million as of the last business day of the second fiscal quarter of such year, or (iv) the date on which we have issued more than \$1.0 billion in non-convertible debt securities during the prior three-year period.

**Recent Accounting Pronouncements**

See Note 1 to our combined financial statements included elsewhere in this prospectus.

**Off-Balance Sheet Arrangements**

During the periods presented we did not have, nor do we currently have, any off-balance sheet arrangements as defined under SEC rules.

**Quantitative and Qualitative Disclosures about Market Risk**

***Interest Rate Risk***

Our cash and cash equivalents consist of cash in readily available checking accounts and money market funds. As a result, the fair value of our portfolio is relatively insensitive to interest rate changes. Our outstanding convertible promissory notes bear interest at a fixed rate. Our long-term debt bears interest at a variable rate. A 10% increase or decrease in the interest rate on our long-term debt would not have a material effect on our financial position, results of operations or cash flows.

***Effects of Inflation***

Inflation generally affects us by increasing our cost of labor and research and development contract costs. We do not believe inflation has had a material effect on our results of operations during the periods presented.

## BUSINESS

### Overview

We are a late clinical-stage biopharmaceutical company focused on developing and commercializing novel treatments for gastrointestinal, or GI, diseases. Our initial product candidate, vonoprazan, is an oral small molecule potassium competitive acid blocker, or P-CAB. P-CABs are a novel class of medicines that block acid secretion in the stomach. Vonoprazan has rapid, potent, and durable anti-secretory effects and has demonstrated clinical benefits over the current standard of care as a single agent in the treatment of gastroesophageal reflux disease, or GERD, and in combination with antibiotics for the eradication of *Helicobacter pylori*, or *H. pylori*, infection. Takeda Pharmaceutical Company Limited, or Takeda, developed vonoprazan and has received marketing approval in nine countries in Asia and Latin America. Vonoprazan generated over \$500 million in net sales in its fourth full year on the market since its approval in Japan in late 2014. In May 2019, we in-licensed the U.S., European, and Canadian rights to vonoprazan from Takeda. We intend to initiate two pivotal Phase 3 clinical trials of vonoprazan in the fourth quarter of 2019.

We believe we can leverage Takeda's extensive clinical data, including results from 17 Phase 3 clinical trials, to rapidly advance vonoprazan through pivotal trials in the United States and Europe. Based on our recently completed meetings with the U.S. Food and Drug Administration, or FDA, we plan to initiate two pivotal Phase 3 clinical trials in the fourth quarter of 2019 for vonoprazan: one for the treatment of erosive GERD, also known as erosive esophagitis, and a second for the eradication of *H. pylori* infection. We expect to report top-line data from both trials in 2021. We believe that the successful completion of our Phase 3 clinical trials, together with the existing clinical data, will support regulatory submissions in 2021 and 2022 for marketing approval for the treatment of *H. pylori* infection and erosive esophagitis, respectively. Vonoprazan has the potential to be the first gastric anti-secretory agent from a novel class approved in the United States, Europe, or Canada in over 30 years.

GERD and *H. pylori* infection are two of the most common acid-related GI diseases and impact millions of people. The prevalence of GERD is estimated to be 20% of the U.S. population and 15% of the population in the five major countries in the European Union (France, Germany, Italy, Spain and the United Kingdom, or the EU5). GERD is a disease that develops when the reflux of acidic stomach contents causes troublesome symptoms and/or complications. Approximately 30% of GERD patients have erosive esophagitis. *H. pylori* is a bacterial pathogen that infects approximately 35% of the U.S. population and 45% of the EU5 population. As a result of the chronic inflammation induced by *H. pylori* infection, approximately 20% of infected patients will develop a range of pathologies, including dyspepsia, peptic ulcer disease, gastric cancer, and mucosa-associated lymphoid tissue (MALT) lymphoma.

Over the last thirty years, the proton pump inhibitor, or PPI, class, has been the standard of care for the treatment of acid-related GI diseases. PPIs are generally used as a single agent for the treatment of GERD and in combination with antibiotics for the eradication of *H. pylori* infection. The PPI class includes drugs such as Prilosec (omeprazole), Nexium (esomeprazole), and Prevacid (lansoprazole). Prior to the introduction of generic and over-the-counter, or OTC, alternatives, annual PPI class sales reached approximately \$12.5 billion in the United States, and peak sales for individual brands were approximately \$3.7 billion for Prilosec, \$3.5 billion for Nexium, and \$3.4 billion for Prevacid in the United States.

While PPIs are the current standard of care and have experienced significant commercial success, they have significant limitations that result in a large unmet medical need. In GERD, PPI therapy is suboptimal for many patients due to the slow onset and insufficient duration of acid control

which can lead to inadequate symptom relief. Approximately 15% to 45% of GERD patients remain inadequately treated with PPIs. In the eradication of *H. pylori* infection, the standard of care consists of a combination of a PPI and at least two oral antibiotics. However, increasing antibiotic resistance has resulted in declining eradication rates with PPI-based therapy. We believe these unmet medical needs are in part driven by limitations associated with the mechanism of action and pharmacokinetics of PPIs.

PPIs reduce gastric acid secretion by irreversibly binding to and inhibiting active proton pumps expressed on the parietal cells. PPIs require activation by gastric acid, but they are unstable in the presence of acid. This instability, combined with the short circulating half-life of PPIs, limits their efficacy. Additionally, because proton pumps continuously switch between active and inactive states, multiple doses of PPIs are required to inhibit enough proton pumps to achieve a clinical benefit. As a result, PPIs have a relatively slow onset of action and limited potency and duration of effect, which may result in patients experiencing only partial relief, increasing PPI dosage, and/or cycling through multiple PPIs seeking relief.

Vonoprazan, given its differentiated mechanism of action and pharmacologic profile, has been shown to provide more rapid, potent, and durable acid control than PPIs. Unlike PPIs, vonoprazan:

- does not require activation by gastric acid;
- is stable in the presence of acid;
- binds with a slow dissociation rate to both active and inactive proton pumps; and
- has a long plasma half-life that replenishes the drug at the site of action over the course of the day.

These factors have enabled vonoprazan to demonstrate rapid and potent acid suppression in human subjects two hours after oral dosing and maintain target acid inhibition over a 24-hour period. In contrast, PPIs require three to five days to reach steady state acid suppression and do not reliably maintain target acid inhibition over a 24-hour period. In addition, vonoprazan has been shown in human subjects to maintain approximately 10-to-100-fold better acid control compared to a PPI.

We believe that vonoprazan's anti-secretory profile may demonstrate clinically meaningful advantages over PPIs, such as:

- faster, more complete, and more durable healing of erosive esophagitis;
- faster, more complete, and more durable control of GERD symptoms;
- higher *H. pylori* eradication rates in combination with antibiotics compared to standard of care triple therapy and the potential for antibiotic-sparing dual therapy; and
- more flexible dosing, including dosing independent of food and time of day, and the potential for rapid symptom relief through on-demand dosing.

Vonoprazan has demonstrated clinical advantages over PPIs in erosive esophagitis and eradication of *H. pylori* infection in completed Phase 3 clinical trials conducted in Japan and other Asian countries.

**Erosive esophagitis.** In Phase 3 clinical trials in patients with erosive esophagitis, vonoprazan demonstrated non-inferiority to the PPI lansoprazole for both the healing and maintenance of healing of erosive esophagitis. In post hoc analyses, vonoprazan demonstrated faster and superior healing compared to lansoprazole in patients with more severe erosive esophagitis. After two weeks of treatment, 88% of erosive esophagitis patients with more severe disease were healed after treatment with vonoprazan versus 64% with lansoprazole ( $p=0.0008$ ). In the maintenance of healing, vonoprazan demonstrated lower recurrence rates of erosive esophagitis six months after treatment versus lansoprazole across all grades of severity of erosive esophagitis. Vonoprazan achieved a 2% recurrence rate compared to 17% for lansoprazole ( $p<0.0001$ ).

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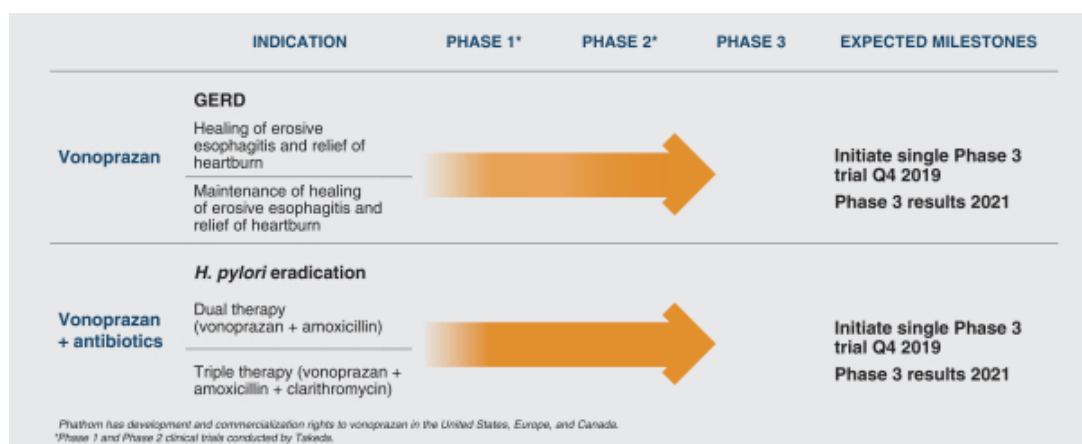
**H. pylori.** In patients with *H. pylori* infection, vonoprazan in combination with the antibiotics clarithromycin and amoxicillin demonstrated a non-inferior eradication rate of 93% compared to 76% for lansoprazole in combination with clarithromycin and amoxicillin ( $p < 0.0001$ ) and was also superior in a post hoc analysis ( $p < 0.0001$ ). In patients who failed first line therapy, vonoprazan in combination with the antibiotics metronidazole and amoxicillin demonstrated a 98% eradication rate as second line therapy.

We have used this clinical experience to inform our planned Phase 3 clinical development program in these indications.

Our company was founded as a collaboration between Takeda and Frazier Healthcare Partners. Our founders and management team have deep expertise in developing GI therapeutics, including anti-secretory agents, and direct experience developing vonoprazan at Takeda. Our Chairman, Tadataka (Tachi) Yamada, M.D., is the former Chief Medical Officer and Chief Scientific Officer at Takeda. He is the former President of the American Gastroenterological Association and former Chief of Gastroenterology and Internal Medicine at the University of Michigan. Our Chief Executive Officer, David Socks, is the former Chief Executive Officer of Outpost Medicine, LLC, a GI and urology focused company. Mr. Socks was also President and Chief Operating Officer of Incline Therapeutics Inc. through its sale to the Medicines Company in 2013, and Senior Vice President, Corporate Development and Strategy of Cadence Pharmaceuticals, Inc. Azmi Nabulsi, M.D., M.P.H., our Chief Operating Officer, is the former Deputy Chief Medical and Scientific Officer at Takeda. Our Head of Regulatory, Tom Harris, is the former Senior Vice President and Head of Global Regulatory at Takeda. Dr. Yamada, Dr. Nabulsi, and Mr. Harris were extensively involved with the development of vonoprazan at Takeda.

## Our Pipeline

The following chart summarizes our current development programs.



## Our Strategy

Our goal is to be a leader in the development and commercialization of novel treatments for GI diseases. Our strategy is initially focused on developing and commercializing vonoprazan as a potential first-in-class P-CAB in the United States, Europe, and Canada for the treatment of acid-related GI diseases. Key elements of this strategy include:

- **Rapidly advance the clinical development of vonoprazan in erosive esophagitis and H. pylori infection and seek marketing approval.** We believe we can leverage the existing



clinical data and post-marketing experience, as well as our management team's experience with vonoprazan, to rapidly advance vonoprazan through our planned pivotal Phase 3 clinical trials. Based on our recently completed meeting with the FDA, we plan to submit investigational new drug, or IND, applications for vonoprazan to the FDA, and following their acceptance, plan to initiate a single pivotal Phase 3 clinical trial of vonoprazan in each of erosive esophagitis and *H. pylori* infection beginning in the fourth quarter of 2019. We expect to report top-line data from both trials in 2021, and if successful, file regulatory submissions for marketing approval for the treatment of *H. pylori* infection in 2021 and for erosive esophagitis in 2022.

- **Commercialize vonoprazan in the United States.** We plan to independently commercialize vonoprazan, if approved, in the United States by building a leading specialty gastroenterology commercial infrastructure to support the adoption of vonoprazan. We believe we can successfully launch vonoprazan in the United States with a focused specialty sales force targeting high prescribers of PPIs, particularly gastroenterologists. We believe we have an opportunity to achieve significant share of voice and exposure to physicians given the scarcity of actively marketed anti-secretory medicines. Given the limitations of PPIs and current unmet need, we believe the commercial opportunity for vonoprazan is substantial.
- **Seek commercial partnerships to maximize the vonoprazan opportunity outside of the United States.** We believe there is a significant commercial opportunity for vonoprazan in Europe and Canada. To address these markets, we plan to seek one or more partners with existing commercial infrastructure and expertise in these markets. We believe this strategy will allow us to realize the value of the market opportunity in Europe and Canada while focusing our resources on the U.S. market.
- **Expand the development of vonoprazan across indications, dosing regimens, and alternative formulations and packaging.** We plan to pursue vonoprazan lifecycle extension strategies in areas with clear unmet need, clinical rationale, and commercial justification. These strategies may include: (i) additional indications, including treatment of gastric ulcers and duodenal ulcers, Barrett's esophagus, and eosinophilic esophagitis; (ii) flexible dosing regimens, such as on-demand therapy for symptom relief of GERD; and (iii) alternative formulations and packaging, such as orally disintegrating tablets and other oral dosage forms for patients with difficulty swallowing, an intravenous formulation for in-hospital applications, and pre-packaged convenience packs for the eradication of *H. pylori* infection. Additionally, we believe that vonoprazan has the ideal profile for an OTC product, including the potential for on-demand symptom relief and a well-tolerated safety profile.
- **In-license or acquire additional clinical or commercial stage product candidates for the treatment of GI diseases in a capital efficient manner.** We intend to take advantage of our management team's GI expertise to opportunistically in-license or acquire additional innovative therapies for diseases treated by gastroenterologists. We plan to leverage our development and planned commercial infrastructure to support multiple assets targeting GI indications.

## Acid-Related GI Diseases

### Overview

Gastric acid is a digestive fluid formed in the stomach. The highly acidic environment of the stomach causes the unfolding, or denaturing, of food proteins that are subsequently broken down by gastric enzymes. Gastric acid is secreted by the hydrogen potassium ATPase enzyme, which is known as the proton pump. Proton pumps are expressed on the channeled surfaces, or canaliculi, of parietal cells in the stomach, which secrete acid. Proton pumps are continuously synthesized and switch between active and inactive states in response to various stimuli, such as food. When activated, proton pumps increase acid secretion.

GI diseases where treatment is related to acid control, such as GERD, peptic ulcer disease, Zollinger Ellison syndrome, and *H. pylori* infection, are significant medical problems because of their high prevalence, chronic nature and clinical sequelae. GERD results from the effects of acid on compromised mucosal defenses in the gastrointestinal tract. The reflux of gastric acid into the esophagus produces frequent and/or severe heartburn, indigestion, and reflux symptoms. Chronic GERD may damage esophageal tissue and progress to more severe diseases including erosive esophagitis, Barrett's esophagus, and esophageal cancer. GERD and related diseases are associated with impaired quality of life and substantial costs to the healthcare system given their chronic nature and sequelae. In *H. pylori* infection, gastric acid limits the effectiveness of antibiotics used to eradicate infection. Chronic *H. pylori* infection can lead to dyspepsia, peptic ulcer disease, gastric cancer, and mucosa-associated lymphoid tissue (MALT) lymphoma.

### Prevalence

The prevalence of GI diseases is high. Approximately 20% to 40% of Western adults report chronic heartburn or regurgitation symptoms potentially related to GERD. We estimate that there are approximately 65 million individuals in the United States and 50 million individuals in the EU5 with GERD. In the United States, GERD is the most common gastroenterology-related outpatient diagnosis. Additionally, approximately 35% of the U.S. population and 45% of the EU5 population are infected with *H. pylori*. We estimate that there are approximately 115 million individuals in the United States and 145 million individuals in the EU5 infected with *H. pylori*.

#### Prevalence of GERD and *H. pylori* Infection

	GERD		<i>H. pylori</i> Infection	
	Prevalence	Estimated Population	Prevalence	Estimated Population
United States	20%	65 million	35%	115 million
EU5	15%	50 million	45%	145 million

### Treatments

Treatments of acid-related GI diseases aim to provide relief of acute symptoms, healing of damaged tissue, and prevention of long-term clinical sequelae associated with chronic acid exposure. Gastric acidity is measured by the pH scale, a logarithmic scale where 7.0 describes a neutral state and lower levels indicate a higher level of acidity. The pH of the stomach typically ranges from 1.5 to 3.5. In patients with acid-related GI diseases, increasing gastric pH has been shown to improve mucosal healing rates and provide more rapid symptom relief for patients. For example, the duration of time that intra-gastric acidity is greater than pH 3.0 correlates with the healing of duodenal and gastric ulcers, and pH greater than 4.0 is correlated with the healing of erosive esophagitis. Similarly, in patients with *H. pylori* infection, a more neutral gastric pH of 5.0 to 7.6 preserves antibiotic function and is optimal for successful eradication.

Drug-induced gastric acid suppression is a key component of the management of acid-related GI diseases. Three classes of drugs with distinct mechanisms of action are principally used for treatment in the United States and Europe: antacids, histamine receptor antagonists, or H2RAs, and PPIs.

### *Antacids*

Antacids, first commercially available in the 1930s, directly neutralize gastric acid to raise intra-gastric pH and can alleviate intermittent, mild symptoms of acid-related GI diseases, such as heartburn, but they are effective for relatively short periods of time and require frequent administrations per day. In addition, antacids do not significantly help heal or prevent complications of acid-related diseases. Antacids include commonly-known OTC products, such as Alka-Seltzer, Pepto-Bismol, Roloids, and TUMS.

### *Histamine Receptor Antagonists (H2RAs)*

H2RAs, first commercially available in the 1970s, decrease gastric acid secretion in order to raise gastric pH. H2RAs represented a dramatic improvement over antacids in the control of gastric acid and consequently in the management of acid-related GI diseases. H2RAs are also generally safe and well-tolerated. Among the H2RA class were the first commercial blockbuster drugs, Pepcid (famotidine), Tagamet (cimetidine), and Zantac (ranitidine). Zantac was the world's highest-selling prescription drug in the mid-1990s, with global sales of \$3.7 billion and U.S. sales of \$2.2 billion. Prior to the launch of generic H2RAs and increasing competition from PPIs, the H2RA class achieved sales of \$3.5 billion in the United States. H2RAs achieved commercial success despite clinical limitations, including unreliable 24-hour acid control, poor control of post-meal symptoms, and loss of efficacy over time.

### *Proton Pump Inhibitors (PPIs)*

PPIs, first commercially available in 1989, offered improved acid control over H2RAs. Pharmacodynamic data demonstrated that PPIs maintain gastric pH above target levels for a longer duration than H2RAs. A commonly used benchmark of anti-secretory activity is the percentage of time in a 24-hour period that gastric pH exceeds 4.0, which we refer to as time above pH 4.0, which ranges from 40% to 71% for PPIs versus 33% for H2RAs.

Given this improved pharmacodynamic profile, PPIs demonstrated improved clinical symptom relief and healing over H2RAs. In a meta-analysis of results from 33 randomized clinical trials with over 3,000 GERD patients, a reduction in symptoms was achieved in 83% of patients taking PPIs versus 60% of those on H2RAs. In a second meta-analysis, the eight-week healing rate in patients with erosive esophagitis was 82% for PPIs versus 52% for H2RAs.

The PPI class is currently the first-line treatment of acid-related GI diseases. Prior to the introduction and adoption of generic and OTC alternatives, annual PPI class sales reached approximately \$12.5 billion in the United States, and peak sales for individual brands were approximately \$3.7 billion for Prilosec, \$3.5 billion for Nexium, and \$3.4 billion for Prevacid. As recently as 2015, the last branded PPI, Dexilant (dexlansoprazole), reached approximately \$530 million in sales in the United States despite limited differentiation from other PPIs. While Dexilant demonstrated a modest improvement in time above pH 4.0 compared to other PPIs, the approved dose did not demonstrate consistent superiority in Phase 3 trials against other PPIs on the healing of erosive esophagitis and has not been tested against PPIs in other indications. We believe that the commercial success of Dexilant highlights the value to physicians and patients of even incremental improvements over other PPIs.

### PPI Limitations

While PPIs provide clinically meaningful symptom relief and healing for millions of patients suffering from acid-related GI diseases, they are inadequate for many patients. The suboptimal anti-secretory profile of PPIs results in slow onset of symptom relief, breakthrough nighttime or postprandial

heartburn, and treatment failure. Approximately 15% to 45% of GERD patients are inadequately treated with PPIs, experiencing persistent, troublesome symptoms, such as heartburn and regurgitation. In approximately two thirds of symptomatic GERD patients, reflux symptoms are not adequately controlled after the first dose of a PPI, and nearly 50% of patients still suffer from symptoms three days later. Given these limitations, more than 20% of GERD patients on PPI therapy take their PPI twice daily, which is not FDA approved, or purchase OTC heartburn treatments in addition to their prescription medicine. In a survey of approximately 1,000 GERD patients and 1,000 physicians, approximately one third of GERD patients reported persistent symptoms and were dissatisfied with PPI therapy and 35% of physicians perceived patients as somewhat satisfied to completely dissatisfied with PPI treatment.

In patients with more severe grades of erosive esophagitis, studies with PPIs have reported failure rates of healing of esophageal erosions exceeding 25%. Additionally, recurrence of erosions is common in healed erosive esophagitis patients receiving maintenance PPI therapy. One study reported recurrence in 15% to 23% of patients with less severe erosive esophagitis and 24% to 41% of patients with more severe erosive esophagitis. We believe that these limitations of PPIs are in part driven by their mechanism of action and pharmacokinetics.

## **Mechanistic Differences Between PPIs and Vonoprazan**

### ***PPIs***

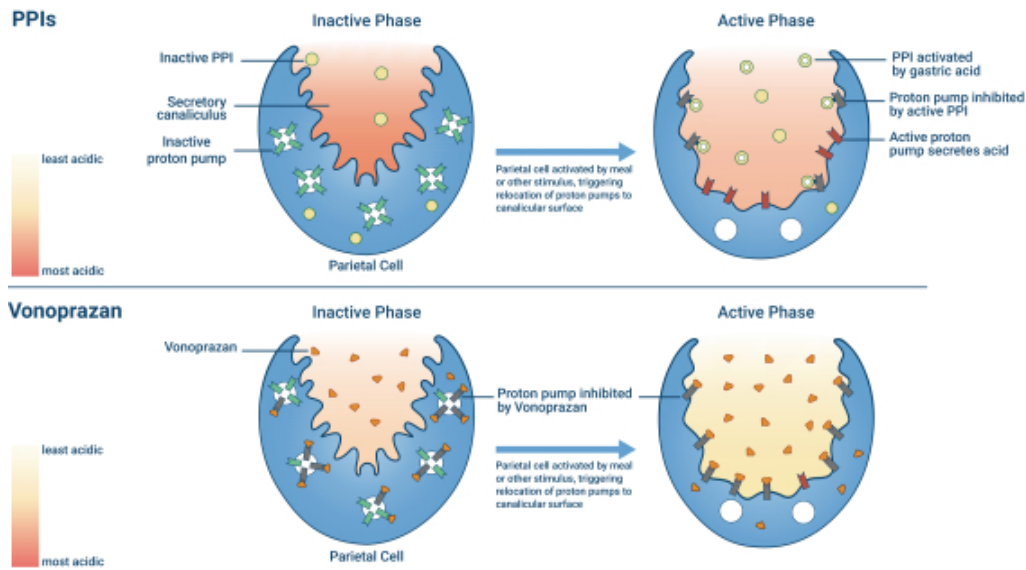
After oral dosing, PPIs reach the gastric parietal cells through the bloodstream. PPIs are prodrugs that are converted to their active form in the acidic environment of the secretory canaliculus of the parietal cell but degrade quickly because their active form is unstable in acid. For example, the half-life of omeprazole (Prilosec) is less than 10 minutes at pH 2.0. As shown in the figure below, the active form of a PPI blocks acid production by covalently binding to active proton pumps that have moved to the surface of the secretory canaliculi after activation of the parietal cell with stimuli, such as a meal. Because PPIs bind only to actively secreting pumps, it is generally recommended that they be administered 30 to 60 minutes before a meal to achieve maximal efficacy. Once covalently bound to the proton pumps, the active PPI molecule is no longer available to bind to newly synthesized or activated proton pumps. Furthermore, given the relatively short plasma half-life of most PPIs of one to two hours, resupply of additional PPI molecules from the bloodstream is limited, and newly activated pumps are not inhibited. Due to this profile, PPI dosing over several days is required to inhibit enough proton pumps to increase gastric pH to a clinically meaningful threshold, and PPIs have a limited window of efficacy leading to incomplete acid suppression over the 24-hour dosing interval. In addition, PPIs are primarily metabolized by CYP2C19, an enzyme which has significant interpatient metabolic variability based on genotype. As a result, PPI exposure levels in some patients may not achieve target levels, potentially reducing clinical efficacy.

### ***Vonoprazan***

Vonoprazan's differentiated mechanism of action has enabled it to achieve more rapid, potent, and durable anti-secretory effects than PPIs. As shown in the figure below, when vonoprazan reaches gastric parietal cells from the bloodstream, it accumulates in the secretory canaliculus where the proton pumps are present in their active state. In contrast to most PPIs, vonoprazan does not require gastric acid for activation, is stable in the presence of gastric acid, reversibly binds to proton pumps in both their inactive and active states, and remains in the secretory canaliculus where it continues to inhibit acid secretion over an extended period. Vonoprazan's prolonged effect is also maintained through a slow dissociation rate from the proton pumps and resupply from the bloodstream due to its seven-hour half-life. These characteristics allow vonoprazan to rapidly achieve target 24-hour acid suppression within two hours of a single dose, unlike PPIs that require three to five days to achieve stable acid

suppression. In addition, vonoprazan is primarily metabolized by CYP3A4/5, an enzyme which has less genetic variability than CYP2C19, and may exhibit more consistent activity than PPIs across U.S. and European populations.

**Mechanism of Action of PPIs and Vonoprazan**



The mechanistic and pharmacologic differences of PPIs and vonoprazan are summarized in the table below.

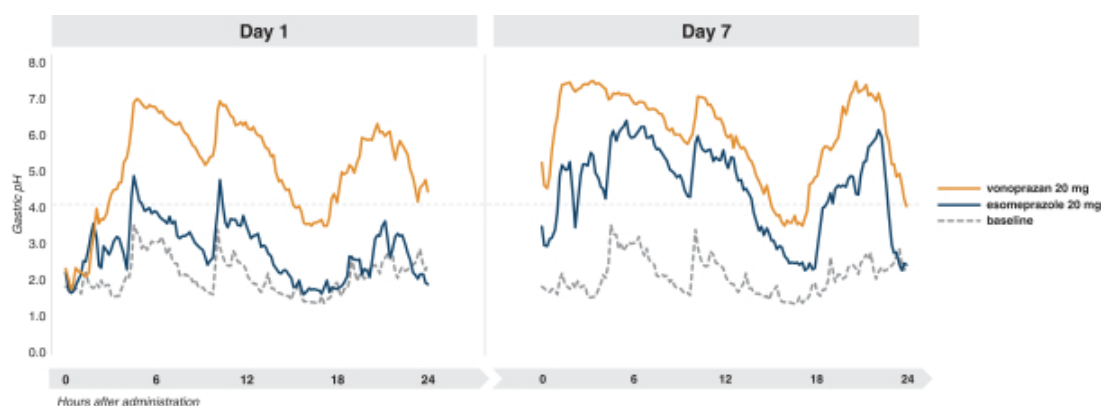
	PPIs	Vonoprazan
<b>Activation</b>	PPIs are prodrugs that require acid for activation yet are unstable in acidic conditions	No activation required and stable in acidic conditions
<b>Potency and durability of acid control</b>	Limited window of activity given short half-life of <2 hours, instability in acid conditions, and limited activity against newly synthesized and activated pumps throughout the day	Complete and durable effect given long half-life of 7 hours, concentration at the site of action, and activity against newly synthesized and activated pumps throughout the day
<b>Onset of action</b>	Only approximately 40% of pumps are inhibited after a single PPI dose; steady state anti-secretory effect and complete symptom relief is not achieved for 3 to 5 days	Rapidly achieves target 24-hour acid suppression within two hours of a single dose
<b>Dosing restrictions</b>	Generally administered 30 to 60 minutes before a meal in order to ensure appropriate drug levels in the gastric canaliculi when pumps are maximally activated	Dosing independent of meal timing because vonoprazan acts on both active and inactive proton pumps
<b>Inter-patient variability</b>	Metabolism via CYP2C19, subject to significant inter-patient variability	Metabolism via CYP3A4/5 rather than CYP2C19, subject to less inter-patient variability

**Vonoprazan Pharmacodynamics vs. PPIs**

Vonoprazan's more rapid, potent, and durable anti-secretory effects versus the PPI esomeprazole (Nexium) were demonstrated in a randomized, open-label, crossover clinical trial comparing 20 mg of once daily, or QD, vonoprazan to 20 mg QD of esomeprazole in 20 healthy volunteers. As shown below, vonoprazan achieved rapid and potent pH control on Day 1 relative to

esomeprazole (left). Vonoprazan maintained pH approximately 1 to 2 units higher than esomeprazole at Day 7 (right), which represents a 10-to-100-fold reduction in acidity.

**Improved Onset and Potency of pH Control of Vonoprazan vs. Esomeprazole at Day 1 and Day 7**



This improved potency and duration of pH control with vonoprazan, as measured by time above pH 4.0, was evident not only at Day 1, but also at Day 7 when esomeprazole had reached its steady-state (see table below).

**Improved Time Above pH 4.0 of Vonoprazan vs. Esomeprazole at Day 1 and Day 7**

	Time Above pH 4.0 (%)		
	Baseline	Day 1	Day 7
Vonoprazan 20 mg	11%	71%	86%
Esomeprazole 20 mg	11%	24%	61%

**Vonoprazan for the Potential Treatment of Acid-Related GI Diseases**

Given the shortcomings of PPI therapy, we believe that there is a significant unmet medical need for a safe and effective anti-secretory agent with rapid, potent, and durable activity. Vonoprazan was developed in markets outside of the United States by Takeda through an extensive clinical program, including 17 Phase 3 clinical trials. As of December 2018, 6,683 subjects were exposed to vonoprazan in completed and ongoing clinical trials. In head-to-head Phase 3 trials versus a PPI, vonoprazan demonstrated faster onset of healing in more severe erosive esophagitis patients, lower recurrence rates of erosions in erosive esophagitis patients across all levels of severity, and a superior eradication rate in combination with antibiotics in patients with *H. pylori* infection than PPI-based triple therapy. Vonoprazan received marketing approval in Japan in late 2014 and generated over \$500 million in net sales in its fourth full year on the market in Japan. Based on our recently completed meeting with the FDA, we plan to submit IND applications for vonoprazan to the FDA, and following their acceptance, plan to initiate a single pivotal Phase 3 clinical trial of vonoprazan in each of erosive esophagitis and *H. pylori* infection in the fourth quarter of 2019. We expect to report top-line data from both trials in 2021, and if successful, file regulatory submissions for marketing approval for the treatment of *H. pylori* infection in 2021 and for erosive esophagitis in 2022.

### Vonoprazan in GERD

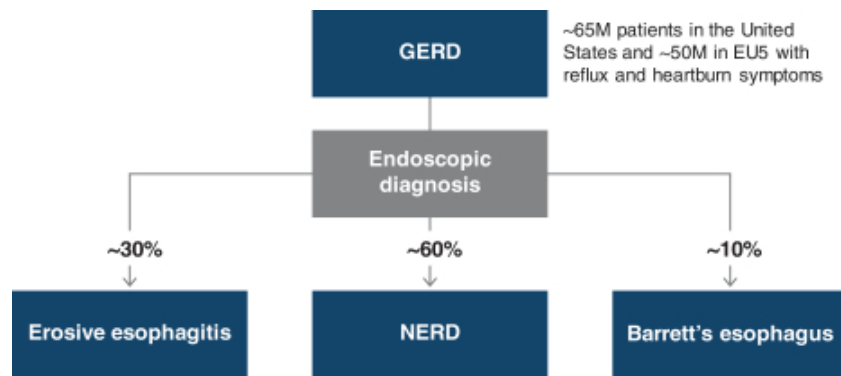
Based on the significant unmet medical need, previous Phase 3 trial results, and commercial potential, we have prioritized the development of vonoprazan in GERD in:

- the healing of erosive esophagitis and relief of heartburn; and
- the maintenance of healing of erosive esophagitis and relief of heartburn.

### GERD Disease Overview

GERD is one of the most prevalent diseases of any kind and is the most prevalent GI disease, affecting approximately 20% of the U.S. population and approximately 15% of the European population. We estimate there are approximately 65 million individuals with GERD in the United States and 50 million individuals with GERD in the EU5. GERD is a disease that develops when the reflux of acidic stomach contents into the esophagus causes troublesome symptoms and/or complications, and the term covers a spectrum of diseases, including erosive esophagitis, non-erosive reflux disease, and Barrett's esophagus. These diseases are detailed below:

- **Erosive esophagitis:** Approximately 30% of GERD patients have erosive esophagitis, which is classified by erosions in the gastric mucosa caused by acidic reflux of stomach contents into the esophagus. Erosive esophagitis is commonly graded by the Los Angeles classification system, which characterizes the extent of erosions in the esophagus and is graded on a scale of increasing severity from A to D, with D being the most severe. Approximately 10% to 20% of erosive esophagitis patients have the more severe Los Angeles Class C or D disease.
- **Non-erosive reflux disease (NERD):** Approximately 60% of GERD patients have NERD, which is classified by an endoscopically normal esophagus, but abnormal gastric acid exposure in the esophagus and persistent symptoms.
- **Barrett's esophagus:** Approximately 10% of GERD patients have Barrett's esophagus, which is classified by endoscopic and histological evidence of metaplasia or dysplasia in the mucosal cell lining in the lower portion of the esophagus; approximately 1% of patients annually progress to esophageal cancer.



GERD patients typically present with heartburn and reflux symptoms. Based on these symptoms, patients are typically treated first-line with PPIs prior to a diagnostic endoscopy for specific disease classification of erosive esophagitis, NERD or Barrett's esophagus. Clinical guidelines suggest that endoscopy only be performed in patients who continue to have symptoms despite a four- to-eight-week course of daily PPIs or have alarm symptoms, including GI bleeding, anemia, weight loss, chest pain, or difficult or painful swallowing. We believe that most patients are treated empirically based on symptoms rather than based on endoscopic characterization of disease.

### **GERD Treatment Paradigm**

Approximately 80% of GERD patients are pharmacologically treated with prescription or OTC medications. PPIs are currently the most effective anti-secretory agents available in the United States and Europe for relieving GERD symptoms and healing erosions in gastric mucosa. Our market research suggests that approximately 80% of patients who are pharmacologically treated receive PPIs, and approximately 75% of PPI use is prescription rather than OTC. The majority of PPI use is chronic, with more than 70% of patients prescribed PPIs for daily use. According to IQVIA NDTI, there were approximately 120 million oral PPI prescriptions written in the United States and 6.1 billion doses prescribed for the 12 months ended May 31, 2019.

While PPIs provide clinically meaningful symptom relief and healing for millions of patients suffering from acid-related GI diseases, they are inadequate for many patients. The suboptimal anti-secretory profile of PPIs results in slow onset of symptom relief, breakthrough nighttime or postprandial heartburn, and treatment failure. Approximately 15% to 45% of GERD patients are inadequately treated with PPIs, experiencing persistent, troublesome symptoms, such as heartburn and regurgitation. In approximately two thirds of symptomatic GERD patients, reflux symptoms are not adequately controlled after the first dose of a PPI, and nearly 50% of patients still suffer from symptoms three days later. Given these limitations, more than 20% of GERD patients on PPI therapy are taking their PPI twice daily, which is not FDA approved, or purchasing OTC heartburn treatments in addition to their prescription medicine. In a survey of approximately 1,000 GERD patients and 1,000 physicians, approximately one-third of GERD patients reported persistent symptoms and were dissatisfied with PPI therapy and 35% of physicians perceived patients as somewhat satisfied to completely dissatisfied with PPI treatment.

There are few treatment options for patients who are inadequately managed on PPI therapy. Some patients who are unsatisfied with therapy on a given PPI will switch to a different PPI despite limited evidence of differentiated outcomes. Even though safety and efficacy of twice daily dosing of PPIs has not been evaluated in large controlled clinical studies and is not included on the label for any PPIs, some physicians and patients resort to this dosing regimen if dissatisfied on once daily PPIs. A limited number of patients proceed to a surgical procedure, such as Nissen fundoplication. However, this procedure results in postoperative morbidity of 5% to 20%, as well as a two- to six-week recovery period and a median hospital stay of two days.

Vonoprazan has the potential to be the first gastric anti-secretory agent from a novel class approved in the United States, Europe, or Canada in over 30 years, and we believe it would be a clinically meaningful alternative to PPIs.

### **Clinical Data for Vonoprazan in GERD**

Four Phase 3 clinical trials have been completed comparing vonoprazan to PPIs in erosive esophagitis: a healing trial in Japan; a maintenance of healing trial in Japan; a healing trial in Asia (China, Taiwan, and Korea); and a maintenance of healing trial in Asia. In addition to these Phase 3 trials, several published investigator-sponsored studies have compared vonoprazan to PPIs across dosing regimens and endpoints. We believe that the totality of these data suggests that vonoprazan has an improved clinical profile over PPIs. Results of these clinical trials are summarized below.

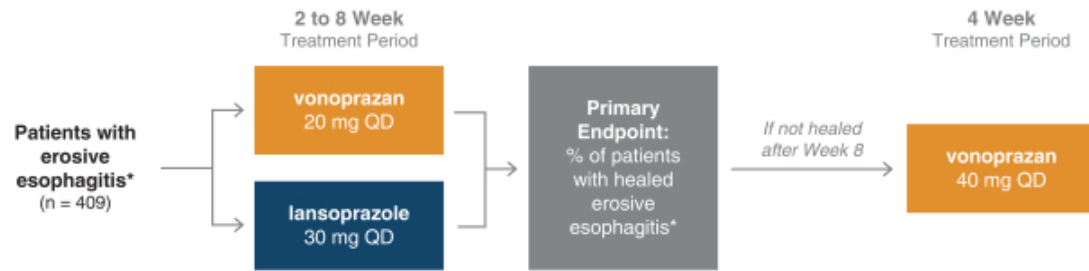
#### *Healing of Erosive Esophagitis Clinical Trials in Japan and Asia*

In a Phase 3 multicenter, randomized, double-blind, parallel group trial, 409 patients in Japan with endoscopically confirmed erosive esophagitis were randomized to receive vonoprazan 20 mg QD or lansoprazole 30 mg QD for up to eight weeks. The primary endpoint was the non-inferiority of the



percent of patients with healed erosive esophagitis up to Week 8, as assessed by endoscopy. Non-inferiority is intended to show that the effect of a new treatment is not worse than the active control by more than a specified margin, while superiority is intended to show that one treatment is more effective than a comparator by any margin.

**Design of Japan Phase 3 Clinical Trial for the Healing of Erosive Esophagitis**

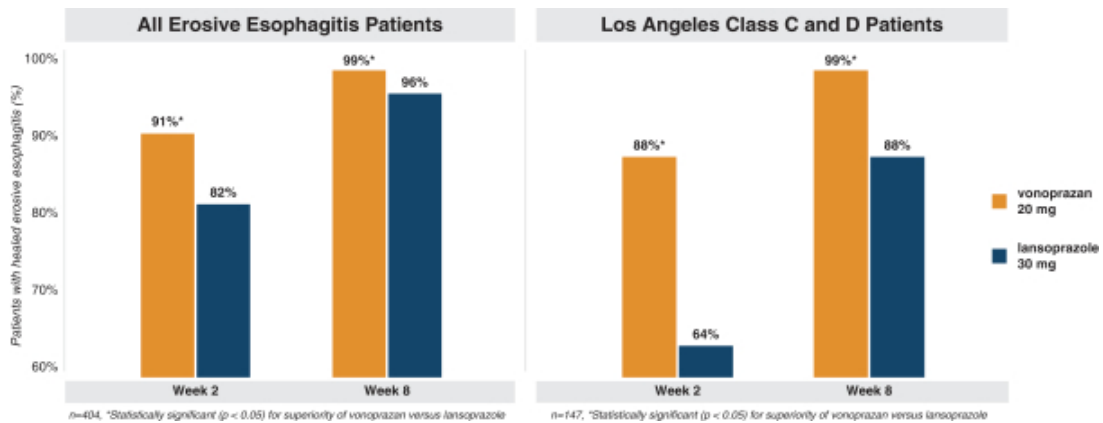


\*Confirmed by endoscopy

Vonoprazan achieved the primary endpoint of non-inferiority versus lansoprazole on the percent of patients with healed erosive esophagitis up to Week 8 (99% vs. 96%,  $p < 0.0001$ ). Further, a post hoc analysis demonstrated that vonoprazan was superior to lansoprazole on the percent of patients with healed erosive esophagitis up to Week 8 ( $p = 0.0337$ ). In the subset of 147 patients with more severe erosive esophagitis of Los Angeles Class C or D, vonoprazan healing was also shown to be superior (99% vs. 88%,  $p = 0.0082$ ). We believe this result is due to the improved acid control of vonoprazan over lansoprazole, and we believe lansoprazole is representative of the PPI class.

Vonoprazan further demonstrated a more rapid clinical effect versus lansoprazole with a superior healing rate at Week 2 (91% vs. 82%,  $p < 0.0001$  for non-inferiority and  $p = 0.0132$  in a post hoc superiority analysis). The treatment effect was more pronounced in the more severe patients with Los Angeles Class C or D disease (88% vs. 64%,  $p = 0.0008$  for superiority). Of the seven patients who failed lansoprazole treatment and continued into the additional treatment period, six healed with four weeks of treatment of 40 mg vonoprazan QD.

**Results of Japan Phase 3 Clinical Trial in the Healing of Erosive Esophagitis**



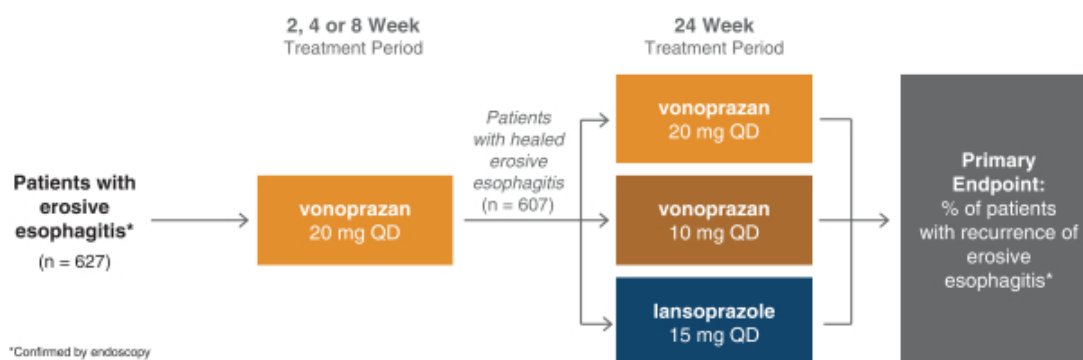
In addition, in the lead-in period of the Japan Phase 3 maintenance of healing clinical trial discussed below, patients were treated with vonoprazan 20 mg for up to eight weeks before proceeding into treatment for the maintenance of healing of erosive esophagitis. The healing rate at Week 2 and through Week 8 during this lead-in healing period was 91% and 99%, respectively.

In another multicenter, randomized, double-blind, parallel group Phase 3 clinical trial in China, Taiwan, Korea, and Malaysia, 481 patients with endoscopically confirmed erosive esophagitis were randomized to receive vonoprazan 20 mg QD or lansoprazole 30 mg QD for eight weeks. Vonoprazan achieved the primary endpoint of non-inferiority versus lansoprazole on the percent of patients with healed erosive esophagitis up to Week 8, 92% and 91%, respectively (95% Confidence Interval of treatment difference of -3.8 to 6.1).

*Maintenance of Healing of Erosive Esophagitis Clinical Trials in Japan and Asia*

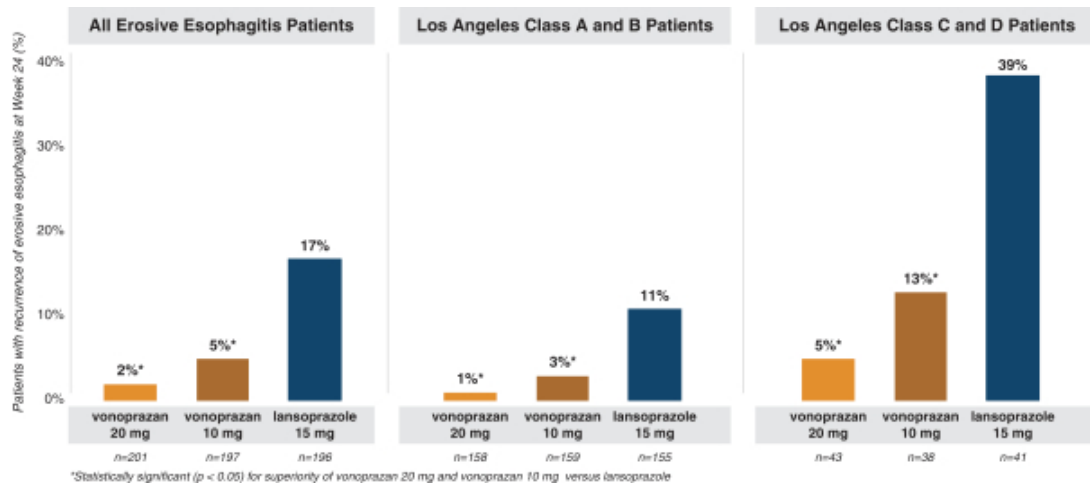
In a multicenter, randomized, double-blind, parallel-group Phase 3 clinical trial in Japan, 627 patients with erosive esophagitis were treated with vonoprazan 20 mg QD for two, four, or eight weeks. After this lead-in period, a total of 607 patients with healed erosive esophagitis, of whom 124 had Los Angeles Class C or D disease, were randomized to receive vonoprazan 10 mg QD, vonoprazan 20 mg QD, or lansoprazole 15 mg QD for 24 weeks. The primary endpoint was the percent of patients with recurrence of erosive esophagitis at Week 24 as assessed by endoscopy.

**Design of Japan Phase 3 Clinical Trial in Maintenance of Healing of Erosive Esophagitis**



Vonoprazan achieved the primary endpoint of non-inferiority versus lansoprazole on the percent of patients with recurrence of erosive esophagitis during the 24-week maintenance period. Patients on lansoprazole had a 17% recurrence rate of erosive esophagitis after 24 weeks of daily treatment, versus 5% for patients on vonoprazan 10 mg and 2% for patients on vonoprazan 20 mg ( $p < 0.0001$  for non-inferiority of both vonoprazan doses vs. lansoprazole). Both vonoprazan doses were superior to lansoprazole in a post hoc analysis ( $p = 0.0002$  for vonoprazan 10 mg and  $p < 0.0001$  for vonoprazan 20 mg). As shown below, the superiority of each dose of vonoprazan to lansoprazole was demonstrated in both Los Angeles Class A and B patients, as well as the more severe Los Angeles Class C and D patients. We believe this result demonstrates the improved potency and durability of vonoprazan versus lansoprazole in all patients with erosive esophagitis.

**Results of Japan Phase 3 Clinical Trial in Maintenance of Healing of Erosive Esophagitis**

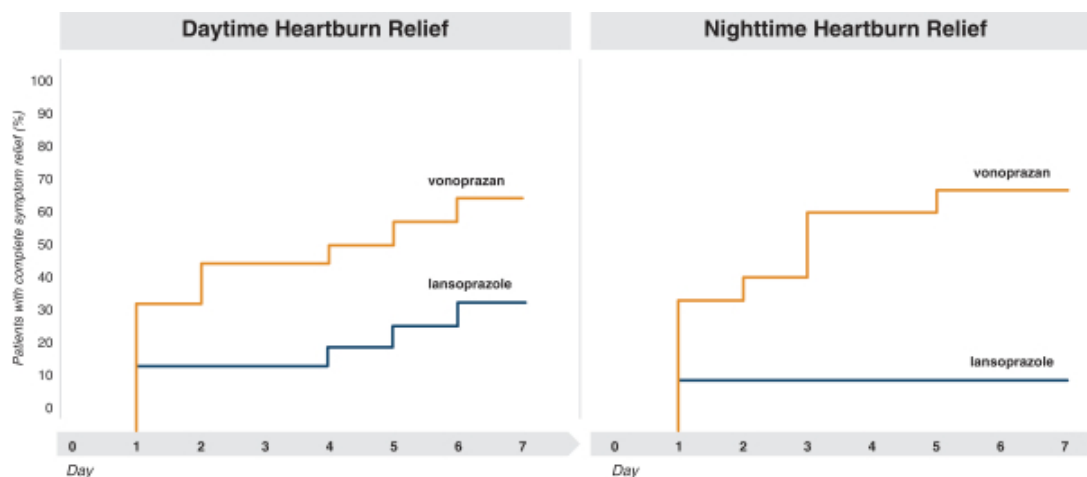


A second multicenter, randomized, double-blind, parallel group Phase 3 clinical trial was conducted in China, Taiwan, and Korea in 703 patients with healed erosive esophagitis, who were randomized to receive vonoprazan 20 mg QD, vonoprazan 10 mg QD, or lansoprazole 15 mg QD for 24 weeks. This trial has been completed, but final results are not yet available.

**Symptom Relief**

We believe the rapid pharmacodynamic effects of vonoprazan may provide complete and sustained heartburn relief more quickly compared to PPIs. A double-blind, randomized, investigator-sponsored clinical trial in 32 patients with erosive esophagitis compared the effects of vonoprazan 20 mg and lansoprazole 30 mg on the time to achieve complete heartburn relief, defined as seven days without heartburn symptoms. Vonoprazan demonstrated a faster time to complete heartburn relief than lansoprazole, and this complete relief was most pronounced for nighttime heartburn. The results of the trial are summarized below. We plan to evaluate a similar endpoint in our planned Phase 3 clinical trial.

### Faster Onset and Higher Rate of Complete Heartburn Relief



#### On-Demand Dosing

We believe the rapid onset of action of vonoprazan may also enable on-demand, or as needed, use for the relief of symptoms as an alternative to chronic daily treatment. In two open-label, investigator-sponsored clinical trials in Japan, one in erosive esophagitis and a second in NERD, the effectiveness of vonoprazan as an on-demand therapy was compared to that of daily PPI therapy with a number of different PPIs. In both clinical trials, patients utilized approximately 80% fewer doses of vonoprazan compared to PPIs but demonstrated similar levels of patient satisfaction.

#### Our Erosive Esophagitis Phase 3 Program

We plan to conduct a single Phase 3 clinical trial of vonoprazan to assess the healing of erosive esophagitis and relief of heartburn, and the maintenance of healing of erosive esophagitis and relief of heartburn. We completed a meeting with the FDA in July 2019 to obtain feedback on the study design and plan to submit an IND to the FDA and, following acceptance, initiate the clinical trial in the fourth quarter of 2019.

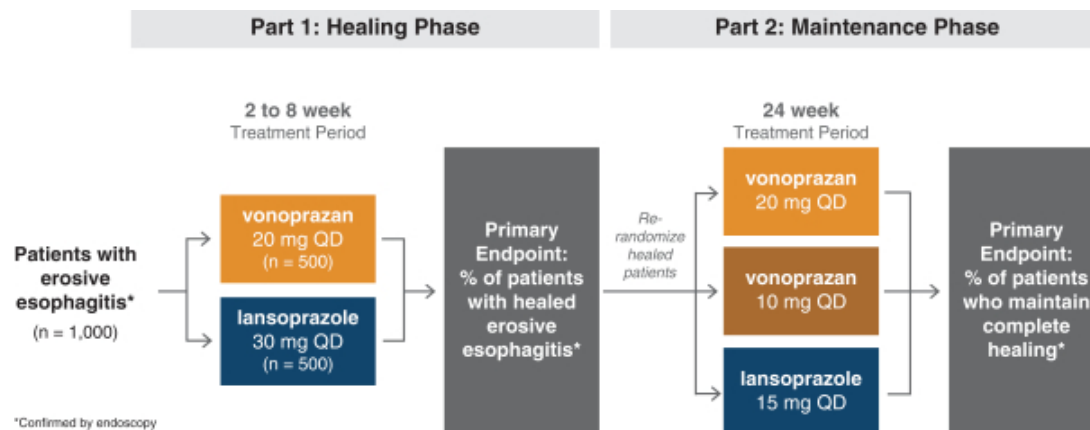
We plan to enroll approximately 1,000 patients with endoscopically confirmed erosive esophagitis in this clinical trial and enrich the clinical trial for more severe patients, targeting 30% Los Angeles Class C or D patients. The clinical trial will have both a healing phase and a maintenance phase. As patients will be re-randomized between the healing phase and the maintenance phase, each phase will be analyzed independently and have independent primary and secondary endpoints.

- Healing phase:** During the healing phase, patients will be randomized 1:1 to receive either vonoprazan 20 mg QD or lansoprazole 30 mg QD for up to eight weeks. The lansoprazole 30 mg QD dose is recommended in the FDA prescribing information for lansoprazole. The primary endpoint for this phase will be the percentage of patients with complete healing of erosive esophagitis by Week 8 as assessed by endoscopy with a primary analysis of non-inferiority. If non-inferiority is demonstrated, then an analysis for superiority will also be performed. Key secondary endpoints will include: the percentage of patients with complete healing of erosive esophagitis at Week 2; percentage of patients with Los Angeles Class C or D erosive esophagitis disease with complete healing at Week 2 and Week 8; percentage of patients with onset of complete heartburn relief by Day 3 of treatment; and the percentage of 24-hour heartburn free days over the healing phase.

- Maintenance phase:** Patients with complete healing of erosive esophagitis at Week 2 or Week 8 in the healing phase will be re-randomized 1:1:1 into the maintenance phase. During this phase, patients will receive either vonoprazan 10 mg QD, vonoprazan 20 mg QD, or lansoprazole 15 mg QD for 24 weeks. The lansoprazole 15 mg QD dose is recommended in the FDA prescribing information for the maintenance of healing indication. The primary endpoint for this phase will be the percent of patients who maintain complete healing after 24 weeks as assessed by endoscopy with a primary analysis of non-inferiority. If non-inferiority is demonstrated, then an analysis for superiority will also be performed. Key secondary endpoints will include the percentage of patients with Los Angeles Class C or D erosive esophagitis disease who maintain complete healing after 24 weeks and the percentage of 24-hour heartburn free days over the maintenance phase.

Our Phase 3 trial design is modeled after the successful Phase 3 clinical trials conducted in Japan and Asia with limited differences other than combining both the healing and maintenance of erosive esophagitis into a single study. In Japan and Asia, separate clinical trials were conducted for each of these indications. We believe we can simplify patient recruitment by conducting a single clinical trial and re-randomizing patients between phases.

### Design for Planned Phase 3 Erosive Esophagitis Clinical Trial



We expect to report top-line data from this trial in 2021 and, if successful, file a regulatory submission for marketing approval in 2022.

### Vonoprazan in Combination with Antibiotics for the Eradication of *H. pylori* Infection

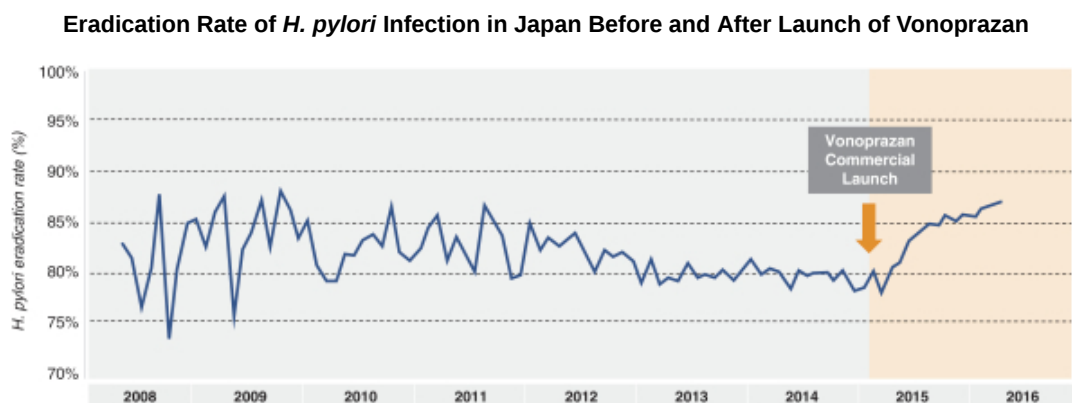
#### Disease Burden and Outcomes

*H. pylori* is a bacterial pathogen that infects approximately 35% of the U.S. population and 45% of the EU5 population. We estimate that there are approximately 115 million individuals in the United States and 145 million individuals in the EU5 infected with *H. pylori*, and we believe there are approximately 2.5 million patients treated for *H. pylori* infection in the United States each year. As a result of the chronic inflammation induced by *H. pylori* infection, approximately 20% of infected patients develop a range of pathologies including dyspepsia, peptic ulcer disease, gastric cancer, and mucosa-associated lymphoid tissue (MALT) lymphoma. Gastric cancer is the third most common cause of cancer-related death worldwide, and over 80% of gastric cancers are attributed to *H. pylori* infection. Globally there are more than one million new cases of gastric cancer and approximately 782,000

deaths each year. Eradication of *H. pylori* infection has been proven to reduce the incidence of gastric cancer, and the American College of Gastroenterologists, or ACG, guidelines recommend treatment for all patients diagnosed with *H. pylori* infection.

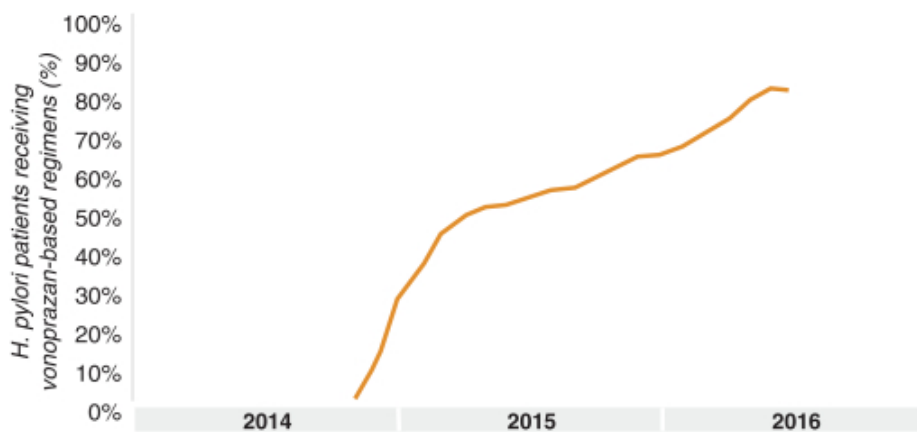
*H. pylori* eradication rates have fallen from >90% in the 1990s to current rates of <80% due to increasing antibiotic resistance. In 2017, the World Health Organization (WHO) listed *H. pylori* among the 16 antibiotic-resistant bacteria that pose the greatest threat to human health and designated *H. pylori* as a Class 1 carcinogen, meaning that it is a definite known cause of cancer. In 2014, the FDA added *H. pylori* to the agency's list of qualifying pathogens that have the potential to pose a serious threat to public health under the Generating Antibiotic Incentives Now (GAIN) Act. We believe that vonoprazan-based treatment regimens have the potential to restore eradication rates to greater than 90% in the United States and Europe given the clinical and post-marketing experience in the Japanese market.

A recent study compiled real-world health insurance claims data in Japan from 2008 to 2016 for *H. pylori* eradication. Prior to vonoprazan's approval in late 2014, the *H. pylori* eradication rate across Japan fell to below 80% as shown in the figure below. Approximately one year after vonoprazan's launch, the eradication rate increased to greater than 85%. From January 2015 to March 2016, the eradication rate with PPI-containing regimens in Japan was between 78% and 82% while the eradication rate with vonoprazan-containing regimens was 91% across all claims in this analysis.



In Japan, vonoprazan-containing eradication regimens have become the most common first line treatment. One-year post launch, approximately 80% of all treated *H. pylori*-infected patients received vonoprazan-based regimens as shown below.

**Percentage of Japanese Patients on Vonoprazan-based *H. pylori* Eradication Therapy**



**Current Treatment Paradigm in the United States and Europe**

The ACG treatment guidelines for *H. pylori* infection recommend using PPIs in conjunction with antibiotics to improve antibiotic efficacy against *H. pylori* infection. The use of anti-secretory agents enhances the effect of antibiotics in two ways. First, anti-secretory agents increase gastric pH, which in turn increases the stability of the antibiotics. For example, amoxicillin and clarithromycin are chemically unstable at the low pH typically found in the human stomach. Second, several antibiotics, including amoxicillin and clarithromycin, are most potent against *H. pylori* at the time of maximum bacterial replication, which occurs at pH 6.0 to 7.0. *H. pylori* is in a dormant state at lower pH values, which reduces the effectiveness of the antibiotics.

The table below shows the minimum inhibitory concentration of antibiotic required to eradicate 90% of *H. pylori in vitro*, or MIC<sub>90</sub>. As pH increases, the amount of antibiotic required for 90% eradication decreases substantially.

***H. pylori* MIC<sub>90</sub> Values as a Function of pH**

	MIC <sub>90</sub> (mg/L)		
	pH 7.5	pH 6.0	pH 5.5
Ampicillin	0.06	0.25	0.5
Clarithromycin	0.03	0.06	0.25

A triple therapy regimen (PPI, clarithromycin, and either amoxicillin or metronidazole) is most commonly used in clinical practice for the first-line treatment of *H. pylori* infection. However, *H. pylori* eradication rates with PPI triple therapy have fallen from >90% in the 1990s to current levels of <80%, primarily due to increased resistance of *H. pylori* to clarithromycin and metronidazole. A recent meta-analysis indicates that U.S. resistance rates measured from 2012 to 2016 were 20% for clarithromycin, 29% for metronidazole, and 19% for levofloxacin. These figures represent a marked increase from 2009 to 2011 for both clarithromycin and metronidazole, for which resistance was 9% for clarithromycin, 21% for metronidazole, and 11% for levofloxacin. *H. pylori* resistance to amoxicillin remains low

despite its use in most triple therapy regimens; resistance is generally <2% among isolates in the United States and Europe. There is a similar trend of increasing resistance to key antibiotics in Europe.

Given the declining eradication rates for *H. pylori*, quadruple therapy is recommended as first-line treatment in areas with known high rates of clarithromycin or metronidazole resistance. However, regimens with multiple drugs dosed at multiple times throughout the day can create compliance and tolerability issues for patients. Further, geographic patterns of resistance in the United States are poorly understood and treatment is largely empiric, with susceptibility testing rarely conducted prior to first-line treatment. As such, we believe there is a clear need for simpler and more effective first-line treatment options. Vonoprazan raises the pH more rapidly and to a greater extent than PPIs, and we believe that this improved acid control will translate to improved *H. pylori* eradication rates, including in those patients with antibiotic resistant *H. pylori* infection.

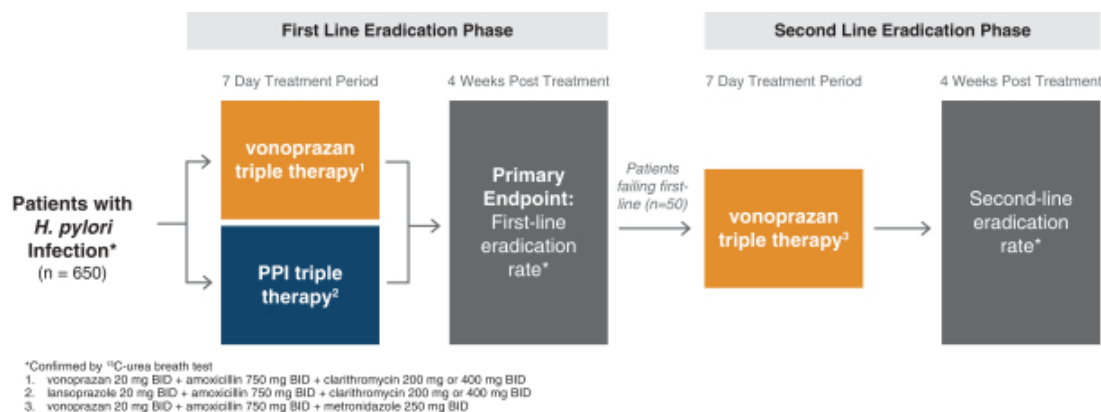
**Phase 3 Clinical Trial in Japan of Vonoprazan in Combination with Antibiotics to Treat *H. pylori* Infection**

A randomized, double-blind, multicenter Phase 3 clinical trial in *H. pylori*-positive patients was completed in Japan. Patients with *H. pylori* infection and a history of gastric or duodenal ulcer who had not previously received *H. pylori* eradication treatment were eligible for inclusion in the clinical trial. A total of 650 patients were randomized to receive seven days of:

- **vonoprazan triple therapy:** vonoprazan 20 mg twice daily, or BID, amoxicillin 750 mg BID, and clarithromycin (200 mg or 400 mg) BID; or
- **lansoprazole triple therapy:** lansoprazole 30 mg BID, amoxicillin 750 mg BID, and clarithromycin (200 mg or 400 mg) BID.

Patients who did not achieve *H. pylori* eradication after first-line treatment received a second-line regimen of vonoprazan 20 mg BID, amoxicillin 750 mg BID, and metronidazole 250 mg BID for seven days.

**Design of Japan Phase 3 *H. pylori* Eradication Clinical Trial**

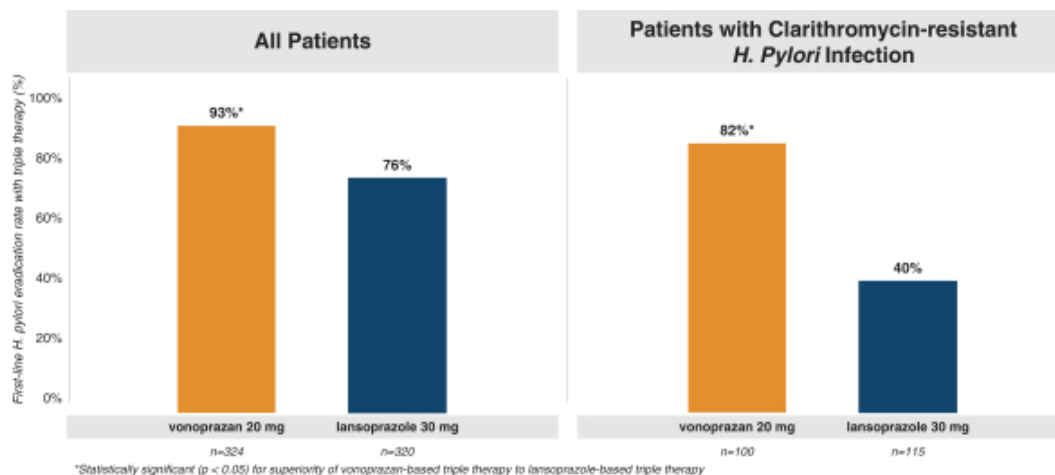


The primary endpoint of the clinical trial was confirmed *H. pylori* eradication determined by <sup>13</sup>C-urea breath test, a standard test for the diagnosis of *H. pylori*, four weeks after the completion of treatment. The primary analysis was non-inferiority, and key secondary endpoints included the second line eradication rate and eradication rate in antibiotic-resistant subgroups.



Vonoprazan-based triple therapy demonstrated a non-inferior eradication rate of 93% compared to 76% for lansoprazole-based triple therapy ( $p < 0.0001$ ). Post hoc analyses indicated that vonoprazan-based triple therapy was superior to lansoprazole-based triple therapy ( $p < 0.0001$ ). Patients who were not eradicated on vonoprazan-based triple therapy or lansoprazole-based triple therapy were treated with a triple therapy regimen of vonoprazan, amoxicillin, and metronidazole. In this second-line setting, the *H. pylori* eradication rate with vonoprazan triple therapy was 98%. Across first- and second-line patients, the *H. pylori* eradication rate in clarithromycin resistant strains was higher with vonoprazan-based triple therapy (82%) than with lansoprazole-based triple therapy (40%) as shown below. We believe that this result is significant, as *H. pylori* antibiotic resistance testing is rare in the United States, and *H. pylori* treatment is generally empiric.

### Results of Japan Phase 3 Clinical Trial in the Eradication of *H. pylori* Infection



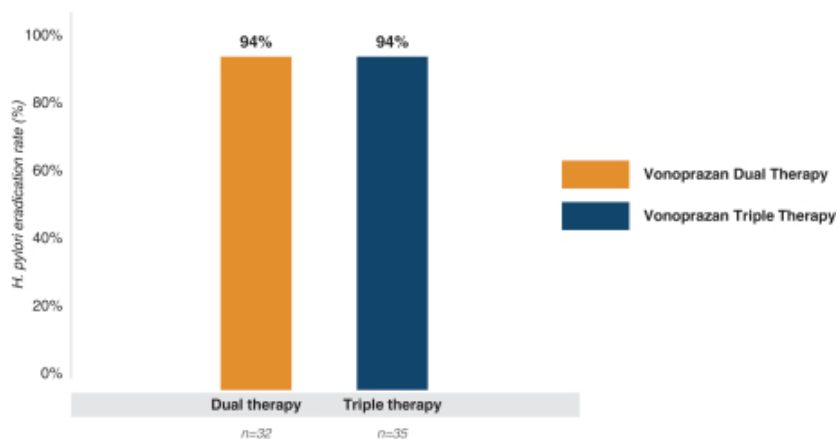
\*Statistically significant ( $p < 0.05$ ) for superiority of vonoprazan-based triple therapy to lansoprazole-based triple therapy

### Other Studies of Vonoprazan in *H. pylori* Eradication

A meta-analysis of 14 studies in Japan with over 14,636 patients found that the pooled eradication rates of vonoprazan-containing regimens were superior to those of PPI-containing regimens in a first-line setting (85% vs. 68%,  $p < 0.00001$ ). Subgroup analysis further indicated the superiority of vonoprazan in patients with either clarithromycin-resistant strains (82% vs. 41%,  $p < 0.00001$ ) or clarithromycin-susceptible strains (95% vs 90%,  $p = 0.006$ ). A second study retrospectively confirmed that empiric vonoprazan-based triple therapy was non-inferior to PPI-based triple therapy based on *H. pylori* antibiotic susceptibility testing.

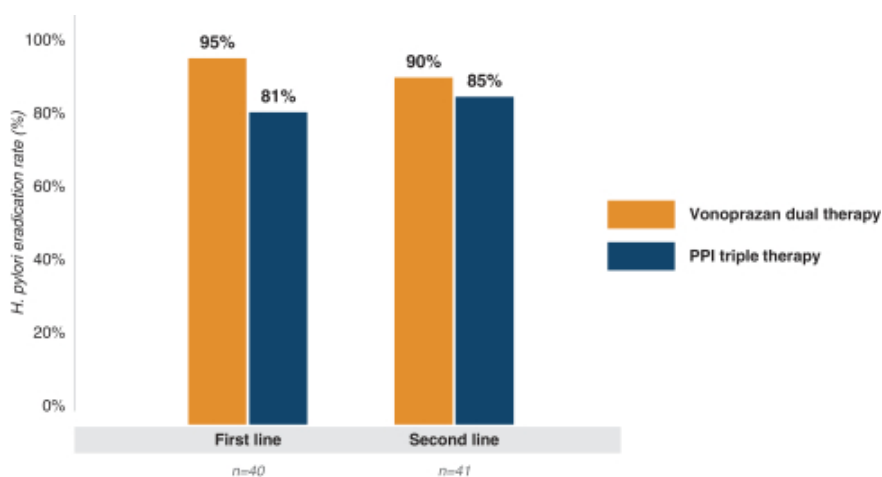
In addition to demonstrating superiority to PPIs in triple therapy regimens, vonoprazan was studied in a dual therapy regimen with amoxicillin in two investigator-initiated clinical trials in Japan. The first trial involving 67 Japanese patients assessed vonoprazan dual therapy (vonoprazan 20 mg BID in combination with amoxicillin 500 mg three times daily, or TID, for seven days) compared to vonoprazan triple therapy (vonoprazan 20 mg BID in combination with amoxicillin 750 mg BID and clarithromycin 200 mg BID for seven days). As shown below, vonoprazan dual therapy was similarly efficacious to vonoprazan triple therapy (eradication rates of 94% in both treatment arms).

### Results of Vonoprazan Dual and Triple Therapy in the Eradication of *H. pylori* Infection



A second clinical trial compared vonoprazan-based dual therapy to esomeprazole or rabeprazole PPI-based triple therapy. This clinical trial enrolled 81 Japanese patients including 40 first-line treatment patients and 41 second-line treatment patients who had failed standard therapy and compared vonoprazan dual therapy and PPI triple therapy in both first- and second-line therapy. Patients assigned to vonoprazan dual therapy were treated with vonoprazan 20 mg BID in combination with amoxicillin 500 mg TID for seven days. Patients assigned to PPI triple therapy were treated first-line with esomeprazole 20 mg or rabeprazole 10 mg BID, amoxicillin 750 mg BID, and clarithromycin 200 mg BID or second-line with esomeprazole 20 mg or rabeprazole 10 mg BID, amoxicillin 750 mg BID, and metronidazole 250 mg BID for seven days. As shown below, dual therapy with vonoprazan was efficacious in both first- and second-line therapy with eradication rates of 95% and 90%, respectively, versus 81% and 85% for PPI-based triple therapies.

### Results of Vonoprazan Dual and PPI Triple Therapy in the Eradication of *H. pylori* Infection



Antibiotic resistance is a significant clinical issue, and we believe that vonoprazan has the potential to address the growing resistance to *H. pylori* by eradicating infection after first-line of treatment. Vonoprazan dual therapy has further potential for improved convenience and compliance

over triple or quadruple therapy regimens, and importantly, spares the use of clarithromycin, metronidazole, and levofloxacin, representing an opportunity both for effective treatment and sound antibiotic stewardship through the avoidance of additional antibiotics to which *H. pylori* is known to acquire resistance. Less frequent use of these antibiotics, which have important roles aside from the treatment of *H. pylori* infection, may help to limit the spread of resistance among other pathogenic bacteria within populations.

### **Our *H. pylori* Phase 3 Program**

We plan to conduct a Phase 3 clinical trial of vonoprazan for the eradication of *H. pylori* infection. We completed a meeting with the FDA in July 2019 to obtain feedback on the study design and plan to submit two INDs to the FDA and, following acceptance, initiate the trial in the fourth quarter of 2019.

We plan to enroll approximately 975 patients with *H. pylori* infection as assessed by <sup>13</sup>C-urea breath test in this clinical trial. The clinical trial will compare vonoprazan dual therapy and vonoprazan triple therapy regimens each head-to-head with a standard of care lansoprazole triple therapy regimen. Patients will be randomized in a 1:1:1 manner into the three treatment arms as follows:

- **vonoprazan dual therapy:** vonoprazan 20 mg BID and amoxicillin 1 g TID for 14 days;
- **vonoprazan triple therapy:** vonoprazan 20 mg BID, amoxicillin 1 g BID and clarithromycin 500 mg BID for 14 days; and
- **PPI triple therapy:** lansoprazole 30 mg BID, amoxicillin 1 g BID and clarithromycin 500 mg BID for 14 days.

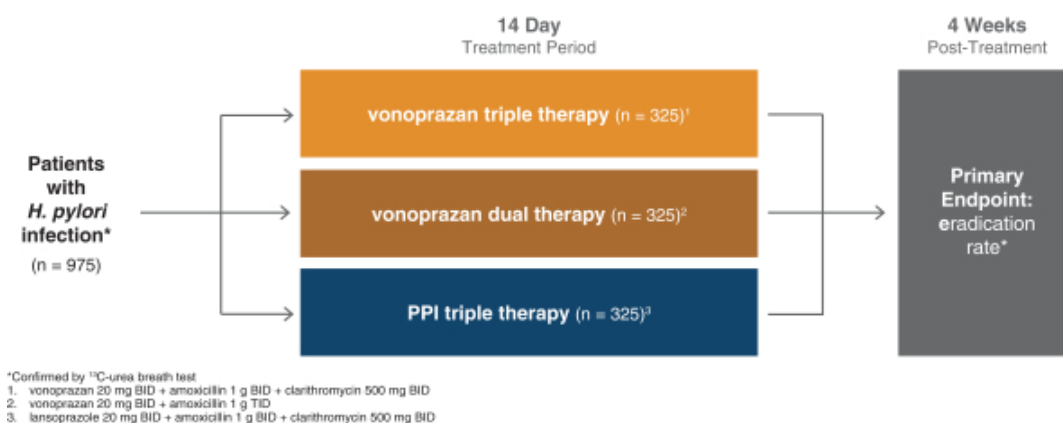
The primary endpoint for this trial will be the percentage of patients with successful eradication of *H. pylori* infection as assessed by <sup>13</sup>C-urea breath test four weeks after completion of treatment. The primary analysis will assess the non-inferiority of vonoprazan dual therapy to lansoprazole triple therapy and vonoprazan triple therapy to lansoprazole triple therapy excluding patients who have *H. pylori* infection that is resistant to clarithromycin. We will also conduct secondary analyses for superiority in all patients regardless of antibiotic resistance and in patients with clarithromycin-resistant *H. pylori* infection.

Our Phase 3 trial design is modeled after the successful Phase 3 clinical trial conducted in Japan. Key differences include:

- **Inclusion of patients with *H. pylori* infection and dyspeptic symptoms.** Our clinical trial will enroll patients with active *H. pylori* infection and dyspeptic symptoms. The Japan Phase 3 trial enrolled patients with *H. pylori* infection and a history of gastric or duodenal ulcers;
- **Treatment duration and antibiotic doses.** Standard of care regimens in Western countries include higher doses of antibiotics and a longer duration of treatment (typically 14 days) than in Japan (typically seven days); and
- **Inclusion of dual therapy arm.** Vonoprazan dual therapy has only been studied in investigator-initiated clinical trials and not yet in a pivotal trial.

Our clinical trial design conforms to standard of care treatment regimens in the United States and Europe and follows the ACG treatment guidelines.

### Design for Planned Phase 3 *H. pylori* Clinical Trial

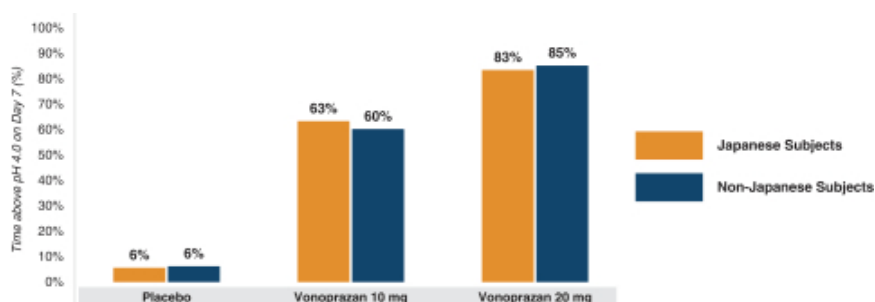


We expect to report top-line data from this trial in 2021 and, if successful, file a regulatory submission for marketing approval in 2021.

### Vonoprazan Pharmacokinetics and Pharmacodynamics in Japanese vs. non-Japanese Subjects

The vonoprazan pharmacokinetic and pharmacodynamic profile is similar between Japanese and non-Japanese subjects as assessed in two randomized, double-blind, placebo-controlled Phase 1 clinical trials in healthy volunteers. Sixty Japanese subjects in the first study and 48 non-Japanese subjects in the second study, of whom 85% were Caucasian, received doses from 10 mg up to 40 mg QD for seven consecutive days. At all doses, pharmacokinetics between the two populations were similar. In addition, the pharmacodynamics were similar between Japanese and non-Japanese subjects as shown in the figure below. On Day 7, mean time above pH 4.0 for vonoprazan 20 mg QD was 83% for Japanese subjects and 85% for non-Japanese subjects. Night-time 12-hour time above pH 4.0 was 73% for Japanese subjects and 75% for non-Japanese subjects. We believe that these results show that vonoprazan has a similar profile in Japanese and non-Japanese subjects.

### Comparative Pharmacodynamics of Vonoprazan in Japanese and non-Japanese Subjects



### Summary of Vonoprazan Safety Data

#### Safety in Clinical Studies

As of December 2018, 6,683 subjects have been exposed to vonoprazan in completed and ongoing Phase 1 to 3 clinical trials. The doses studied have ranged from 1 to 120 mg with durations up

to one year. The most commonly reported adverse events, or AEs, in the clinical development program for vonoprazan, as reflected in the Japanese prescribing information published by Japan's Pharmaceuticals and Medical Devices Agency, or PMDA, were diarrhea, constipation, nausea, elevated liver enzymes, rash, and eosinophilia. All such events had an incidence rate of less than 5.0% other than diarrhea in the eradication of *H. pylori* which had an incidence rate of 10.6% in combination with antibiotics. No dose-related increase in treatment-emergent AEs, or TEAEs, or serious AEs was observed. The safety profile of vonoprazan and incidence of TEAEs, drug-related TEAEs, and TEAEs leading to drug discontinuation were similar between vonoprazan and lansoprazole across studies.

Certain earlier generation P-CABs previously under development by other companies may have been discontinued in-part due to their hepatic safety profile. These hepatic safety concerns may be compound-specific and not generalizable to the P-CAB class. It is notable that vonoprazan is based on a pyrrole chemical structure and is chemically distinct from previously discontinued P-CABs that were based on an imidazole structure. Vonoprazan has had a similar hepatic safety profile to lansoprazole across all clinical studies conducted by Takeda, in which 1.0% of subjects treated with vonoprazan 10 mg or 20 mg and 0.8% of subjects treated with lansoprazole 15 mg or 30 mg had ALT or AST elevations greater than three times the upper limit of normal or bilirubin elevations greater than two times the upper limit of normal.

#### **Vonoprazan Post-Marketing Safety in Japan**

The most recent post-marketing safety report from December 2018 includes an estimated 23 million patients who have received vonoprazan in Japan since its launch. Based on the post-marketing experience, the clinically significant adverse reactions section of the Japanese prescribing information for vonoprazan was updated to include skin reactions such as toxic epidermal necrolysis, Steven-Johnson syndrome, and erythema multiforme. The incidence of these skin reactions was considered extremely rare (less than 1 in 100,000 patients) and a causal relationship to vonoprazan could not be ruled out.

Serious hepatic adverse events have also been observed among patients exposed to vonoprazan in Japan in the post-marketing setting. These cases were typically confounded by comorbidities or other concomitant medications and believed to be idiosyncratic reactions. The incidence of these events was considered extremely rare (less than 1 in 100,000 patients). The post-marketing safety data, including the December 2018 post-marketing safety report and the reported hepatic safety events, have been submitted to the PMDA. To date, there have been no changes to the Japan prescribing information related to hepatic safety.

#### **Vonoprazan Launch in Japan**

##### **Vonoprazan Regulatory Status**

Vonoprazan first received approval in Japan on December 26, 2014 as TAKECAB® for the following indications:

- Healing and maintenance of healing of erosive esophagitis;
- Adjunct to antibiotics in *H. pylori* eradication;
- Gastric ulcer;
- Duodenal ulcer;
- Prevention of recurrence of gastric ulcer or duodenal ulcer during low-dose aspirin administration; and

- Prevention of recurrence of gastric ulcer or duodenal ulcer during nonsteroidal anti-inflammatory drug (NSAID) administration.

Vonoprazan was subsequently approved in Japan in February 2016 for the eradication of *H. pylori* in combination packs with antibiotics (Vonosap Pack 400, Vonosap Pack 800, and Vonopion Pack), and as VOCINTI in the Philippines (October 2017), Singapore (March 2018), Thailand (July 2018), Argentina (September 2018), Peru (September 2018), South Korea (March 2019), Taiwan (March 2019), and Malaysia (May 2019). Vonoprazan is currently under review for approval by regulatory authorities in additional countries in Latin America and Asia, including China.

### Vonoprazan Commercialization in Japan

Vonoprazan was approved in Japan in December 2014. In its fourth full year on the market vonoprazan generated \$524 million in net sales, a 20% increase over the prior year.



We believe that the market dynamic for anti-secretory agents in Japan is similar to that in the United States. In both countries, the anti-secretory market is largely genericized. Ahead of the vonoprazan launch in Japan, all PPIs, other than Nexium, were available as generics. As of 2017, generic drugs in Japan represent approximately 70% of the market by volume, compared to the United States where generics are approximately 90% of the market by volume. Additionally, the Japanese government set a goal to increase generic use to 80% by 2020. Although vonoprazan and Dexilant are priced at a premium to generic PPIs in Japan and the United States, respectively, both experienced commercial success.

### Vonoprazan Commercial Opportunity and Strategy

The market for prevention and treatment of acid-related GI diseases in the United States and Europe is large. There were approximately 120 million oral PPI prescriptions written in the United States and 6.1 billion doses prescribed for the 12 months ended May 31, 2019. We estimate there are approximately 65 million individuals with GERD in the United States and 50 million individuals with GERD in the EU5, of whom 15% to 45% are inadequately treated with PPIs. In addition, we estimate that there are approximately 115 million individuals in the United States, of which 2.5 million are treated each year, and 145 million individuals in the EU5 infected with *H. pylori*.

Over many decades of use, multiple drug classes and individual drugs have demonstrated the substantial commercial opportunity for therapies treating acid-related GI diseases. H2RAs including Axid, Pepcid, Tagamet, and Zantac provided the first significant improvement in disease management over antacids and as a class reached \$3.5 billion in annual sales. After H2RAs, PPIs emerged as the new standard of care. Prior to the introduction of generic and OTC alternatives, annual PPI class sales reached approximately \$12.5 billion in the United States, and peak sales for individual brands were approximately \$3.7 billion for Prilosec, \$3.5 billion for Nexium, and \$3.4 billion for Prevacid. As recently as 2015, the last branded PPI, Dexilant, reached approximately \$530 million in sales in the United States despite limited differentiation from other PPIs. As of June 30, 2019, Dexilant was priced at a significant premium to generic PPIs on the market. Even with premium pricing, Dexilant obtained broad insurance coverage and favorable access. As of June 30, 2019, approximately 90% of commercially covered lives and 80% of Medicare covered lives had access to Dexilant. Furthermore, of those commercially covered lives, 65% had unrestricted access to the drug without prior authorization or step edits and 35% of patients had access at the lowest branded cost tier. We believe that, if approved in our markets, vonoprazan will be the first of the next generation of anti-secretory therapies to improve the standard of care for acid-related GI diseases by providing a safe and effective treatment option for the millions of patients in need of more potent, rapid, or durable acid suppression. Additionally, we believe the potential differentiation of vonoprazan compared to PPIs could result in attractive market access and formulary positioning.

### **Sales and Marketing**

We do not currently have our own marketing, sales, or distribution capabilities. We plan to independently commercialize vonoprazan in the United States by building a leading specialty gastroenterology-focused commercial infrastructure to support the adoption of vonoprazan. We believe we can successfully launch vonoprazan in the United States with a focused specialty sales force targeting high prescribers of PPIs, particularly gastroenterologists. We believe we have an opportunity to achieve significant share of voice and exposure to physicians given the scarcity of actively marketed anti-secretory medicines.

To address the commercial opportunity for vonoprazan in Europe and Canada, we plan to seek one or more partners with existing commercial infrastructure and expertise in these markets. Additional clinical trials of vonoprazan may be required to obtain regulatory approval and/or ensure access to these markets.

### **Additional Vonoprazan Development Opportunities**

#### **Indications**

While we are initially focused on the development of vonoprazan for the treatment of erosive esophagitis and the eradication of *H. pylori* infection, we believe there are opportunities to expand the use of vonoprazan to other indications in our licensed territories. For example, in Japan, vonoprazan is also approved for the treatment of gastric ulcers, treatment of duodenal ulcers, prevention of recurrence of gastric ulcer or duodenal ulcer during low-dose aspirin administration, and prevention of recurrence of gastric ulcer or duodenal ulcer during NSAID administration.

In addition to those indications for which vonoprazan is approved in Japan, we believe there are additional opportunities to develop vonoprazan for the treatment of GI diseases:

- We believe that there is opportunity to broadly position vonoprazan's use in GERD with an indication in NERD in addition to an indication in erosive esophagitis. We may develop vonoprazan in NERD with daily and/or on-demand, or as-needed, dosing regimens. We believe the rapid onset of action of vonoprazan may enable on-demand use for the management of

GERD-related symptoms as an alternative to chronic daily treatment with PPIs. An on-demand dosing regimen may be especially attractive in NERD, as NERD patients have symptoms related to acid, but do not have esophageal erosions which require chronic treatment for healing. In an open-label, investigator-sponsored clinical trial in Japan in NERD patients, on-demand treatment with vonoprazan was compared to daily treatment with PPIs. Patients utilized approximately 80% fewer doses of vonoprazan compared to PPIs, but demonstrated similar levels of satisfaction.

- Barrett's esophagus and Zollinger Ellison syndrome are severe diseases related to acid secretion where PPIs are the current standard of care. The improved acid control of vonoprazan relative to PPIs may lead to improved results over PPIs.
- Eosinophilic esophagitis is an autoimmune disease with significant unmet need. Although not approved for this indication, PPIs are prescribed for the treatment of eosinophilic esophagitis. Vonoprazan demonstrated similar efficacy to PPIs in an investigator-sponsored clinical trial in Japan. In this clinical trial, 112 patients with eosinophilic esophagitis were treated with vonoprazan, or the PPI rabeprazole or esomeprazole. Of patients treated with vonoprazan, 82% had complete relief of symptoms compared to 70% for esomeprazole and 76-78% for rabeprazole. Similarly, 35% of patients treated with vonoprazan demonstrated complete remission of eosinophilic esophagitis by histology, compared to 37% for esomeprazole and 31-38% for rabeprazole.

### **Formulations and Packaging**

**Orally Disintegrating Tablet.** An orally disintegrating tablet, or ODT, formulation for vonoprazan is currently in development by Takeda. We may conduct one or more Phase I trials to support potential approval of the ODT formulation. We believe that the ODT represents a meaningful commercial opportunity for patients with difficulty swallowing, as estimated peak U.S. sales of the lansoprazole ODT formulation were over \$450 million.

**Intravenous Formulation.** We are exploring the potential to develop an intravenous formulation of vonoprazan for use in acute bleeding, critically ill patients, or other in-hospital applications. Several PPIs have approved intravenous formulations.

**Pediatric Formulation.** We are exploring the potential to develop an oral formulation, in addition to an ODT formulation, for pediatric use.

**Convenience Pack for *H. pylori*.** In Japan, vonoprazan is marketed both as a stand-alone medicine as well as in pre-packaged convenience packs with either clarithromycin and amoxicillin (Vonosap) or metronidazole and amoxicillin (Vonopion). Pre-packaged products for the eradication of *H. pylori* infection may improve patient adherence and treatment outcomes, and we believe there is a meaningful market opportunity for such a product. In the United States, PrevPac was formerly marketed as a pre-packaged convenience pack of lansoprazole, clarithromycin, and amoxicillin and achieved peak sales of \$150 million.

### **Over the Counter Use**

We believe that vonoprazan has the ideal profile for an OTC product, including the potential for on-demand symptom relief and a well-tolerated safety profile. The market for OTC heartburn relief is substantial, with 2018 sales of \$3.2 billion in the United States.

### **Competition**

The biopharmaceutical industry is characterized by rapidly advancing technologies, intense competition and strong emphasis on proprietary products. We face potential competition from many



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sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions and government agencies and public and private research institutions. If vonoprazan receives marketing approval in the United States, Europe or Canada, it will compete with existing therapies and new therapies that may become available in the future.

Some of our competitors, either alone or with their strategic partners, have substantially greater financial, technical and human resources and significantly greater experience in the discovery and development of product candidates, obtaining FDA and other regulatory approvals of treatments and commercializing those treatments. These same competitors may invent technology that competes with vonoprazan. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated among a smaller number of our competitors. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and subject recruitment for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for vonoprazan, which could result in our competitors establishing a strong market position before we are able to enter the market. In addition, we expect that vonoprazan, if approved, will be priced at a premium over competitive generic products and our ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of generic products.

We expect that vonoprazan, if approved for the treatment of erosive esophagitis and eradication of *H. pylori* infection, will primarily compete with generic PPIs marketed by multiple pharmaceutical companies in both the prescription and OTC markets. Additionally, RedHill Biopharma Ltd. is developing Talicia, a co-formulated capsule comprising generic omeprazole, amoxicillin, and rifabutin for the treatment of *H. pylori* infection, and filed a new drug application, or NDA, in the United States in May 2019. Ironwood Pharmaceuticals, Inc. is developing IW-3718, a bile acid sequestrant, currently in Phase 3 clinical trials as an adjunct to PPIs for the treatment of patients with persistent GERD.

We are also aware of other P-CABs in territories outside of the United States that, if developed and approved in our territories, may compete with vonoprazan. Revaprazan is marketed by Yuhan Corporation in South Korea. Tegoprazan is marketed by CJ Healthcare Corp. in South Korea and is currently in Phase 3 development in Japan by RaQualia Pharma, Inc. Daewoong Pharmaceutical Co., Ltd.'s DWP14012 has been studied in Phase 2 clinical trials in South Korea, and Cinclus Pharma AG's X842 has completed a Phase 1 clinical trial in Europe. To our knowledge, none of these compounds have demonstrated superiority to PPIs on clinical endpoints.

Additionally, we are aware of several clinical-stage PPIs in territories outside of the United States that if developed and approved in our licensed territories may compete with vonoprazan. These include Dixa Medica's DLBS-2411, currently in Phase 3 clinical trials in Indonesia, Sihuan Pharmaceutical's anaprazole, currently in Phase 3 clinical trials in China, Eisai's azeloprazole, currently in a Phase 2 clinical trial in Japan, and Sidem Pharma's tenatoprazole, currently in Phase 2 clinical trials in Europe and Canada.

### **Manufacturing**

We do not currently own or operate manufacturing facilities for the production of clinical or commercial quantities of vonoprazan. Vonoprazan is a small molecule that can be manufactured using

commercially available technologies. We currently rely on Takeda to supply us with vonoprazan drug product for clinical use. We intend to enter into a commercial supply agreement with Takeda, and we are exploring additional options for commercial supply of vonoprazan from other third party contract manufacturers.

With respect to any future product candidates, we expect to continue to rely on third-party contract manufacturers to manufacture clinical supplies and commercial quantities of any approved product. Although we rely on contract manufacturers, we have personnel with manufacturing experience to oversee our relationship with Takeda.

### **Intellectual Property**

Intellectual property, including patents, trade secrets, trademarks and copyrights, is important to our business. Our commercial success depends in part on our ability to obtain and maintain proprietary intellectual property protection for vonoprazan, as well as for future product candidates and novel discoveries, product development technologies, and know-how. Our commercial success also depends in part on our ability to operate without infringing on the proprietary rights of others and to prevent others from infringing our proprietary rights. Our policy is to develop and maintain protection of our proprietary position by, among other methods, licensing or filing U.S. and foreign patents and applications relating to our technology, inventions, and improvements that are important to the development and implementation of our business.

Our patent portfolio, comprising patents and patent applications exclusively licensed to us, is built with a goal of establishing broad protection that generally includes, for the product candidate compound, claims directed to composition of matter, pharmaceutical compositions or formulations, methods of synthesis, and methods of treatment using such pharmaceutical compositions or formulations. As of June 30, 2019, our patent portfolio covering vonoprazan consists solely of exclusively licensed patents and patent applications from Takeda. Subject to the terms of the license agreement we entered into with Takeda on May 7, 2019, or the Takeda License, we have licensed from Takeda exclusive rights in the United States, Europe, and Canada to patents and patent applications covering the composition of matter, formulation, use and/or manufacture of vonoprazan. Our patent portfolio comprises 11 distinct patent families protecting the technology relating to the compound vonoprazan and its synthetic intermediates, methods of synthesizing vonoprazan and related compounds, various formulations of vonoprazan products, as well as methods of treating diseases with vonoprazan and related compounds. Our portfolio consists of approximately 16 issued U.S. patents, 7 pending U.S. applications, 9 issued European patents subsequently validated in individual European countries, 6 pending European applications, 3 issued Canadian patents, 5 pending Canadian applications, and one pending PCT application. The issued patents and pending applications have nominal expiration dates ranging from 2024 to 2038, without accounting for any available patent term adjustments or extensions. The issued U.S. patent covering the composition of matter of vonoprazan is expected to expire in August 2028, not including patent term extension. The issued U.S. patent covering the formulation of vonoprazan is expected to expire in August 2030, not including patent term extension.

The term of individual patents in our portfolio depends upon the legal term of patents in the countries in which they are obtained. In most countries in which we file, including the United States, the patent term is 20 years from the earliest date of filing a non-provisional patent application. In the United States, the term of a patent may be eligible for patent term adjustment, which permits patent term restoration as compensation for delays incurred at the USPTO during the patent prosecution process. In addition, for patents that cover an FDA-approved drug, the Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Act, permits a patent term extension of up to five years beyond the expiration of the patent. While the length of the patent term extension is related to the length of time the drug is under regulatory review, patent term extension cannot extend

the remaining term of a patent beyond a total of 14 years from the date of product approval, and only one patent per approved drug may be extended under the Hatch-Waxman Act. Similar provisions are available in Europe and other foreign jurisdictions to extend the term of a patent that covers an approved drug. In the future, if and when our products receive FDA approval, we expect to apply for patent term extensions on patents covering those products. We plan to seek any available patent term extension to any issued patents we may be granted in any jurisdiction where such extensions are available; however, there is no guarantee that the applicable authorities, including the FDA in the United States, will agree with our assessment of whether such extensions should be granted, and if granted, the length of such extensions.

The patent positions of companies like ours are generally uncertain and involve complex legal and factual questions. The relevant patent laws and their interpretation outside of the United States is also uncertain. Changes in either the patent laws or their interpretation in the United States and other countries may diminish our ability to protect our technology or product candidates and could affect the value of such intellectual property. In particular, our ability to stop third parties from making, using, selling, offering to sell or importing products that infringe our intellectual property will depend in part on our success in obtaining and enforcing patent claims that cover our technology, inventions and improvements. We cannot guarantee that patents will be granted with respect to any of our licensed pending patent applications or with respect to any patent applications we may file in the future, nor can we be sure that any patents that may be granted to us or Takeda in the future will be commercially useful in protecting our products, the methods of use or manufacture of those products. Moreover, issued patents do not guarantee the right to practice our technology in relation to the commercialization of our products. Issued patents only allow us to block potential competitors from practicing the claimed inventions of the issued patents.

Further, patents and other intellectual property rights in the pharmaceutical and biotechnology space are evolving and involve many risks and uncertainties. For example, third parties may have blocking patents that could be used to prevent us from commercializing vonoprazan and any future product candidates and practicing our proprietary technology, and any issued patents may be challenged, invalidated or circumvented, which could limit our ability to stop competitors from marketing related products or could limit the term of patent protection that otherwise may exist for vonoprazan and any future product candidates. In addition, the scope of the rights granted under any issued patents may not provide us with protection or competitive advantages against competitors with similar technology. Furthermore, our competitors may independently develop similar technologies that are outside the scope of the rights granted under any issued patents. For these reasons, we may face competition with respect to vonoprazan and any future product candidates. Moreover, because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that, before any particular product candidate can be commercialized, any patent protection for such product may expire or remain in force for only a short period following commercialization, thereby reducing the commercial advantage the patent provides.

It is our policy to require our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to execute confidentiality agreements upon the commencement of employment or consulting relationships with us, and for employees and consultants to enter into invention assignment agreements with us. These agreements provide that all confidential information developed or made known to the individual during the course of the individual's relationship with us is to be kept confidential and not disclosed to third parties except in specific circumstances. Where applicable, the agreements provide that all inventions to which the individual contributed as an inventor shall be assigned to Phathom, and as such, will become our property. There can be no assurance, however, that these agreements will provide meaningful protection or adequate remedies for our trade secrets in the event of unauthorized use or disclosure of such information.

Further, we have filed for and are pursuing trademark protection for our company name "Phathom Pharmaceuticals" in the United States and foreign jurisdictions.

***License Agreement with Takeda Pharmaceutical Company Limited***

On May 7, 2019, we and Takeda entered into the Takeda License. Pursuant to the Takeda License, Takeda granted us an exclusive, sublicensable (with Takeda's reasonable consent) license under certain patents and know how relating to vonoprazan and owned or controlled by Takeda during the term of the Takeda License to commercialize vonoprazan products using specified formulations for all human therapeutic uses in the United States, Europe and Canada, and a non-exclusive license under such patents and know how to develop and manufacture such vonoprazan products anywhere in the world (subject to Takeda's consent as to each country) for the purposes of commercializing the vonoprazan products in the United States, Europe and Canada. We granted Takeda a non-exclusive, royalty-free, sublicensable license under our rights in any patents and know-how that are necessary or useful to enable Takeda to develop and manufacture vonoprazan products anywhere in the world for the purposes of commercialization outside United States, Europe and Canada. We also granted Takeda an exclusive, royalty-free license under our rights in certain patents and know-how owned or controlled by us and necessary for the exploitation of vonoprazan products, in each case for Takeda to commercialize any vonoprazan product outside of the United States, Canada, and Europe and for purposes other than human therapeutic use.

During the term of the Takeda License, we and our affiliates are not permitted to commercialize any pharmaceutical product, other than vonoprazan, that treats acid-related disorders, except for certain generic and OTC competing products in specified circumstances. We will be responsible, at our cost, for the development, manufacture and commercialization of the vonoprazan products. We are required to use commercially reasonable efforts to develop and commercialize the vonoprazan products in our licensed territory.

Under the Takeda License, Takeda has the sole right and authority, with our input, to prepare, file, prosecute, and maintain all Takeda and joint patents on a worldwide basis at its own cost. We are responsible, at our cost, for preparing, filing, prosecuting, and maintaining patents on inventions made solely by us in connection with vonoprazan, subject to input from Takeda. We have the first right to enforce the licensed patent rights with respect to certain infringing products in the United States, Europe and Canada.

We paid Takeda upfront consideration consisting of a cash payment of \$25.0 million, 500,000 shares of common stock and a warrant to purchase 3,500,000 shares of common stock, or the Takeda Warrant. In the event that Takeda's fully-diluted ownership, including the Takeda Warrant, represents less than a certain specified percentage of our fully-diluted capitalization, including shares issuable upon conversion of outstanding convertible promissory notes, calculated immediately prior to the closing of this offering, we further agreed to issue an additional warrant to purchase shares of common stock such that Takeda would hold a certain specified percentage of the fully-diluted capitalization immediately before the closing of this offering. We agreed to make milestone payments to Takeda upon achieving certain tiered aggregate annual net sales of licensed products in the United States, Europe and Canada up a total maximum milestone amount of \$250.0 million. We also agreed to make tiered royalty payments at percentages in the very low to mid double digits on net sales of licensed products, subject to specified offsets and reductions. Royalties will be payable, on a product-by-product and country-by-country basis from the first commercial sale of such product in such country, until the latest of expiration of the licensed patents covering the applicable product, expiration of regulatory exclusivity in such country, or 15 years following first commercial sale in such country.

The Takeda License will continue until the expiration of the obligation to pay royalties in all countries and on all products. We may terminate the Takeda License in its entirety without cause upon six months' prior written notice. We and Takeda may terminate the Takeda License in the case of the other party's insolvency, or upon prior written notice within a specified time period for the other party's

material uncured breach. Takeda may terminate the Takeda License in its entirety if we challenge the licensed patents, or if we assist any third party in challenging such patents.

In connection with the Takeda License, we entered into a clinical manufacturing and supply agreement with Takeda whereby Takeda provides certain quantities of vonoprazan.

### **Government Regulation**

Government authorities in the United States, at the federal, state and local level, and other countries extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, marketing and export and import of products such as those we are developing. A new drug must be approved by the FDA through the NDA process before it may be legally marketed in the United States.

### ***U.S. Drug Development Process***

In the United States, the FDA regulates drugs under the federal Food, Drug, and Cosmetic Act, or the FDCA, and its implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval may subject an applicant to administrative or judicial sanctions. These sanctions could include the FDA's refusal to approve pending applications, withdrawal of an approval, a clinical hold, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties. Any agency or judicial enforcement action could have a material adverse effect on us.

The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in accordance with Good Laboratory Practice, or GLP, regulations and other applicable regulations;
- submission to the FDA of an IND, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, at each clinical site before each trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with Good Clinical Practice, or GCP, regulations to establish the safety and efficacy of the proposed drug for its intended use;
- submission to the FDA of an NDA;
- satisfactory completion of an FDA advisory committee review, if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the drug is produced to assess compliance with current GMP, or cGMP, requirements to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity; and
- FDA review and approval of the NDA to permit commercial marketing of the product for particular indications for use in the United States.

Once a pharmaceutical candidate is identified for development, it enters the preclinical testing stage. Preclinical tests include laboratory evaluations of product chemistry, toxicity and formulation, as well as animal studies. An IND sponsor must submit the results of the preclinical tests, together with manufacturing information and analytical data, to the FDA as part of the IND. An IND is a request for authorization from the FDA to administer an investigational new drug product to humans. The sponsor will also include a protocol detailing, among other things, the objectives of the first phase of the clinical trial, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated, if the first phase lends itself to an efficacy evaluation. Some preclinical testing may continue even after the IND is submitted. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, places the clinical trial on a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. Clinical holds also may be imposed by the FDA at any time before or during clinical trials due to safety concerns about on-going or proposed clinical trials or non-compliance with specific FDA requirements, and the trials may not begin or continue until the FDA notifies the sponsor that the hold has been lifted. Submission of an IND therefore may or may not result in FDA authorization to begin a clinical trial.

All clinical trials must be conducted under the supervision of one or more qualified investigators in accordance with GCP regulations, which include the requirement that all research subjects provide their informed consent in writing for their participation in any clinical trial. They must be conducted under protocols detailing, among other things, the objectives of the trial, dosing procedures, subject selection and exclusion criteria and the safety and effectiveness criteria to be evaluated. Each protocol must be submitted to the FDA as part of the IND as well as any subsequent protocol amendments, and timely safety reports must be submitted to the FDA and the investigators for serious and unexpected adverse events. An IRB at each institution participating in the clinical trial must review and approve each protocol before a clinical trial commences at that institution and must also approve the information regarding the trial and the consent form that must be provided to each trial subject or his or her legal representative, monitor the study until completed and otherwise comply with IRB regulations.

Human clinical trials are typically conducted in three sequential phases that may overlap or be combined:

- **Phase 1:** The product candidate is initially introduced into healthy human volunteers and tested for safety, dosage tolerance, absorption, metabolism, distribution and excretion and, if possible, to gain an early indication of its effectiveness. In the case of some products for severe or life-threatening diseases, such as cancer, especially when the product may be too inherently toxic to ethically administer to healthy volunteers, the initial human testing is often conducted in patients. Sponsors sometimes designate their Phase 1 clinical trials as Phase 1a or Phase 1b. Phase 1b clinical trials are typically aimed at confirming dosing, pharmacokinetics and safety in larger number of patients. Some Phase 1b studies evaluate biomarkers or surrogate markers that may be associated with efficacy in patients with specific types of diseases.
- **Phase 2:** This phase involves clinical trials in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and appropriate dosage.
- **Phase 3:** Clinical trials are undertaken to further evaluate dosage, clinical efficacy and safety in an expanded patient population, generally at geographically dispersed clinical study sites. These clinical trials are intended to establish the overall risk-benefit ratio of the product candidate and provide, if appropriate, an adequate basis for product labeling.

Post-approval trials, sometimes referred to as Phase 4 studies, may be conducted after initial marketing approval. These trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication. In certain instances, the FDA may mandate the performance of Phase 4 clinical trials as a condition of approval of an NDA.

The FDA or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients. In addition, some clinical trials are overseen by an independent group of qualified experts organized by the sponsor, known as a data safety monitoring board or committee. Depending on its charter, this group may determine whether a trial may move forward at designated check points based on access to certain data from the trial.

During the development of a new drug, sponsors are given opportunities to meet with the FDA at certain points. These points may be prior to submission of an IND, at the end of Phase 2, and before an NDA is submitted. Meetings at other times may be requested. These meetings can provide an opportunity for the sponsor to share information about the data gathered to date, for the FDA to provide advice, and for the sponsor and the FDA to reach agreement on the next phase of development. Sponsors typically use the meetings at the end of the Phase 2 trial to discuss Phase 2 clinical results and present plans for the pivotal Phase 3 clinical trials that they believe will support approval of the new drug.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the drug and finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the manufacturer must develop methods for testing the identity, strength, quality and purity of the final drug. In addition, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

While the IND is active and before approval, progress reports summarizing the results of the clinical trials and nonclinical studies performed since the last progress report must be submitted at least annually to the FDA, and written IND safety reports must be submitted to the FDA and investigators for serious and unexpected suspected adverse events, findings from other studies suggesting a significant risk to humans exposed to the same or similar drugs, findings from animal or *in vitro* testing suggesting a significant risk to humans, and any clinically important increased incidence of a serious suspected adverse reaction compared to that listed in the protocol or investigator brochure.

There are also requirements governing the reporting of ongoing clinical trials and completed trial results to public registries. Sponsors of certain clinical trials of FDA-regulated products are required to register and disclose specified clinical trial information, which is publicly available at [www.clinicaltrials.gov](http://www.clinicaltrials.gov). Information related to the product, patient population, phase of investigation, trial sites and investigators and other aspects of the clinical trial is then made public as part of the registration. Sponsors are also obligated to discuss the results of their clinical trials after completion. Disclosure of the results of these trials can be delayed until the new product or new indication being studied has been approved.

#### ***NDA Review and Approval Process***

The results of product development, preclinical and other non-clinical studies and clinical trials, along with descriptions of the manufacturing process, analytical tests conducted on the chemistry of the drug, proposed labeling and other relevant information are submitted to the FDA as part of an NDA requesting approval to market the product. The submission of an NDA is subject to the payment of substantial user fees; a waiver of such fees may be obtained under certain limited circumstances. The FDA reviews an NDA to determine, among other things, whether a product is safe and effective for its

intended use and whether its manufacturing is cGMP-compliant to assure and preserve the product's identity, strength, quality and purity. Under the Prescription Drug User Fee Act, or PDUFA, guidelines that are currently in effect, the FDA has a goal of ten months from the date of "filing" of a standard NDA for a new molecular entity to review and act on the submission. This review typically takes twelve months from the date the NDA is submitted to FDA because the FDA has approximately two months to make a "filing" decision after it the application is submitted. The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review. The FDA may request additional information rather than accept an NDA for filing. In this event, the NDA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing.

The FDA may refer an application for a novel drug to an advisory committee. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. Before approving an NDA, the FDA will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA, the FDA may inspect one or more clinical trial sites to assure compliance with GCP requirements.

After the FDA evaluates an NDA, it will issue an approval letter or a Complete Response Letter. An approval letter authorizes commercial marketing of the drug with prescribing information for specific indications. A Complete Response Letter indicates that the review cycle of the application is complete and the application will not be approved in its present form. A Complete Response Letter usually describes the specific deficiencies in the NDA identified by the FDA and may require additional clinical data, such as an additional pivotal Phase 3 trial or other significant and time-consuming requirements related to clinical trials, nonclinical studies or manufacturing. If a Complete Response Letter is issued, the sponsor must resubmit the NDA or, addressing all of the deficiencies identified in the letter, or withdraw the application. Even if such data and information are submitted, the FDA may decide that the NDA does not satisfy the criteria for approval.

If a product receives regulatory approval, the approval may be significantly limited to specific diseases and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. In addition, the FDA may require a sponsor to conduct Phase 4 testing, which involves clinical trials designed to further assess a drug's safety and effectiveness after NDA approval, and may require testing and surveillance programs to monitor the safety of approved products which have been commercialized. The FDA may also place other conditions on approval including the requirement for a risk evaluation and mitigation strategy, or REMS, to assure the safe use of the drug. If the FDA concludes a REMS is needed, the sponsor of the NDA must submit a proposed REMS. The FDA will not approve the NDA without an approved REMS, if required. A REMS could include medication guides, physician communication plans or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. Any of these limitations on approval or marketing could restrict the commercial promotion, distribution, prescription or dispensing of products. Marketing approval may be withdrawn for non-compliance with regulatory requirements or if problems occur following initial marketing.

The Pediatric Research Equity Act, or PREA, requires a sponsor to conduct pediatric clinical trials for most drugs, for a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration. Under PREA, original NDAs and supplements must contain a pediatric



assessment unless the sponsor has received a deferral or waiver. The required assessment must evaluate the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations and support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The sponsor or FDA may request a deferral of pediatric clinical trials for some or all of the pediatric subpopulations. A deferral may be granted for several reasons, including a finding that the drug is ready for approval for use in adults before pediatric clinical trials are complete or that additional safety or effectiveness data needs to be collected before the pediatric clinical trials begin. The FDA must send a non-compliance letter to any sponsor that fails to submit the required assessment, keep a deferral current or fails to submit a request for approval of a pediatric formulation.

### ***Expedited Development and Review Programs***

A sponsor may seek approval of its product candidate under programs designed to accelerate FDA's review and approval of new drugs and biological products that meet certain criteria. The FDA has a fast track designation program that is intended to expedite or facilitate the process for reviewing new drug products that meet certain criteria. Specifically, new drugs are eligible for Fast Track designation if they are intended to treat a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs for the disease or condition. Unique to a fast track product, the FDA may consider for review sections of the NDA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the NDA, the FDA agrees to accept sections of the NDA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the NDA.

Any product submitted to the FDA for approval, including a product with a fast track designation, may also be eligible for other types of FDA programs intended to expedite development and review, such as priority review and accelerated approval. A product is eligible for priority review if it has the potential to provide safe and effective therapy where no satisfactory alternative therapy exists or a significant improvement in the safety or effectiveness of the treatment, diagnosis or prevention of a serious disease or condition. The FDA will attempt to direct additional resources to the evaluation of an application for a new drug designated for priority review in an effort to facilitate the review. The FDA endeavors to review applications with priority review designations within six months of the filing date as compared to ten months for review of new molecular entity NDAs under its current PDUFA review goals. Priority review designation does not change the scientific/medical standard for approval or the quality of evidence necessary to support approval.

In addition, a product may be eligible for accelerated approval. Drug products intended to treat serious or life-threatening diseases or conditions may be eligible for accelerated approval upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of approval, the FDA may require that a sponsor of a drug receiving accelerated approval perform adequate and well-controlled post-marketing clinical trials. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product. FDA may withdraw approval of a drug or indication approved under accelerated approval if, for example, the confirmatory trial fails to verify the predicted clinical benefit of the product.

FDASIA established a category of drugs referred to as "breakthrough therapies" that may be eligible to receive breakthrough therapy designation. A sponsor may seek FDA designation of a product candidate as a "breakthrough therapy" if the product is intended, alone or in combination with

one or more other products, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. If the FDA designates a breakthrough therapy, it may take actions appropriate to expedite the development and review of the application, which may include holding meetings with the sponsor and the review team throughout the development of the therapy; providing timely advice to, and interactive communication with, the sponsor regarding the development of the drug to ensure that the development program to gather the nonclinical and clinical data necessary for approval is as efficient as practicable; involving senior managers and experienced review staff, as appropriate, in a collaborative, cross-disciplinary review; assigning a cross-disciplinary project lead for the FDA review team to facilitate an efficient review of the development program and to serve as a scientific liaison between the review team and the sponsor; and considering alternative clinical trial designs when scientifically appropriate, which may result in smaller trials or more efficient trials that require less time to complete and may minimize the number of patients exposed to a potentially less efficacious treatment. The designation includes all of the fast track program features, which means that the sponsor may file sections of the NDA for review on a rolling basis if certain conditions are satisfied, including an agreement with FDA on the proposed schedule for submission of portions of the application and the payment of applicable user fees before the FDA may initiate a review. The breakthrough therapy designation is a distinct status from both accelerated approval and priority review, which can also be granted to the same drug if relevant criteria are met. If a product is designated as breakthrough therapy, the FDA will work to expedite the development and review of such drug.

Fast track designation, priority review and breakthrough therapy designation do not change the standards for approval but may expedite the development or approval process. Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened. We may explore some of these opportunities for vonoprazan and any future product candidates as appropriate.

### ***Post-Approval Requirements***

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product may result in restrictions on the product or even complete withdrawal of the product from the market. After approval, some types of changes to the approved product, such as adding new indications, certain manufacturing changes and additional labeling claims, are subject to further FDA review and approval. Drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP regulations and other laws and regulations. In addition, the FDA may impose a number of post-approval requirements as a condition of approval of an NDA. For example, the FDA may require post-marketing testing, including Phase 4 clinical trials, and surveillance to further assess and monitor the product's safety and effectiveness after commercialization.

Any drug products manufactured or distributed by us or our partners pursuant to FDA approvals will be subject to pervasive and continuing regulation by the FDA, including, among other things, record-keeping requirements, reporting of adverse experiences with the drug, providing the FDA with updated safety and efficacy information, drug sampling and distribution requirements, complying with certain electronic records and signature requirements, and complying with FDA promotion and advertising requirements. The FDA strictly regulates labeling, advertising, promotion and other types of information on products that are placed on the market and imposes requirements and restrictions on

drug manufacturers, such as those related to direct-to-consumer advertising, the prohibition on promoting products for uses or in patient populations that are not described in the product's approved labeling (known as "off-label use"), industry-sponsored scientific and educational activities, and promotional activities involving the internet.

Discovery of previously unknown problems or the failure to comply with the applicable regulatory requirements may result in restrictions on the marketing of a product or withdrawal of the product from the market as well as possible civil or criminal sanctions. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval, may subject an applicant or manufacturer to administrative or judicial civil or criminal sanctions and adverse publicity. FDA sanctions could include refusal to approve pending applications, withdrawal of an approval, clinical holds on post-approval clinical trials, warning or untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, mandated corrective advertising or communications with doctors, debarment, restitution, disgorgement of profits, or civil or criminal penalties.

### ***Marketing Exclusivity***

Market exclusivity provisions under the FDCA can delay the submission or the approval of certain marketing applications. The FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to obtain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not approve or even accept for review an abbreviated new drug application, or ANDA, or an NDA submitted under Section 505(b)(2), or 505(b)(2) NDA, submitted by another company for another drug based on the same active moiety, regardless of whether the drug is intended for the same indication as the original innovative drug or for another indication, where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement to one of the patents listed with the FDA by the innovator NDA holder.

The FDCA alternatively provides three years of marketing exclusivity for an NDA, or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the modification for which the drug received approval on the basis of the new clinical investigations and does not prohibit the FDA from approving ANDAs or 505(b)(2) NDAs for drugs containing the active agent for the original indication or condition of use. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

Pediatric exclusivity is another type of marketing exclusivity available in the United States. Pediatric exclusivity provides for an additional six months of marketing exclusivity attached to another period of exclusivity if a sponsor conducts clinical trials in children in response to a written request from the FDA. The issuance of a written request does not require the sponsor to undertake the described clinical trials.

### ***U.S. Healthcare Fraud and Abuse Laws and Compliance Requirements***

In addition to FDA regulation of pharmaceutical products, U.S. federal and state healthcare laws and regulations restrict business practices in the pharmaceutical industry. These laws may impact,

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among other things, our current and future business operations, including our clinical research activities, and constrain the business or financial arrangements and relationships with healthcare providers and other parties. These laws include anti-kickback and false claims laws, civil monetary penalties laws, data privacy and security laws, and physician payment transparency laws. In addition to the federal laws summarized below, we may also be subject to similar state and local laws and regulations that may apply to business practices, including but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, or by patients themselves.

The federal Anti-Kickback Statute prohibits, among other things, individuals or entities from knowingly and willfully offering, paying, soliciting or receiving remuneration, directly or indirectly, overtly or covertly, in cash or in kind to induce or in return for purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any item or service reimbursable under Medicare, Medicaid or other federal healthcare programs. A person or entity does not need to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act and the civil monetary penalties statute.

The federal civil and criminal false claims laws, including the civil False Claims Act, and civil monetary penalties laws prohibit, among other things, any individual or entity from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government, or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government.

The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created additional federal criminal statutes that prohibit, among other things, knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third-party payors and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the U.S. federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the healthcare fraud statute implemented under HIPAA or specific intent to violate it in order to have committed a violation.

In addition, HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and their implementing regulations, imposes certain requirements relating to the privacy, security and transmission of protected health information on HIPAA covered entities, which include certain healthcare providers, health plans and healthcare clearinghouses, and their business associates who conduct certain activities for or on their behalf involving protected health information on their behalf.

The federal Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments or other transfers of value made to physicians and teaching hospitals, and applicable manufacturers and applicable group purchasing organizations to report annually to CMS ownership and investment interests held by physicians and their immediate family members.

Similar state and local laws and regulations may also restrict business practices in the pharmaceutical industry, such as state anti-kickback and false claims laws, which may apply to

business practices, including but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, or by patients themselves; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information or which require tracking gifts and other remuneration and items of value provided to physicians, other healthcare providers and entities; state and local laws that require the registration of pharmaceutical sales representatives; and state and local laws governing the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Violation of any of such laws or any other governmental regulations that apply may result in significant criminal, civil and administrative penalties including damages, fines, imprisonment, disgorgement, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, reputational harm, diminished profits and future earnings, disgorgement, exclusion from participation in government healthcare programs and the curtailment or restructuring of our operations.

### ***U.S. Coverage and Reimbursement***

Significant uncertainty exists as to the coverage and reimbursement status of any product candidate for which we may seek regulatory approval. Sales in the United States will depend, in part, on the availability of sufficient coverage and adequate reimbursement from third-party payors, which include government health programs such as Medicare, Medicaid, TRICARE and the Veterans Administration, as well as managed care organizations and private health insurers. Prices at which we or our customers seek reimbursement for vonoprazan and any future product candidates can be subject to challenge, reduction or denial by third-party payors.

The process for determining whether a third-party payor will provide coverage for a product is typically separate from the process for setting the reimbursement rate that the payor will pay for the product. In the United States, there is no uniform policy among payors for coverage or reimbursement. Decisions regarding whether to cover any of a product, the extent of coverage and amount of reimbursement to be provided are made on a plan-by-plan basis. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own coverage and reimbursement policies, but also have their own methods and approval processes. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that can require manufacturers to provide scientific and clinical support for the use of a product to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance.

Third-party payors are increasingly challenging the price and examining the medical necessity and cost-effectiveness of medical products and services, in addition to their safety and efficacy. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit sales of any product that receives approval. Third-party payors may not consider vonoprazan and any future product candidates to be medically necessary or cost-effective compared to other available therapies, or the rebate percentages required to secure favorable coverage may not yield an adequate margin over cost or may not enable us to maintain price levels sufficient to realize an appropriate return on our investment in drug

development. Additionally, decreases in third-party reimbursement for any product or a decision by a third-party payor not to cover a product could reduce physician usage and patient demand for the product.

### **U.S. Healthcare Reform**

In the United States, there has been, and continues to be, several legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of product candidates, restrict or regulate post-approval activities, and affect the profitable sale of product candidates.

Among policy makers and payors in the United States, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. In March 2010, the Patient Protection and Affordable Care Act, or the Affordable Care Act, was passed, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly affected the pharmaceutical industry. The Affordable Care Act, increased the minimum level of Medicaid rebates payable by manufacturers of brand name drugs from 15.1% to 23.1%; required collection of rebates for drugs paid by Medicaid managed care organizations; required manufacturers to participate in a coverage gap discount program, in which manufacturers must agree to offer point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D; imposed a non-deductible annual fee on pharmaceutical manufacturers or importers who sell certain "branded prescription drugs" to specified federal government programs, implemented a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted, or injected; expanded eligibility criteria for Medicaid programs; creates a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and established a Center for Medicare Innovation at the CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been judicial and political challenges to certain aspects of the Affordable Care Act. For example, the Tax Cuts and Jobs Act of 2017, or Tax Act, includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the Affordable Care Act, on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." On December 14, 2018, a U.S. District Court Judge in the Northern District of Texas, or the Texas District Court Judge, ruled that the individual mandate is a critical and inseparable feature of the Affordable Care Act, and therefore, because it was repealed as part of the Tax Act, the remaining provisions of the Affordable Care Act, are invalid as well. While the Texas District Court Judge, as well as the Trump Administration and CMS, have stated that the ruling will have no immediate effect, and on December 30, 2018 the Texas District Court Judge issued an order staying the judgment pending appeal, it is unclear how this decision, subsequent appeals, and other efforts to repeal and replace the Affordable Care Act, will impact the Affordable Care Act.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. These changes included aggregate reductions to Medicare payments to providers of 2% per fiscal year, which went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, including the Bipartisan Budget Act of 2018, will remain in effect through 2027 unless additional Congressional action is taken. On January 2, 2013, the American Taxpayer

Relief Act of 2012 was signed into law, which, among other things, reduced Medicare payments to several providers, including hospitals, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Moreover, there has recently been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for pharmaceutical products. Further, the Trump Administration released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of pharmaceutical products paid by consumers. Individual states in the United States have also become increasingly active in implementing regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine which drugs and suppliers will be included in their healthcare programs. Furthermore, there has been increased interest by third party payors and governmental authorities in reference pricing systems and publication of discounts and list prices.

### **Foreign Regulation**

In order to market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of our products. Whether or not we obtain FDA approval for a product, we would need to obtain the necessary approvals by the comparable foreign regulatory authorities before we can commence clinical trials or marketing of the product in foreign countries and jurisdictions. Although many of the issues discussed above with respect to the United States apply similarly in the context of the European Union, or EU, the approval process varies between countries and jurisdictions and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries and jurisdictions might differ from and be longer than that required to obtain FDA approval. Regulatory approval in one country or jurisdiction does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country or jurisdiction may negatively impact the regulatory process in others.

To market a medicinal product in the European Economic Area, or EEA (which is comprised of the 28 Member States of the EU plus Norway, Iceland and Liechtenstein), we must obtain a Marketing Authorization, or MA. There are two types of marketing authorizations:

- the Community MA, which is issued by the European Commission through the Centralized Procedure, based on the opinion of the Committee for Medicinal Products for Human Use of the EMA and which is valid throughout the entire territory of the EEA. The Centralized Procedure is mandatory for certain types of products, such as biotechnology medicinal products, orphan medicinal products, advanced therapy products, and medicinal products containing a new active substance indicated for the treatment certain diseases, such as AIDS, cancer, neurodegenerative disorders, diabetes, auto-immune and viral diseases. The Centralized Procedure is optional for products containing a new active substance not yet authorized in the EEA, or for products that constitute a significant therapeutic, scientific or technical innovation or which are in the interest of public health in the EU; and

- National MAs, which are issued by the competent authorities of the Member States of the EEA and only cover their respective territory, are available for products not falling within the mandatory scope of the Centralized Procedure. Where a product has already been authorized for marketing in a Member State of the EEA, this National MA can be recognized in another Member State through the Mutual Recognition Procedure. If the product has not received a National MA in any Member State at the time of application, it can be approved simultaneously in various Member States through the Decentralized Procedure.

Under the above described procedures, before granting the MA, the EMA or the competent authorities of the Member States of the EEA make an assessment of the risk-benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy.

### *Data and marketing exclusivity*

In the EEA, new products authorized for marketing, or reference products, qualify for eight years of data exclusivity and an additional two years of market exclusivity upon marketing authorization. The data exclusivity period prevents generic or biosimilar applicants from relying on the pre-clinical and clinical trial data contained in the dossier of the reference product when applying for a generic or biosimilar marketing authorization in the EU during a period of eight years from the date on which the reference product was first authorized in the EU. The market exclusivity period prevents a successful generic or biosimilar applicant from commercializing its product in the EU until 10 years have elapsed from the initial authorization of the reference product in the EU. The 10-year market exclusivity period can be extended to a maximum of eleven years if, during the first eight years of those 10 years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies.

### *Pediatric investigation plan*

In the EEA, marketing authorization applications for new medicinal products not authorized have to include the results of studies conducted in the pediatric population, in compliance with a pediatric investigation plan, or PIP, agreed with the EMA's Pediatric Committee, or PDCO. The PIP sets out the timing and measures proposed to generate data to support a pediatric indication of the drug for which marketing authorization is being sought. The PDCO can grant a deferral of the obligation to implement some or all of the measures of the PIP until there are sufficient data to demonstrate the efficacy and safety of the product in adults. Further, the obligation to provide pediatric clinical trial data can be waived by the PDCO when these data is not needed or appropriate because the product is likely to be ineffective or unsafe in children, the disease or condition for which the product is intended occurs only in adult populations, or when the product does not represent a significant therapeutic benefit over existing treatments for pediatric patients. Once the marketing authorization is obtained in all Member States of the EU and study results are included in the product information, even when negative, the product is eligible for six months' supplementary protection certificate extension.

### *Clinical trials*

Clinical trials of medicinal products in the European Union must be conducted in accordance with European Union and national regulations and the International Conference on Harmonization, or ICH, guidelines on GCPs. Additional GCP guidelines from the European Commission, focusing in particular on traceability, apply to clinical trials of advanced therapy medicinal products. If the sponsor of the clinical trial is not established within the European Union, it must appoint an entity within the European Union to act as its legal representative. The sponsor must take out a clinical trial insurance policy, and in most EU countries, the sponsor is liable to provide 'no fault' compensation to any study subject injured in the clinical trial.



Prior to commencing a clinical trial, the sponsor must obtain a clinical trial authorization from the competent authority, and a positive opinion from an independent ethics committee. The application for a clinical trial authorization must include, among other things, a copy of the trial protocol and an investigational medicinal product dossier containing information about the manufacture and quality of the medicinal product under investigation. Currently, clinical trial authorization applications must be submitted to the competent authority in each EU Member State in which the trial will be conducted. Under the new Regulation on Clinical Trials, which is currently expected to take effect in 2019, there will be a centralized application procedure where one national authority takes the lead in reviewing the application and the other national authorities have only a limited involvement. Any substantial changes to the trial protocol or other information submitted with the clinical trial applications must be notified to or approved by the relevant competent authorities and ethics committees. Medicines used in clinical trials must be manufactured in accordance with cGMP. Other national and European Union-wide regulatory requirements also apply.

#### *Privacy and data protection laws*

We are also subject to laws and regulations in non-U.S. countries covering data privacy and the protection of health-related and other personal information. EU member states and other jurisdictions have adopted data protection laws and regulations, which impose significant compliance obligations. Laws and regulations in these jurisdictions apply broadly to the collection, use, storage, disclosure, processing and security of personal information that identifies or may be used to identify an individual, such as names, contact information, and sensitive personal data such as health data. These laws and regulations are subject to frequent revisions and differing interpretations, and have generally become more stringent over time.

As of May 25, 2018, Regulation 2016/676, known as the General Data Protection Regulation, or GDPR, replaced the Data Protection Directive with respect to the processing of personal data in the European Union. The GDPR imposes many requirements for controllers and processors of personal data, including, for example, higher standards for obtaining consent from individuals to process their personal data, more robust disclosures to individuals and a strengthened individual data rights regime, shortened timelines for data breach notifications, limitations on retention and secondary use of information, increased requirements pertaining to health data and pseudonymised (i.e., key-coded) data and additional obligations when we contract third-party processors in connection with the processing of the personal data. The GDPR allows EU member states to make additional laws and regulations further limiting the processing of genetic, biometric or health data. Failure to comply with the requirements of GDPR and the applicable national data protection laws of the EU member states may result in fines of up to €20,000,000 or up to 4% of the total worldwide annual turnover of the preceding financial year, whichever is higher, and other administrative penalties.

#### **Employees**

As of June 30, 2019, we had 12 full-time employees, 3 of whom have a Ph.D. or M.D. None of our employees are represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

#### **Legal Proceedings**

We are not currently subject to any material legal proceedings. From time to time, we may be involved in legal proceedings or subject to claims incident to the ordinary course of business. Regardless of the outcome, such proceedings or claims can have an adverse impact on us because of defense and settlement costs, diversion of resources and other factors, and there can be no assurances that favorable outcomes will be obtained.

## MANAGEMENT

### Executive Officers and Directors

The following table sets forth the name, age and position of each of our executive officers and directors as of June 30, 2019.

Name	Age	Position
<b>Executive Officers</b>		
David Socks	44	President, Chief Executive Officer, Treasurer, Secretary and Director
Azmi Nabulsi, M.D., M.P.H.	60	Chief Operating Officer
Aditya Kohli, Ph.D.	31	Chief Business Officer
<b>Non-Employee Directors</b>		
Tadataka Yamada, M.D.	74	Chairman
Jonathan Edwards, Ph.D.	35	Director
James Topper, M.D., Ph.D.	57	Director

(1) Member of the compensation committee

(2) Member of the audit committee

(3) Member of the nominating and corporate governance committee

### Executive Officers

*David Socks* is our co-founder and has served as our Chief Executive Officer, Treasurer and Secretary, and as a member of our board of directors since January 2018, and as our President since March 2019. Since August 2014, Mr. Socks has been a Venture Partner at Frazier Healthcare Partners, or Frazier, a venture capital firm. In this capacity, he co-founded Arcutis, Inc., Nexcida Therapeutics, Inc., Outpost Medicine, LLC, Passage Bio, Inc., Recida Therapeutics, Inc., and Scout Bio, Inc. Mr. Socks served as Chief Executive Officer of Nexcida Therapeutics, Outpost Medicine and Scout Bio. Mr. Socks also serves as Executive Chairman of the board of directors of Recida Therapeutics and as a board member of Outpost Medicine. Prior to joining Frazier, Mr. Socks co-founded Incline Therapeutics, Inc. in 2010 and served as its President and Chief Operating Officer from 2010 until its sale to The Medicines Company in 2013. He also co-founded Cadence Pharmaceuticals, Inc. in 2004 and served as its Vice President of Business Development and then as its Senior Vice President, Corporate Development and Strategy from 2004 until 2010. From 2000 to 2004, Mr. Socks was a Venture Partner at Windamere Venture Partners, a venture capital firm founding and investing in early stage life science companies, where he co-founded several biopharmaceutical companies including Avera Pharmaceuticals, Inc. and Kanisa Pharmaceuticals, Inc. Previously, he worked at Neurocrine Biosciences, EFO Holdings, L.P., an investment firm, and Kaiser Associates, Inc., a strategic management consulting firm. Mr. Socks holds a B.S. from Georgetown University and an M.B.A. from Stanford University. Mr. Socks' knowledge of our business and significant experience as a biopharmaceutical executive and board member, contributed to our board of directors' conclusion that he should serve as a director of our company.

*Azmi Nabulsi, M.D., M.P.H.* is our co-founder and has served as our Chief Operating Officer since March 2019. Dr. Nabulsi has been an entrepreneur-in-residence at Frazier since October 2018. Also, since January 2019, Dr. Nabulsi has served as a business and clinical advisor to Saama Technologies, Inc., a clinical data and analytics company. Previously, through October 2018, Dr. Nabulsi spent fourteen years at Takeda. Dr. Nabulsi held a number of leadership positions at Takeda, most recently as the Deputy Chief Medical & Scientific Officer and Head of Global Development from 2014 until

October 2018. In his roles at Takeda, Dr. Nabulsi oversaw global drug development for both early and late stage product candidates and led global medical, analytic and operational functions responsible for bringing new medicines in multiple therapeutic areas to many markets. Prior to joining Takeda, Dr. Nabulsi held numerous positions at Abbott Laboratories, including Head of Immunology and Oncology Ventures from 1998 to 2002. Dr. Nabulsi has an M.D. from Ain-Shams University in Cairo and a M.P.H. from the University of Minnesota.

*Aditya Kohli, Ph.D.* is our co-founder and has served as our Chief Business Officer since March 2019. Since January 2018, Dr. Kohli has served as Vice President of Frazier. From September 2016 to December 2017, Dr. Kohli served as Senior Associate of Frazier. In this capacity, he has co-founded Passage Bio, Scout Bio, and Recida Therapeutics, Inc., and also served on the board of directors of Scout Bio. Prior to joining Frazier, Dr. Kohli worked at McKinsey & Company as an Engagement Manager from June 2016 until September 2016 and as an Associate from September 2014 until May 2016, where he consulted with biopharmaceutical companies on business development, research and development, and marketing and sales strategy. Dr. Kohli received his Ph.D. from the UC Berkeley and UC San Francisco joint graduate program in bioengineering and holds B.S. and M.Eng. degrees in biological engineering from the Massachusetts Institute of Technology.

#### **Non-Employee Directors**

*Tadataka Yamada, M.D.* has served as Chairman of our board of directors since March 2019. Dr. Yamada served as the Chief Executive Officer and as a member of the board of directors of YamadaCo IIA, Inc. from January 2018 until March 2019 when YamadaCo IIA, Inc. merged with and into our company. Dr. Yamada currently serves as a Venture Partner on the Life Sciences team of Frazier. From June 2011 to June 2015, Dr. Yamada served as the Chief Medical and Scientific Officer and as a member of the board of directors of Takeda. Dr. Yamada has served since 2011 as a member of the board of directors of Agilent Technologies, a global scientific instrument manufacturing and clinical diagnostics company listed on the New York Stock Exchange. Since June 2016, Dr. Yamada has served on the board of directors of CSL Limited, a biotechnology company that is publicly traded on the Australian Securities Exchange. Dr. Yamada previously served as President of the Global Health Program of the Bill & Melinda Gates Foundation from June 2006 to June 2011. From 2000 to 2006, Dr. Yamada was Chairman of Research and Development and a member of the board of directors of GlaxoSmithKline Inc. and prior to that, he held research and development positions at SmithKline Beecham. Prior to joining SmithKline Beecham, Dr. Yamada was Chairman of the Department of Internal Medicine at the University of Michigan Medical School and Physician-in-Chief of the University of Michigan Medical Center. Dr. Yamada serves as chair of the board of directors at the Clinton Health Access Initiative and a member of the National Academy of Medicine. He is also a Fellow of the Imperial College of Medicine, a Master of the American College of Physicians, a Fellow of the Royal College of Physicians, a Member of the American Academy of Arts and Sciences and a past-President of the American Gastroenterological Association and the Association of American Physicians. Dr. Yamada received his M.D. from New York University School of Medicine and a B.A. in History from Stanford University. He has authored over 150 manuscripts in peer reviewed journals and is the editor of The Textbook of Gastroenterology. He has been the recipient of numerous awards including the Distinguished Achievement Award in Gastrointestinal Physiology from the American Physiological Society, the Friedenwald Medal from the American Gastroenterological Association, and the Watanabe Prize in Translational Research from Indiana University and Eli Lilly & Co. Dr. Yamada's extensive research and experience in gastrointestinal drug development, particularly his involvement in the development of vonoprazan at Takeda, as well as his service as a director or officer of other healthcare companies, contributed to our board of directors' conclusion that he should serve as Chairman of our board of directors.

*Jon Edwards, Ph.D.* has served as a member of our board of directors since May 2019. Dr. Edwards is a Partner at Medicxi, a life sciences-focused investment firm. Dr. Edwards was part of the Medicxi co-founding team and joined the firm's investment team as an Associate in February 2016. Prior to joining Medicxi, Dr. Edwards was an Associate in the investment team at Index Ventures, a venture capital firm, from September 2014 until February 2016. Dr. Edwards currently serves on the board of a number of private U.S. and European biotechnology and biopharmaceutical companies, including Palladio Biosciences Inc., Xenikos B.V., UltraHuman Limited, Breakpoint Therapeutics GmbH and Sydnexis Inc. Prior to joining Index Ventures, Dr. Edwards was a life sciences strategy consultant at ClearView Healthcare Partners from January 2013 until September 2014. Dr. Edwards received a Ph.D. in Biochemistry and Biophysics from the University of North Carolina at Chapel Hill and conducted postdoctoral research at the Massachusetts Institute of Technology. Dr. Edwards' knowledge of our business and prior service as a director of multiple biopharmaceutical and biotechnology companies contributed to our board of directors' conclusion that he should serve as a director of our company.

*James Topper, M.D., Ph.D.* has served as a member of our board of directors since January 2018 and served as our President from January 2018 until March 2019. Since 2005, Dr. Topper has also served as the Managing General Partner at Frazier with whom he served as a Partner from 2003 to 2005. Prior to that, from 2002 to 2003, Dr. Topper served as head of the Cardiovascular Research and Development Division at Millennium Pharmaceuticals, Inc., a biopharmaceutical company. Dr. Topper has served as a member of the board of directors of Allena Pharmaceuticals, Inc., a biopharmaceutical company, since September 2011, Alpine Immunosciences Inc., a biotechnology company, since June 2016, Aptinyx Inc., a biopharmaceutical company, since May 2016, and Amunix Pharmaceuticals, Inc., a pharmaceutical company, since October 2018. In addition, from April 2014 to March 2017, Dr. Topper served as a member of the board of directors of Sierra Oncology, Inc. (formerly ProNai Therapeutics, Inc.), an oncology company, and since 2007, Dr. Topper has served as a member of the board of directors of AnaptysBio, Inc., a biotechnology company. From March 2011 to December 2013, Dr. Topper served as a member of the board of directors of Portola Pharmaceuticals, Inc., a biopharmaceutical company, and from 2004 to April 2015 as a member of the board of directors of Amicus Therapeutics, Inc., a biopharmaceutical company. Dr. Topper received a B.S. in Biology from the University of Michigan and an M.D. and a Ph.D. in Biophysics from the Stanford University School of Medicine. He did his postgraduate training in internal medicine and cardiovascular disease at the Brigham and Women's Hospital in Boston and was board certified in both disciplines. Dr. Topper's extensive service as a director of other biopharmaceutical companies contributed to our board of directors' conclusion that he should serve as a director of our company.

## **Board Composition and Election of Directors**

### ***Director Independence***

Our board of directors currently consists of four members. Our board of directors has determined that \_\_\_\_\_ are independent directors in accordance with the listing requirements of the Nasdaq Global Market, or Nasdaq. The Nasdaq independence definition includes a series of objective tests, including that the director is not, and has not been for at least three years, one of our employees and that neither the director nor any of his or her family members has engaged in various types of business dealings with us. In addition, as required by Nasdaq rules, our board of directors has made a subjective determination as to each independent director that no relationships exist, which, in the opinion of our board of directors, would interfere with the exercise of independent judgment in carrying out the responsibilities of the director. In making these determinations, our board of directors reviewed and discussed information provided by the directors and us with regard to each director's business and personal activities and relationships as they may relate to us and our management. There are no family relationships among any of our directors or executive officers.

### **Classified Board of Directors**

In accordance with the terms of our amended and restated certificate of incorporation that will go into effect immediately prior to the closing of this offering, our board of directors will be divided into three classes with staggered, three-year terms. At each annual meeting of stockholders, the directors whose terms then expire will be eligible for reelection until the third annual meeting following reelection. Effective upon the closing of this offering, our directors will be divided among the three classes as follows:

- the Class I directors will be \_\_\_\_\_, and their terms will expire at our first annual meeting of stockholders following this offering;
- the Class II directors will be \_\_\_\_\_, and their terms will expire at our second annual meeting of stockholders following this offering; and
- the Class III directors will be \_\_\_\_\_, and their terms will expire at our third annual meeting of stockholders following this offering.

Our amended and restated certificate of incorporation that will go into effect immediately prior to the closing of this offering will provide that the authorized number of directors may be changed only by resolution of the board of directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change of our board of directors or a change in control of our company. Our directors may be removed only for cause by the affirmative vote of the holders of at least two-thirds of our outstanding voting stock then entitled to vote in an election of directors.

### **Board Leadership Structure**

Our board of directors is currently led by its chairman, Dr. Yamada. Our board of directors recognizes that it is important to determine an optimal board leadership structure to ensure the independent oversight of management as the company continues to grow. We separate the roles of chief executive officer and chairman of the board of directors in recognition of the differences between the two roles. The chief executive officer is responsible for setting the strategic direction for our company and the day-to-day leadership and performance of our company, while the chairman of the board of directors provides guidance to the chief executive officer and presides over meetings of the full board of directors. We believe that this separation of responsibilities provides a balanced approach to managing the board of directors and overseeing our company.

Our board of directors has concluded that our current leadership structure is appropriate at this time. However, our board of directors will continue to periodically review our leadership structure and may make such changes in the future as it deems appropriate.

### **Role of Board in Risk Oversight Process**

Our board of directors has responsibility for the oversight of our risk management processes and, either as a whole or through its committees, regularly discusses with management our major risk exposures, their potential impact on our business and the steps we take to manage them. The risk oversight process includes receiving regular reports from board committees and members of senior management to enable our board of directors to understand our risk identification, risk management and risk mitigation strategies with respect to areas of potential material risk, including operations, finance, legal, regulatory, strategic and reputational risk.

The audit committee reviews information regarding liquidity and operations, and oversees our management of financial risks. Periodically, the audit committee reviews our policies with respect to risk assessment, risk management, loss prevention and regulatory compliance. Oversight by the audit committee includes direct communication with our external auditors, and discussions with management regarding significant risk exposures and the actions management has taken to limit, monitor or control such exposures. The compensation committee is responsible for assessing whether any of our compensation policies or programs has the potential to encourage excessive risk-taking. The nominating and corporate governance committee manages risks associated with the independence of the board of directors, corporate disclosure practices and potential conflicts of interest. While each committee is responsible for evaluating certain risks and overseeing the management of such risks, the entire board of directors is regularly informed through committee reports about such risks. Matters of significant strategic risk are considered by our board of directors as a whole.

### **Board Committees and Independence**

Our board of directors has established three standing committees—audit, compensation and nominating and corporate governance—each of which operates under a charter that has been approved by our board of directors.

#### ***Audit Committee***

The audit committee's main function is to oversee our accounting and financial reporting processes and the audits of our financial statements. This committee's responsibilities include, among other things:

- appointing our independent registered public accounting firm;
- evaluating the qualifications, independence and performance of our independent registered public accounting firm;
- approving the audit and non-audit services to be performed by our independent registered public accounting firm;
- reviewing the design, implementation, adequacy and effectiveness of our internal accounting controls and our critical accounting policies;
- discussing with management and the independent registered public accounting firm the results of our annual audit and the review of our quarterly unaudited combined financial statements;
- reviewing, overseeing and monitoring the integrity of our financial statements and our compliance with legal and regulatory requirements as they relate to financial statements or accounting matters;
- reviewing on a periodic basis, or as appropriate, any investment policy and recommending to our board of directors any changes to such investment policy;
- reviewing with management and our auditors any earnings announcements and other public announcements regarding our results of operations;
- preparing the report that the SEC requires in our annual proxy statement;
- reviewing and approving any related party transactions and reviewing and monitoring compliance with our code of conduct and ethics; and
- reviewing and evaluating, at least annually, the performance of the audit committee and its members including compliance of the audit committee with its charter.

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The members of our audit committee are \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ serves as the chairperson of the committee. All members of our audit committee meet the requirements for financial literacy under the applicable rules and regulations of the SEC and Nasdaq. Our board of directors has determined that \_\_\_\_\_ is an "audit committee financial expert" as defined by applicable SEC rules and has the requisite financial sophistication as defined under the applicable Nasdaq listing standards. Our board of directors has determined each of \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ is independent under the applicable rules of the SEC and Nasdaq. Under the applicable Nasdaq rules, we are permitted to phase in our compliance with the independent audit committee requirements of Nasdaq on the same schedule as we are permitted to phase in our compliance with the independent audit committee requirements pursuant to Rule 10A-3 under the Exchange Act, which requires all members to be independent within one year of listing. We will comply with the phase-in requirements of the Nasdaq rules and within one year of our listing on Nasdaq, all members of our audit committee will be independent under Nasdaq rules and Rule 10A-3. Upon the listing of our common stock on Nasdaq, the audit committee will operate under a written charter that satisfies the applicable standards of the SEC and Nasdaq.

### ***Compensation Committee***

Our compensation committee approves policies relating to compensation and benefits of our officers and employees. The compensation committee approves corporate goals and objectives relevant to the compensation of our Chief Executive Officer and other executive officers, evaluates the performance of these officers in light of those goals and objectives and approves the compensation of these officers based on such evaluations. The compensation committee also approves the issuance of stock options and other awards under our equity plans. The compensation committee will review and evaluate, at least annually, the performance of the compensation committee and its members, including compliance by the compensation committee with its charter.

The members of our compensation committee are \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ serves as the chairperson of the committee. Our board of directors has determined that each of \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ is independent under the applicable Nasdaq listing standards, is a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act. Under the applicable Nasdaq rules, we are permitted to phase in our compliance with the independent compensation committee requirements of Nasdaq which requires all members to be independent within one year of listing. We will comply with the phase-in requirements of Nasdaq rules and within one year of our listing on Nasdaq, all members of our compensation committee will be independent under Nasdaq rules. Upon the listing of our common stock on Nasdaq, the compensation committee will operate under a written charter, which the compensation committee will review and evaluate at least annually.

### ***Nominating and Corporate Governance Committee***

The nominating and corporate governance committee is responsible for assisting our board of directors in discharging the board of directors' responsibilities regarding the identification of qualified candidates to become board members, the selection of nominees for election as directors at our annual meetings of stockholders (or special meetings of stockholders at which directors are to be elected), and the selection of candidates to fill any vacancies on our board of directors and any committees thereof. In addition, the nominating and corporate governance committee is responsible for overseeing our corporate governance policies, reporting and making recommendations to our board of directors concerning governance matters and oversight of the evaluation of our board of directors. The members of our nominating and corporate governance committee are \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ serves as the chairperson of the committee. Our board of directors has determined that each of \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_ is independent under the applicable Nasdaq listing standards. Under the applicable Nasdaq rules, we are permitted to phase in our compliance with the independent nominating and corporate governance committee requirements of Nasdaq which requires all members to be

independent within one year of listing. We will comply with the phase-in requirements of Nasdaq rules and within one year of our listing on , all members of our nominating and corporate governance committee will be independent under Nasdaq rules. Upon the listing of our common stock on Nasdaq, the nominating and corporate governance committee will operate under a written charter, which the nominating and corporate governance committee will review and evaluate at least annually.

#### **Compensation Committee Interlocks and Insider Participation**

None of the members of our compensation committee has ever been one of our officers or employees. None of our executive officers currently serves, or has served, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving as a member of our board of directors or compensation committee.

#### **Board Diversity**

Upon the closing of this offering, our nominating and corporate governance committee will be responsible for reviewing with the board of directors, on an annual basis, the appropriate characteristics, skills and experience required for the board of directors as a whole and its individual members. In evaluating the suitability of individual candidates (both new candidates and current members) for election or appointment, the nominating and corporate governance committee and the board of directors will take into account many factors, including the following:

- personal and professional integrity, ethics and values;
- experience in corporate management, such as serving as an officer or former officer of a publicly-held company;
- experience as a board member or executive officer of another publicly-held company;
- strong finance experience;
- diversity of expertise and experience in substantive matters pertaining to our business relative to other board members;
- diversity of background and perspective, including, but not limited to, with respect to age, gender, race, place of residence and specialized experience;
- experience relevant to our business industry and with relevant social policy concerns; and
- relevant academic expertise or other proficiency in an area of our business operations.

Currently, our board of directors evaluates, and following the closing of this offering will evaluate, each individual in the context of the board of directors as a whole, with the objective of assembling a group that can best maximize the success of the business and represent stockholder interests through the exercise of sound judgment using its diversity of experience in these various areas.

#### **Code of Business Conduct and Ethics**

We plan to adopt a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, which will be effective upon the closing of this offering. Upon the closing of this offering, our code of business conduct and ethics will be available under the Corporate Governance section of our website at [www.phathompharma.com](http://www.phathompharma.com). In addition, we intend to post on our website all disclosures that are required by law or the listing standards of Nasdaq concerning any amendments to, or waivers from, any provision of the code. The reference to our website address does not constitute incorporation by reference of the information contained at or available through our website, and you should not consider it to be a part of this prospectus.



## EXECUTIVE AND DIRECTOR COMPENSATION

This section discusses the material components of the executive compensation program for our named executive officer who is named in the "Summary Compensation Table" below.

For 2018, our only "named executive officer" was David Socks, our President, Chief Executive Officer, Treasurer and Secretary, and member of our board of directors.

This discussion may contain forward-looking statements that are based on our current plans, considerations, expectations and determinations regarding future compensation programs. Actual compensation programs that we adopt following the closing of this offering may differ materially from the currently planned programs summarized in this discussion.

We are an "emerging growth company," as that term is used in the JOBS Act, and have elected to comply with the reduced compensation disclosure requirements available to emerging growth companies under the JOBS Act.

### Summary Compensation Table

The following table presents summary information regarding the total compensation that was awarded to, earned by or paid to our named executive officer for services rendered during the year ended December 31, 2018.

<u>Name and Principal Position</u>	<u>Year</u>	<u>Salary (\$)</u>	<u>Bonus (\$)</u>	<u>Stock Awards (\$)</u>	<u>All Other Compensation (\$)<sup>(1)</sup></u>	<u>Total (\$)</u>
<i>David Socks</i> <i>President, Chief Executive Officer, Treasurer, Secretary and Director</i>	2018	153,333	–	–	16,812	170,145

<sup>(1)</sup> Represents benefit costs paid on behalf of Mr. Socks by our company.

### Narrative Disclosure to Summary Compensation Table

#### **Annual Base Salary**

The compensation of our executive officers is generally determined and approved at the time of their commencement of employment by our board of directors or the compensation committee.

The annual base salary for Mr. Socks for his service as our Chief Executive Officer was \$160,000 for 2018.

In connection with the Takeda License and Mr. Socks' increased responsibilities as our President and Chief Executive Officer, our board of directors increased his base salary to \$340,000, effective May 1, 2019.

#### **Bonus Compensation**

From time to time our board of directors or compensation committee may approve bonuses for our executive officers based on individual performance, company performance or as otherwise determined appropriate. No formal bonus plan was in effect during 2018.

### ***Equity-Based Incentive Awards***

Our equity-based incentive awards are designed to align our interests and the interests of our stockholders with those of our employees and consultants, including our named executive officer. Our board of directors or the compensation committee approves equity grants.

On February 13, 2018, we issued and sold to Mr. Socks, 778,000 shares of our common stock for a per share purchase price of \$0.00064139, after giving effect to the 1,559.1183-for-1 forward stock split immediately prior to the Merger.

On March 13, 2019, we entered into a stock restriction agreement with Mr. Socks whereby Mr. Socks' previously-acquired 778,000 shares of our common stock were subjected to new vesting conditions, such that 194,500 shares were deemed vested as of March 13, 2019 and the remaining 583,500 shares were converted into unvested shares of restricted stock that vest in equal monthly installments over the 48 months thereafter ending on March 13, 2023, subject, in each case, to continued employment or status as a service provider. Any unvested shares held by Mr. Socks upon a termination of employment or service (after giving effect to any accelerated vesting provisions described further below), will be subject to repurchase by us at the original purchase price.

Under Mr. Socks' stock restriction agreement, 100% of any unvested shares will automatically accelerate and vest upon (i) a termination of service by us without cause or by him for good reason following a change in control, or (ii) the refusal by us to enter into a consulting agreement with him in connection with his resignation, subject to his continued employment or service through the date of such event.

### ***Defined Terms Applicable to Stock Restriction Agreement***

For purposes of the stock restriction agreement with Mr. Socks, "Change in Control" generally has the same meaning given to such term in our Existing Incentive Plan, as described below.

For purposes of the stock restriction agreement with Mr. Socks, "Good Reason" means the occurrence of any of the following events or conditions without his consent: (i) a material diminution in authority, duties or responsibilities; (ii) a material diminution in base compensation, unless such reduction is imposed across-the-board to senior management of the Company; (iii) a material change in the geographic location at which he must perform his duties (and the parties acknowledge that a relocation of our principal executive offices to a location more than fifty (50) miles from our then-current offices at which the individual is providing services (excepting reasonable travel on business) shall constitute a material change for purposes of this clause (iii)); or (iv) any other action or inaction that constitutes a material breach by us or any successor or affiliate of our obligations to him under the stock restriction agreement.

For purposes of the stock restriction agreement with Mr. Socks, "Cause" means one or more of the following has occurred, as determined in good faith by us in our reasonable discretion: (i) conviction of, or plea of nolo contendere to, any felony or of any crime involving either moral turpitude or dishonesty; (ii) intentional participation in a fraud or intentional act of dishonesty against our company or any of our customers or business partners; (iii) material breach of duties; (iv) material breach of any written agreement with us if such breach has not been cured, or services ceased, within thirty (30) days of receiving written notice thereof; and (v) failure to comply with the reasonable and lawful directives of management.

### **Employment Letters with our Executive Officers**

In 2018, none of our executive officers were parties to employment agreements or other similar arrangements with us. Each of our executive officers' employment is "at will" and may be terminated at any time, subject to our contractual obligations to them as described below.

#### ***Employment Letter with David Socks***

We entered into an employment letter with Mr. Socks setting forth the terms of his employment, effective May 7, 2019 in connection with entering into the Takeda License.

The employment letter for Mr. Socks provides for an annual base salary of \$340,000, and an annual bonus with a target amount equal to 50% of Mr. Socks' annual base salary. Under the employment letter for Mr. Socks, he will devote at least 80% of his time to our company. Additionally, under the employment letter, Mr. Socks is eligible to participate in all employee benefit plans and programs generally available to similarly situated employees of our company and is entitled to vacation benefits in accordance with our policies.

#### ***Employment Letters with Other Executives***

We have also entered into employment letters with each of our other executive officers, Aditya Kohli, Ph.D., our Chief Business Officer, and Azmi Nabulsi, M.D., M.P.H., our Chief Operating Officer. Each employment letter sets forth the terms of their employment, each effective on May 7, 2019 in connection with entering into the Takeda License.

The employment letters for Drs. Kohli and Nabulsi each provide for an annual base salary of \$180,000 and \$470,000, respectively, and an annual bonus with a target amount equal to 35% and 40% of the executive's annual base salary, respectively. Pursuant to his employment letter, Dr. Kohli's base salary will increase to \$220,000, effective August 1, 2019. Under his employment letter, Dr. Nabulsi will work for our company on a full-time basis. Under his employment letter, Dr. Kohli will devote at least 80% of his time to our company. Additionally, under the employment letters, each executive is eligible to participate in all employee benefit plans and programs generally available to similarly situated employees of our company and is entitled to vacation benefits in accordance with our policies.

### **Outstanding Equity Awards at Fiscal Year-End**

Our named executive officer did not hold any unvested equity awards granted as of December 31, 2018.

### **Other Elements of Compensation**

#### ***Perquisites, Health, Welfare and Retirement Benefits***

We generally do not maintain employee benefit plans or provide perquisites or personal benefits to our executive officers. We do, however, reimburse certain of our executive officers for costs related to health and welfare benefits they receive pursuant to other sources. Our board of directors may elect to adopt qualified or non-qualified benefit plans in the future if it determines that doing so is in our best interests.

#### ***Nonqualified Deferred Compensation***

We do not maintain nonqualified defined contribution plans or other nonqualified deferred compensation plans. Our board of directors may elect to provide our officers and other employees with non-qualified defined contribution or other nonqualified deferred compensation benefits in the future if it determines that doing so is in our best interests.

### ***Change in Control Benefits***

Our named executive officer may become entitled to certain benefits or enhanced benefits in connection with a change in control of our company. The stock restriction agreement with our named executive officer provides for accelerated vesting of all outstanding equity awards upon a qualifying termination in connection with a change in control of our company.

### **Incentive Award Plans**

#### ***2019 Incentive Plan***

Prior to this offering, we intend to adopt and ask our stockholders to approve the 2019 Plan, which would become effective in connection with this offering. Under the 2019 Plan, we may grant cash and equity incentive awards to eligible employees, directors and consultants in order to attract, motivate and retain the talent for which we compete. The material terms of the 2019 Plan, as it is currently contemplated, are summarized below.

#### ***Eligibility and Administration***

Our employees, consultants and directors, and employees and consultants of our subsidiaries, will be eligible to receive awards under the 2019 Plan. Following our initial public offering, the 2019 Plan will generally be administered by our board of directors with respect to awards to non-employee directors and by our compensation committee with respect to other participants, each of which may delegate its duties and responsibilities to committees of our directors and/or officers (referred to collectively as the plan administrator below), subject to certain limitations that may be imposed under the 2019 Plan, Section 16 of the Exchange Act and/or stock exchange rules, as applicable. The plan administrator will have the authority to make all determinations and interpretations under, prescribe all forms for use with, and adopt rules for the administration of, the 2019 Plan, subject to its express terms and conditions. The plan administrator will also set the terms and conditions of all awards under the 2019 Plan, including any vesting and vesting acceleration conditions.

#### ***Limitation on Awards and Shares Available***

An aggregate of shares of our common stock will initially be available for issuance under awards granted pursuant to the 2019 Plan. The number of shares initially available for issuance will be increased by (i) the number of shares of common stock available for issuance and not subject to options granted under our Existing Incentive Plan as of the effective date of the 2019 Plan, (ii) the number of shares subject to stock options or similar awards granted under our Existing Incentive Plan that expire or otherwise terminate without having been exercised in full after the effective date of the 2019 Plan and unvested shares issued pursuant to awards granted under the Existing Incentive Plan that are forfeited to or repurchased by us after the effective date of the 2019 Plan, with the maximum number of shares to be added to the 2019 Plan pursuant to clauses (i) and (ii) above equal to \_\_\_\_\_ shares, and (iii) an annual increase on January 1 of each calendar year beginning in 2020 and ending in 2029, equal to the lesser of (a) \_\_\_\_\_ % of the shares of common stock outstanding on the final day of the immediately preceding calendar year and (b) such smaller number of shares as determined by our board of directors. No more than \_\_\_\_\_ shares of common stock may be issued upon the exercise of incentive stock options under the 2019 Plan. Shares issued under the 2019 Plan may be authorized but unissued shares, shares purchased in the open market or treasury shares.

If an award under the 2019 Plan or the Existing Incentive Plan expires, lapses or is terminated, exchanged for cash, surrendered, repurchased, canceled without having been fully exercised or forfeited, any shares subject to such award will, as applicable, become or again be available for new grants under the 2019 Plan. Further, shares delivered to us to satisfy the applicable exercise or

purchase price of an award under the 2019 Plan or the Existing Incentive Plan and/or to satisfy any applicable tax withholding obligations (including shares retained by us from the award under the 2019 Plan or the Existing Incentive Plan being exercised or purchased and/or creating the tax obligation) will become or again be available for award grants under the 2019 Plan. Awards granted under the 2019 Plan upon the assumption of, or in substitution for, awards authorized or outstanding under a qualifying equity plan maintained by an entity with which we enter into a merger or similar corporate transaction will not reduce the shares available for grant under the 2019 Plan.

#### *Awards*

The 2019 Plan provides for the grant of stock options, including incentive stock options, or ISOs, and nonqualified stock options, or NSOs, restricted stock, dividend equivalents, restricted stock units, or RSUs, stock appreciation rights, or SARs, and other stock or cash-based awards. Certain awards under the 2019 Plan may constitute or provide for a deferral of compensation, subject to Section 409A of the Code, which may impose additional requirements on the terms and conditions of such awards. All awards under the 2019 Plan will be set forth in award agreements, which will detail the terms and conditions of the awards, including any applicable vesting and payment terms and post-termination exercise limitations. A brief description of each award type follows.

*Stock Options.* Stock options provide for the purchase of shares of our common stock in the future at an exercise price set on the grant date. ISOs, by contrast to NSOs, may provide tax deferral beyond exercise and favorable capital gains tax treatment to their holders if certain holding period and other requirements of the Code are satisfied. The exercise price of a stock option will not be less than 100% of the fair market value of the underlying share on the date of grant (or 110% in the case of ISOs granted to certain significant stockholders), except with respect to certain substitute options granted in connection with a corporate transaction. The term of a stock option may not be longer than ten years (or five years in the case of ISOs granted to certain significant stockholders). Vesting conditions determined by the plan administrator may apply to stock options and may include continued service, performance and/or other conditions. ISOs generally may be granted only to our employees and employees of our parent or subsidiary corporations, if any.

*SARs.* SARs entitle their holder, upon exercise, to receive from us an amount equal to the appreciation of the shares subject to the award between the grant date and the exercise date. The exercise price of a SAR will not be less than 100% of the fair market value of the underlying share on the date of grant (except with respect to certain substitute SARs granted in connection with a corporate transaction), and the term of a SAR may not be longer than ten years. Vesting conditions determined by the plan administrator may apply to SARs and may include continued service, performance and/or other conditions.

*Restricted Stock and RSUs.* Restricted stock is an award of nontransferable shares of our common stock that remain forfeitable unless and until specified conditions are met, and which may be subject to a purchase price. RSUs are contractual promises to deliver shares of our common stock in the future, which may also remain forfeitable unless and until specified conditions are met and may be accompanied by the right to receive the equivalent value of dividends paid on shares of our common stock prior to the delivery of the underlying shares. Delivery of the shares underlying RSUs may be deferred under the terms of the award or at the election of the participant, if the plan administrator permits such a deferral. Conditions applicable to restricted stock and RSUs may be based on continuing service, the attainment of performance goals and/or such other conditions as the plan administrator may determine.

*Other Stock or Cash-Based Awards.* Other stock or cash-based awards are awards of cash, fully vested shares of our common stock and other awards valued wholly or partially by referring to, or

otherwise based on, shares of our common stock. Other stock or cash-based awards may be granted to participants and may also be available as a payment form in the settlement of other awards, as standalone payments and as payment in lieu of base salary, bonus, fees or other cash compensation otherwise payable to any individual who is eligible to receive awards. The plan administrator will determine the terms and conditions of other stock or cash-based awards, which may include vesting conditions based on continued service, performance and/or other conditions.

*Performance Awards*

Performance awards include any of the foregoing awards that are granted subject to vesting and/or payment based on the attainment of specified performance goals or other criteria the plan administrator may determine, which may or may not be objectively determinable. Performance criteria upon which performance goals are established by the plan administrator may include: net earnings or losses (either before or after one or more of interest, taxes, depreciation, amortization and non-cash equity-based compensation expense); gross or net sales or revenue or sales or revenue growth; net income (either before or after taxes) or adjusted net income; profits (including, but not limited to, gross profits, net profits, profit growth, net operation profit or economic profit), profit return ratios or operating margin; budget or operating earnings (either before or after taxes or before or after allocation of corporate overhead and bonus); cash flow (including operating cash flow and free cash flow or cash flow return on capital); return on assets; return on capital or invested capital; cost of capital; return on stockholders' equity; total stockholder return; return on sales; costs, reductions in costs and cost control measures; expenses; working capital; earnings or loss per share; adjusted earnings or loss per share; price per share or dividends per share (or appreciation in or maintenance of such price or dividends); regulatory achievements or compliance; implementation, completion or attainment of objectives relating to research, development, regulatory, commercial or strategic milestones or developments; market share; economic value or economic value added models; division, group or corporate financial goals; customer satisfaction/growth; customer service; employee satisfaction; recruitment and maintenance of personnel; human resources management; supervision of litigation and other legal matters; strategic partnerships and transactions; financial ratios (including those measuring liquidity, activity, profitability or leverage); debt levels or reductions; sales-related goals; financing and other capital raising transactions; cash on hand; acquisition activity; investment sourcing activity; and marketing initiatives, any of which may be measured in absolute terms or as compared to any incremental increase or decrease. Such performance goals also may be based solely by reference to our performance or the performance of a subsidiary, division, business segment or business unit, or based upon performance relative to performance of other companies or upon comparisons of any of the indicators of performance relative to performance of other companies.

*Provisions of the 2019 Plan Relating to Director Compensation*

The 2019 Plan provides that the plan administrator may establish compensation for non-employee directors from time to time subject to the 2019 Plan's limitations. Prior to commencing this offering, our stockholders will approve the initial terms of our non-employee director compensation program, which is described below under the heading "—Director Compensation." Our board of directors or its authorized committee may modify the non-employee director compensation program from time to time in the exercise of its business judgment, taking into account such factors, circumstances and considerations as it shall deem relevant from time to time, provided that the sum of any cash compensation or other compensation and the grant date fair value (as determined in accordance with ASC 718, or any successor thereto) of any equity awards granted as compensation for services as a non-employee director during any fiscal year may not exceed \$ \_\_\_\_\_, increased to \$ \_\_\_\_\_, in the fiscal year of a non-employee director's initial service as a non-employee director. The plan administrator may make exceptions to this limit for individual non-employee directors in extraordinary circumstances, as the plan administrator may determine in its discretion, provided that

the non-employee director receiving such additional compensation may not participate in the decision to award such compensation or in other contemporaneous compensation decisions involving non-employee directors.

#### *Certain Transactions*

In connection with certain transactions and events affecting our common stock, including a change in control, or change in any applicable laws or accounting principles, the plan administrator has broad discretion to take action under the 2019 Plan to prevent the dilution or enlargement of intended benefits, facilitate such transaction or event, or give effect to such change in applicable laws or accounting principles. This includes canceling awards in exchange for either an amount in cash or other property with a value equal to the amount that would have been obtained upon exercise or settlement of the vested portion of such award or realization of the participant's rights under the vested portion of such award, accelerating the vesting of awards, providing for the assumption or substitution of awards by a successor entity, adjusting the number and type of shares available, replacing awards with other rights or property or terminating awards under the 2019 Plan. In the event of a change in control where the acquirer does not assume awards granted under the 2019 Plan, awards issued under the 2019 Plan shall be subject to accelerated vesting such that 100% of the awards will become vested and exercisable or payable, as applicable, and which may be subject to such terms and conditions as apply generally to holders of common stock under the change in control documents. In addition, in the event of certain non-reciprocal transactions with our stockholders, or an "equity restructuring," the plan administrator will make equitable adjustments to the 2019 Plan and outstanding awards as it deems appropriate to reflect the equity restructuring.

For purposes of the 2019 Plan, a "change in control" means and includes each of the following: (i) a transaction or series of transactions (other than an offering of our common stock to the general public through a registration statement filed with the SEC or a transaction or series of transactions that meets the requirements of clauses (x) and (y) of clause (iii) below) whereby any "person" or related "group" of "persons" (as such terms are used in Sections 13(d) and 14(d)(2) of the Exchange Act) (other than us, any of our subsidiaries, an employee benefit plan maintained by us or any of our subsidiaries or a "person" that, prior to such transaction, directly or indirectly controls, is controlled by, or is under common control with, us) directly or indirectly acquires beneficial ownership (within the meaning of Rule 13d-3 under the Exchange Act) of our securities possessing more than 50% of the total combined voting power of our securities outstanding immediately after such acquisition; or (ii) during any period of two consecutive years, individuals who, at the beginning of such period, constitute the board of directors together with any new director(s) (other than a director designated by a person who shall have entered into an agreement with us to effect a transaction described in clauses (i) or (iii)) whose election by the board of directors or nomination for election by our stockholders was approved by a vote of at least two-thirds of the directors then still in office who either were directors at the beginning of the two-year period or whose election or nomination for election was previously so approved, cease for any reason to constitute a majority thereof; or (iii) the consummation by us (whether directly involving us or indirectly involving us through one or more intermediaries) of (a) a merger, consolidation, reorganization, or business combination or (b) a sale or other disposition of all or substantially all of our assets in any single transaction or series of related transactions or (c) the acquisition of assets or stock of another entity, in each case other than a transaction: (x) which results in our voting securities outstanding immediately before the transaction continuing to represent (either by remaining outstanding or by being converted into our voting securities or the voting securities of a successor entity, directly or indirectly, at least a majority of the combined voting power of our outstanding voting securities or the successor entity's outstanding voting securities immediately after the transaction, and (y) after which no person or group beneficially owns voting securities representing 50% or more of the combined voting power of us or the successor entity (provided that no person will be treated as beneficially owning 50% or more of the combined voting power of us or the successor

entity for purposes of this clause (y) solely as a result of the voting power held in us prior to the consummation of the transaction).

*Foreign Participants, Claw-Back Provisions, Transferability and Participant Payments*

With respect to foreign participants, the plan administrator may modify award terms, establish subplans and/or adjust other terms and conditions of awards, subject to the share limits described above. All awards will be subject to the provisions of any claw-back policy implemented by our company to the extent set forth in such claw-back policy or in the applicable award agreement. With limited exceptions for estate planning, domestic relations orders, certain beneficiary designations and the laws of descent and distribution, awards under the 2019 Plan are generally non-transferable prior to vesting and are exercisable only by the participant. With regard to tax withholding obligations arising in connection with awards under the 2019 Plan and exercise price obligations arising in connection with the exercise of stock options under the 2019 Plan, the plan administrator may, in its discretion, accept cash, wire transfer, or check, shares of our common stock that meet specified conditions, a "market sell order" or such other consideration as it deems suitable or any combination of the foregoing.

*Plan Amendment and Termination*

Our board of directors may amend or terminate the 2019 Plan at any time; however, except in connection with certain changes in our capital structure, stockholder approval will be required for any amendment that increases the number of shares available under the 2019 Plan. The plan administrator will have the authority, without the approval of our stockholders, to amend any outstanding stock option or SAR to reduce its exercise price per share. No award may be granted pursuant to the 2019 Plan after the tenth anniversary of the date on which our board of directors adopts the 2019 Plan.

*Securities Laws*

The 2019 Plan is intended to conform to all provisions of the Securities Act, and the Exchange Act and any and all regulations and rules promulgated by the SEC thereunder, including, without limitation, Rule 16b-3. The 2019 Plan will be administered, and awards will be granted and may be exercised, only in such a manner as to conform to such laws, rules and regulations.

*Federal Income Tax Consequences*

The material federal income tax consequences of the 2019 Plan under current federal income tax law are summarized in the following discussion, which deals with the general tax principles applicable to the 2019 Plan. The following discussion is based upon laws, regulations, rulings and decisions now in effect, all of which are subject to change. Foreign, state and local tax laws, and employment, estate and gift tax considerations are not discussed due to the fact that they may vary depending on individual circumstances and by locality.

Stock Options and SARs. A 2019 Plan participant generally will not recognize taxable income and we generally will not be entitled to a tax deduction upon the grant of a stock option or SAR. The tax consequences of exercising a stock option and the subsequent disposition of the shares received upon exercise will depend upon whether the option qualifies as an ISO or an NSO. Upon exercising an NSO when the fair market value of our stock is higher than the exercise price of the option, a 2019 Plan participant generally will recognize taxable income at ordinary income tax rates equal to the excess of the fair market value of the stock on the date of exercise over the purchase price, and we (or our subsidiaries, if any) generally will be entitled to a corresponding tax deduction for compensation expense, in the amount equal to the amount by which the fair market value of the shares purchased exceeds the purchase price for the shares. Upon a subsequent sale or other disposition of the option shares, the participant will recognize a short-term or long-term capital gain or loss in the amount of the difference between the sales price of the shares and the participant's tax basis in the shares.



Upon exercising an ISO, a 2019 Plan participant generally will not recognize taxable income, and we will not be entitled to a tax deduction for compensation expense. However, upon exercise, the amount by which the fair market value of the shares purchased exceeds the purchase price will be an item of adjustment for alternative minimum tax purposes. The participant will recognize taxable income upon a sale or other taxable disposition of the option shares. For federal income tax purposes, dispositions are divided into two categories: qualifying and disqualifying. A qualifying disposition generally occurs if the sale or other disposition is made more than two years after the date the option was granted and more than one year after the date the shares are transferred upon exercise. If the sale or disposition occurs before these two periods are satisfied, then a disqualifying disposition generally will result.

Upon a qualifying disposition of ISO shares, the participant will recognize long-term capital gain in an amount equal to the excess of the amount realized upon the sale or other disposition of the shares over their purchase price. If there is a disqualifying disposition of the shares, then the excess of the fair market value of the shares on the exercise date (or, if less, the price at which the shares are sold) over their purchase price will be taxable as ordinary income to the participant. If there is a disqualifying disposition in the same year of exercise, it eliminates the item of adjustment for alternative minimum tax purposes. Any additional gain or loss recognized upon the disposition will be recognized as a capital gain or loss by the participant.

We will not be entitled to any tax deduction if the participant makes a qualifying disposition of ISO shares. If the participant makes a disqualifying disposition of the shares, we should be entitled to a tax deduction for compensation expense in the amount of the ordinary income recognized by the participant.

Upon exercising or settling a SAR, a 2019 Plan participant will recognize taxable income at ordinary income tax rates, and we should be entitled to a corresponding tax deduction for compensation expense, in the amount paid or value of the shares issued upon exercise or settlement. Payments in shares will be valued at the fair market value of the shares at the time of the payment, and upon the subsequent disposition of the shares the participant will recognize a short-term or long-term capital gain or loss in the amount of the difference between the sales price of the shares and the participant's tax basis in the shares.

*Restricted Stock and RSUs.* A 2019 Plan participant generally will not recognize taxable income at ordinary income tax rates and we generally will not be entitled to a tax deduction upon the grant of restricted stock or RSUs. Upon the termination of restrictions on restricted stock or the payment of RSUs, the participant will recognize taxable income at ordinary income tax rates, and we should be entitled to a corresponding tax deduction for compensation expense, in the amount paid to the participant or the amount by which the then fair market value of the shares received by the participant exceeds the amount, if any, paid for them. Upon the subsequent disposition of any shares, the participant will recognize a short-term or long-term capital gain or loss in the amount of the difference between the sales price of the shares and the participant's tax basis in the shares. However, a 2019 Plan participant granted restricted stock that is subject to forfeiture or repurchase through a vesting schedule such that it is subject to a "risk of forfeiture" (as defined in Section 83 of the Code) may make an election under Section 83(b) of the Code to recognize taxable income at ordinary income tax rates, at the time of the grant, in an amount equal to the fair market value of the shares of common stock on the date of grant, less the amount paid, if any, for such shares. We will be entitled to a corresponding tax deduction for compensation, in the amount recognized as taxable income by the participant. If a timely Section 83(b) election is made, the participant will not recognize any additional ordinary income on the termination of restrictions on restricted stock, and we will not be entitled to any additional tax deduction.

*Other Stock or Cash-Based Awards.* A 2019 Plan participant will not recognize taxable income and we will not be entitled to a tax deduction upon the grant of other stock or cash-based awards until cash or shares are paid or distributed to the participant. At that time, any cash payments or the fair market value of shares that the participant receives will be taxable to the participant at ordinary income tax rates and we should be entitled to a corresponding tax deduction for compensation expense. Payments in shares will be valued at the fair market value of the shares at the time of the payment, and upon the subsequent disposition of the shares, the participant will recognize a short-term or long-term capital gain or loss in the amount of the difference between the sales price of the shares and the participant's tax basis in the shares.

#### ***Existing Equity Incentive Plan***

On May 6, 2019, our board of directors and our stockholders approved the adoption of the Existing Incentive Plan.

A total of 1,029,400 shares of our common stock are reserved for issuance under the Existing Incentive Plan. As of June 30, 2019, 7,500 shares of our common stock were subject to outstanding restricted stock awards under the Existing Incentive Plan and 1,021,900 shares of our common stock remained available for future issuance under the Existing Incentive Plan.

After the effective date of the 2019 Plan, no additional awards will be granted under the Existing Incentive Plan. However, the Existing Incentive Plan will continue to govern the terms and conditions of the outstanding awards granted under it. Shares of our common stock subject to awards granted under the Existing Incentive Plan that expire, lapse or are terminated, exchanged for cash, surrendered, repurchased or forfeited following the effective date of the Existing Incentive Plan will be available for issuance under the Existing Incentive Plan in accordance with its terms.

*Administration.* Our board of directors administers the Existing Incentive Plan, unless it delegates authority for administration of the plan. Subject to the terms and conditions of the Existing Incentive Plan, the administrator has the authority to select the persons to whom awards are to be made, to determine the type or types of awards to be granted to each person, determine the number of awards to grant, determine the number of shares to be subject to such awards, and the terms and conditions of such awards, and make all other determinations and decisions and to take all other actions necessary or advisable for the administration of the Existing Incentive Plan. The plan administrator is also authorized to establish, adopt, amend or revise rules relating to administration of the Existing Incentive Plan, subject to certain restrictions.

*Eligibility.* Awards under the Existing Incentive Plan may be granted to individuals who are then our employees, consultants and members of our board of directors and our subsidiaries. Only employees may be granted ISOs.

*Awards.* The Existing Incentive Plan provides that our administrator may grant or issue stock options (including NSOs and ISOs), restricted stock, RSUs, other stock-based awards, or any combination thereof. The administrator considers each award grant subjectively, considering factors such as the individual performance of the recipient and the anticipated contribution of the recipient to the attainment of our long-term goals. Each award is set forth in a separate agreement with the person receiving the award and indicates the type, terms and conditions of the award.

*Corporate Transactions.* The plan administrator has broad discretion to equitably adjust the provisions of the Existing Incentive Plan and the terms and conditions of existing and future awards, including with respect to aggregate number and type of shares subject to the Existing Incentive Plan and awards granted pursuant to the Existing Incentive Plan, to prevent the dilution or enlargement of

intended benefits and/or facilitate necessary or desirable changes in the event of certain transactions and events affecting our common stock, such as stock dividends, stock splits, mergers, acquisitions, consolidations and other corporate transactions. The plan administrator may also provide for the acceleration, cash-out, termination, assumption, substitution or conversion of awards in the event of a change in control or certain other unusual or nonrecurring events or transactions. In addition, in the event of certain non-reciprocal transactions with our stockholders, or an “equity restructuring,” the plan administrator will make equitable adjustments to the Existing Incentive Plan and outstanding awards as it deems appropriate to reflect the equity restructuring.

In the event of a change of control where the acquirer does not assume awards granted under the Existing Incentive Plan, awards issued under the Existing Incentive Plan held by persons who have not experienced a termination of service will be subject to accelerated vesting such that 100% of the awards will become vested and exercisable or payable, as applicable, immediately prior to the change in control. Under the Existing Incentive Plan, a change of control is generally defined as: (i) a merger or consolidation of our company with or into any other corporation or other entity or person; (ii) a sale, lease, exchange or other transfer in one transaction or a series of related transactions of all or substantially all of our company’s assets; or (iii) any other transaction, including the sale by us of new shares of our capital stock or a transfer of existing shares of our capital stock, the result of which is that a third party that is not an affiliate of us or our stockholders (or a group of third parties not affiliated with us or our stockholders) immediately prior to such transaction acquires or holds capital stock representing a majority of our outstanding voting power immediately following such transaction; provided that the following events shall not constitute a “change in control” under the Existing Incentive Plan: (a) a transaction (other than a sale of all or substantially all of our assets) in which the holders of our voting securities immediately prior to the merger or consolidation hold, directly or indirectly, at least a majority of the voting securities in the successor corporation or its parent immediately after the merger or consolidation; (b) a sale, lease, exchange or other transaction in one transaction or a series of related transactions of all or substantially all of our assets to an affiliate of ours; (c) an initial public offering of any of our securities or any other transaction principally for bona fide equity financing purposes; (d) a reincorporation solely to change our jurisdiction; or (e) a transaction undertaken for the primary purpose of creating a holding company that will be owned in substantially the same proportion by the persons who held our securities immediately before such transaction.

*Amendment and Termination of the Existing Incentive Plan.* Our board of directors may terminate, amend or modify the Existing Incentive Plan. However, stockholder approval of any amendment to the Existing Incentive Plan must be obtained to the extent necessary and desirable to comply with any applicable law, regulation or stock exchange rule, or for any amendment to the Existing Incentive Plan that increases the number of shares available under the Existing Incentive Plan. If not terminated earlier by the compensation committee or the board of directors, the Existing Incentive Plan will terminate on May 6, 2029.

*Securities Laws and Federal Income Tax Consequences.* The Existing Incentive Plan is designed to comply with applicable securities laws in the same manner as described above in the description of the 2019 Plan under the heading “—2019 Incentive Plan—Securities Laws.” The general federal tax consequences of awards under the Existing Incentive Plan are the same as those described above in the description of the 2019 Plan under the heading “—2019 Incentive Plan—Federal Income Tax Consequences.”

#### **2019 Employee Stock Purchase Plan**

In connection with this offering, we intend to adopt and ask our stockholders to approve a 2019 Employee Stock Purchase Plan, or the ESPP. The material terms of the ESPP, as it is currently contemplated, are summarized below.

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*Shares Available; Administration.* A total of shares of our common stock are initially reserved for issuance under our ESPP. In addition, the number of shares available for issuance under the ESPP will be annually increased on January 1 of each calendar year beginning in 2020 and ending in 2029, by an amount equal to the lesser of: (i) 1% of the shares outstanding on the final day of the immediately preceding calendar year and (ii) such smaller number of shares as is determined by our board of directors. In no event will more than shares of our common stock be available for issuance under the ESPP.

Our board of directors or its committee will have authority to interpret the terms of the ESPP and determine eligibility of participants. We expect that the compensation committee will be the initial administrator of the ESPP.

*Eligibility.* Our employees are eligible to participate in the ESPP if they meet the eligibility requirements under the ESPP established from time to time by the plan administrator. However, an employee may not be granted rights to purchase stock under our ESPP if such employee, immediately after the grant, would own (directly or through attribution) stock possessing 5% or more of the total combined voting power or value of all classes of our common or other class of stock.

*Grant of Rights.* The ESPP is intended to qualify under Section 423 of the Code and stock will be offered under the ESPP during offering periods. The length of the offering periods under the ESPP will be determined by the plan administrator and may be up to 27 months long. Employee payroll deductions will be used to purchase shares on each purchase date during an offering period. The number of purchase periods within, and purchase dates during each offering period will be established by the plan administrator prior to the commencement of each offering period. Offering periods under the ESPP will commence when determined by the plan administrator. The plan administrator may, in its discretion, modify the terms of future offering periods.

The ESPP permits participants to purchase common stock through payroll deductions of up to % of their eligible compensation, which includes a participant's gross base compensation for services to us, including overtime payments and excluding sales commissions, incentive compensation, bonuses, expense reimbursements, fringe benefits and other special payments. The plan administrator will establish a maximum number of shares that may be purchased by a participant during any offering period or purchase period, which, in the absence of a contrary designation, will be shares. In addition, no employee will be permitted to accrue the right to purchase stock under the ESPP at a rate in excess of \$25,000 worth of shares during any calendar year during which such a purchase right is outstanding (based on the fair market value per share of our common stock as of the first day of the offering period).

On the first trading day of each offering period, each participant will automatically be granted an option to purchase shares of our common stock. The option will be exercised on the applicable purchase date(s) during the offering period, to the extent of the payroll deductions accumulated during the applicable purchase period. The purchase price of the shares, in the absence of a contrary determination by the plan administrator, will be 85% of the lower of the fair market value of our common stock on the first trading day of the offering period or on the applicable purchase date, which will be the final trading day of the applicable purchase period. Participants may voluntarily end their participation in the ESPP at any time at least one week prior to the end of the applicable offering period (or such shorter or longer period specified by the plan administrator), and will be paid their accrued payroll deductions that have not yet been used to purchase shares of common stock. Participation ends automatically upon a participant's termination of employment.

A participant may not transfer rights granted under the ESPP other than by will, the laws of descent and distribution or as otherwise provided under the ESPP.

*Certain Transactions.* In the event of certain transactions or events affecting our common stock, such as any stock dividend or other distribution, change in control, reorganization, merger, consolidation or other corporate transaction, the plan administrator will make equitable adjustments to the ESPP and outstanding rights. In addition, in the event of the foregoing transactions or events or certain significant transactions, including a change in control, the plan administrator may provide for (i) either the replacement of outstanding rights with other rights or property or termination of outstanding rights in exchange for cash, (ii) the assumption or substitution of outstanding rights by the successor or survivor corporation or parent or subsidiary thereof, if any, (iii) the adjustment in the number and type of shares of stock subject to outstanding rights, (iv) the use of participants' accumulated payroll deductions to purchase stock on a new purchase date prior to the next scheduled purchase date and termination of any rights under ongoing offering periods or (v) the termination of all outstanding rights. Under the ESPP, a change in control has the same definition as given to such term in the Existing Incentive Plan.

*Plan Amendment; Termination.* The plan administrator may amend, suspend or terminate the ESPP at any time. However, stockholder approval of any amendment to the ESPP will be obtained for any amendment which increases the aggregate number or changes the type of shares that may be sold pursuant to rights under the ESPP, changes the corporations or classes of corporations whose employees are eligible to participate in the ESPP or changes the ESPP in any manner that would cause the ESPP to no longer be an employee stock purchase plan within the meaning of Section 423(b) of the Code. The ESPP will remain in effect until terminated by our board of directors.

*Securities Laws.* The ESPP has been designed to comply with various securities laws in the same manner as described above in the description of the Existing Incentive Plan.

*Federal Income Taxes.* The material federal income tax consequences of the ESPP under current federal income tax law are summarized in the following discussion, which deals with the general tax principles applicable to the ESPP. The following discussion is based upon laws, regulations, rulings and decisions now in effect, all of which are subject to change. Foreign, state and local tax laws, and employment, estate and gift tax considerations are not discussed due to the fact that they may vary depending on individual circumstances and from locality to locality.

The ESPP, and the right of participants to make purchases thereunder, is intended to qualify under the provisions of Section 423 of the Code. Under the applicable Code provisions, no income will be taxable to a participant until the sale or other disposition of the shares purchased under the ESPP. This means that an eligible employee will not recognize taxable income on the date the employee is granted an option under the ESPP (i.e., the first day of the offering period). In addition, the employee will not recognize taxable income upon the purchase of shares. Upon such sale or disposition, the participant will generally be subject to tax in an amount that depends upon the length of time such shares are held by the participant prior to disposing of them. If the shares are sold or disposed of more than two years from the first day of the offering period during which the shares were purchased and more than one year from the date of purchase, or if the participant dies while holding the shares, the participant (or his or her estate) will recognize ordinary income measured as the lesser of: (i) the excess of the fair market value of the shares at the time of such sale or disposition over the purchase price; or (ii) an amount equal to 15% of the fair market value of the shares as of the first day of the offering period. Any additional gain will be treated as long-term capital gain. If the shares are held for the holding periods described above but are sold for a price that is less than the purchase price, there is no ordinary income and the participating employee has a long-term capital loss for the difference between the sale price and the purchase price.

If the shares are sold or otherwise disposed of before the expiration of the holding periods described above, the participant will recognize ordinary income generally measured as the excess of

the fair market value of the shares on the date the shares are purchased over the purchase price and we will be entitled to a tax deduction for compensation expense in the amount of ordinary income recognized by the employee. Any additional gain or loss on such sale or disposition will be long-term or short-term capital gain or loss, depending on how long the shares were held following the date they were purchased by the participant prior to disposing of them. If the shares are sold or otherwise disposed of before the expiration of the holding periods described above but are sold for a price that is less than the purchase price, the participant will recognize ordinary income equal to the excess of the fair market value of the shares on the date of purchase over the purchase price (and we will be entitled to a corresponding deduction), but the participant generally will be able to report a capital loss equal to the difference between the sales price of the shares and the fair market value of the shares on the date of purchase.

### **Director Compensation**

Historically, we have not paid cash or stock-based compensation to directors for their service on our board of directors.

On January 23, 2018, YamadaCo IIA issued and sold to Dr. Yamada, 778,000 shares of common stock of YamadaCo IIA for a per share purchase price of \$0.00064139, after giving effect to the Merger.

On March 13, 2019, we entered into a stock restriction agreement with Dr. Yamada whereby Dr. Yamada's previously-acquired 778,000 shares of our common stock were subjected to new vesting conditions, such that 194,500 shares were deemed vested as of March 13, 2019 and the remaining 583,500 shares were converted into unvested shares of restricted stock that vest in equal monthly installments over the 48 months thereafter ending on March 13, 2023, subject, in each case, to continued employment or status as a service provider. Any unvested shares held by Dr. Yamada upon a termination of employment or service (after giving effect to any accelerated vesting provisions described further below), will be subject to repurchase by us at the original purchase price.

Under Dr. Yamada's stock restriction agreement, 100% of any unvested shares will automatically accelerate and vest upon (i) a termination of service by us without cause or by him for good reason following a change in control, or (ii) the refusal by us to enter into a consulting agreement with him in connection with his resignation, subject to his continued employment or service through the date of such event.

The defined terms "Change in Control," "Cause" and "Good Reason" have the same meanings in Dr. Yamada's stock restriction agreement as given to such terms in Mr. Socks' stock restriction agreement and described above under "Executive and Director Compensation—Equity-Based Incentive Awards."

On May 7, 2019, we entered into an offer letter with Dr. Yamada, our Chairman of the board of directors. Pursuant to Dr. Yamada's offer letter, Dr. Yamada will be paid an annual cash fee of \$100,000, paid quarterly, for his services as Chairman. Additionally, as a member of our board of directors, we will reimburse Dr. Yamada for reasonable travel and other expenses to attend board meetings and other board-related functions.

In connection with this offering, we intend to adopt and ask our stockholders to approve the initial terms of our non-employee director compensation program. The material terms of the non-employee director compensation program, as it is currently contemplated, are summarized below.

The non-employee director compensation policy will provide for annual retainer fees and/or long-term equity awards for our non-employee directors. We expect each non-employee director will receive

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an annual retainer of \$ . Non-employee directors serving as the chairs of the audit, compensation and nominating and corporate governance committees will receive additional annual retainers of \$ , \$ and \$ , respectively. Non-employee directors serving as members of the audit, compensation and nominating and corporate governance committees will receive additional annual retainers of \$ , \$ and \$ , respectively. The non-employee directors will also receive initial grants of options to purchase shares of our common stock, vesting monthly over three years, upon election to the board of directors, and thereafter annual grants of options to purchase shares of our common stock, vesting on the first to occur of (i) the first anniversary of the grant date or (ii) the next occurring annual meeting of our stockholders.

Compensation under our non-employee director compensation policy will be subject to the annual limits on non-employee director compensation set forth in the 2019 Plan, as described above. Our board of directors or its authorized committee may modify the non-employee director compensation program from time to time in the exercise of its business judgment, taking into account such factors, circumstances and considerations as it shall deem relevant from time to time, subject to the annual limit on non-employee director compensation set forth in the 2019 Plan. As provided in the 2019 Plan, our board of directors or its authorized committee may make exceptions to this limit for individual non-employee directors in extraordinary circumstances, as the board of directors or its authorized committee may determine in its discretion, provided that the non-employee director receiving such additional compensation may not participate in the decision to award such compensation or in other compensation decisions involving non-employee directors.

### **Limitations of Liability and Indemnification Matters**

Our amended and restated certificate of incorporation and our amended and restated bylaws provide that we will indemnify our directors and officers to the fullest extent permitted by the Delaware General Corporation Law, which prohibits our amended and restated certificate of incorporation from limiting the liability of our directors for the following:

- any breach of the director's duty of loyalty to us or our stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- unlawful payment of dividends or unlawful stock repurchases or redemptions; or
- any transaction from which the director derived an improper personal benefit.

Our amended and restated certificate of incorporation and our amended and restated bylaws also provide that if Delaware law is amended to authorize corporate action further eliminating or limiting the personal liability of a director, then the liability of our directors will be eliminated or limited to the fullest extent permitted by Delaware law, as so amended. This limitation of liability does not apply to liabilities arising under the federal securities laws and does not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated certificate of incorporation and our amended and restated bylaws also provide that we shall have the power to indemnify our employees and agents to the fullest extent permitted by law. Our amended and restated bylaws also permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in this capacity, regardless of whether our amended and restated bylaws would permit indemnification. We have obtained directors' and officers' liability insurance.

We have entered into separate indemnification agreements with our directors and executive officers, in addition to indemnification provided for in our amended and restated certificate of

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incorporation and amended and restated bylaws. These agreements, among other things, provide for indemnification of our directors and executive officers for expenses, judgments, fines and settlement amounts incurred by this person in any action or proceeding arising out of this person's services as a director or executive officer or at our request. We believe that these provisions in our amended and restated certificate of incorporation and amended and restated bylaws and indemnification agreements are necessary to attract and retain qualified persons as directors and executive officers.

The above description of the indemnification provisions of our amended and restated certificate of incorporation, our amended and restated bylaws and our indemnification agreements is not complete and is qualified in its entirety by reference to these documents, each of which is filed as an exhibit to the registration statement of which this prospectus is a part.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might benefit us and our stockholders. A stockholder's investment may be harmed to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions. Insofar as indemnification for liabilities under the Securities Act may be permitted to directors, officers or persons controlling us pursuant to the foregoing provisions, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable. There is no pending litigation or proceeding naming any of our directors or officers as to which indemnification is being sought, nor are we aware of any pending or threatened litigation that may result in claims for indemnification by any director or officer.



## CERTAIN RELATIONSHIPS AND RELATED PERSON TRANSACTIONS

The following includes a summary of transactions since our inception to which we have been a party in which the amount involved exceeded or will exceed the lesser of \$120,000 and one percent of the average of our total assets at year-end for the last two completed fiscal years, and in which any of our directors, executive officers or, to our knowledge, beneficial owners of more than 5% of our capital stock or any member of the immediate family of any of the foregoing persons had or will have a direct or indirect material interest, other than equity and other compensation, termination, change in control and other arrangements, which are described under "Executive and Director Compensation." The transactions below also include transactions of YamadaCo IIA, Inc. prior to the Merger. We also describe below certain other transactions with our directors, executive officers and stockholders.

### Convertible Promissory Note Financings

#### *Prior Convertible Promissory Note Financings with Frazier Life Sciences IX, L.P.*

In January 2018, YamadaCo IIA, Inc. entered into a convertible promissory note purchase agreement with Frazier Life Sciences IX, L.P., or FLS IX, pursuant to which from January 2018 to December 2018 YamadaCo IIA issued and sold to FLS IX three convertible promissory notes, or the YamadaCo Notes, in the aggregate principal amount of \$1.5 million. The YamadaCo Notes accrued interest at the then applicable federal rate (1.68%, 2.38% and 2.55%, respectively) per annum, and were due and payable upon demand by FLS IX nine months from the date of issuance, subject to earlier conversion or repayment in the event YamadaCo IIA completed an equity financing or a change of control.

In January 2018, we entered into a convertible promissory note purchase agreement with FLS IX, pursuant to which from January 2018 to April 2019, we issued and sold to FLS IX three convertible promissory notes, or the Phathom Notes, in the aggregate principal amount of \$0.9 million. The Phathom Notes accrued interest at the then applicable federal rate (1.68%, 2.42% and 2.52%, respectively) per annum, and were due and payable upon demand by FLS IX nine months from the date of issuance, subject to earlier conversion or repayment in the event we completed an equity financing or a change of control.

The YamadaCo Notes and Phathom Notes, in the aggregate amount of \$2.4 million, including accrued interest thereon, were cancelled and exchanged for May 2019 Notes issued in the May 2019 convertible note financing described below.

The general partner of FLS IX is FHMLS IX, L.P., and the general partner of FHMLS IX, L.P. is FHMLS IX, L.L.C. James Topper, M.D., Ph.D., a member of our board of directors, is one of the managing members of FHMLS IX, L.L.C.

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### *May 2019 Convertible Promissory Note Financing*

In May 2019, we entered into a convertible promissory note purchase agreement with certain investors, or the 2019 Note Purchase Agreement, pursuant to which in May 2019 we issued and sold to such investors convertible promissory notes, or the May 2019 Notes, in the aggregate principal amount of approximately \$90.3 million. The May 2019 Notes accrue interest at a rate of 6% per annum and become payable upon demand of the holders of at least 60% of the outstanding principal amount of the May 2019 Notes one year from the date of issuance, subject to earlier conversion or repayment in the event we complete an equity financing or a change of control. We have not paid any interest on the May 2019 Notes to date. The participants in this May 2019 Note financing included the following 5% or greater stockholders and or entities affiliated with members of our board of directors.

<u>Participants</u>	<u>Aggregate Principal Amount of May 2019 Notes</u>
Frazier Life Sciences IX, L.P. <sup>(1)</sup>	\$ 20,000,000
Entities affiliated with Medicxi Growth <sup>(2)</sup>	\$ 15,000,000

(1) Consists of convertible promissory notes held by FLS IX, or the Frazier May 2019 Notes. Additional details regarding FLS IX and its equity holdings are provided under the section titled "Principal Stockholders." James Topper, M.D., Ph.D., a member of our board of directors, is one of the managing members of FHMLS IX, L.L.C, which is an affiliate of FLS IX.

(2) Consists of convertible promissory notes, or the Medicxi Notes, held by Medicxi Growth I LP and Medicxi Growth Co-Invest I LP, collectively Medicxi Growth. Jonathan Edwards, Ph.D., a member of our board of directors, is a Partner of Medicxi, an affiliate of Medicxi Growth.

The outstanding principal and unpaid accrued interest due on the Frazier May 2019 Notes and the Medicxi Notes will automatically convert into an aggregate of \_\_\_\_\_ shares and \_\_\_\_\_ shares of our common stock, respectively, immediately prior to the closing of this offering, each based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on \_\_\_\_\_, 2019.

The May 2019 Notes are subordinated to borrowings under our Loan Agreement with Silicon Valley Bank and WestRiver Innovation Lending Fund VIII, L.P.

### **Investor Rights Under the 2019 Note Purchase Agreement**

#### *Registration Rights*

The 2019 Note Purchase Agreement provides FLS IX, Takeda, and all holders of the May 2019 Notes with specified registration rights relating to the registration of shares of common stock held by such entities, including shares of our common stock issuable upon conversion of the May 2019 Notes and shares of our common stock issuable upon the exercise or conversion of any securities exercisable or convertible into shares of our common stock.

The registration rights terminate upon the earlier of: (i) five years after the closing of this offering or (ii) with respect to a particular holder, such time at which such holder can sell all shares held by it in compliance with Rule 144 under the Securities Act.

See the section titled "Description of Capital Stock—Registration Rights" for more information regarding these registration rights.

#### *Voting Rights*

The 2019 Note Purchase Agreement provides for rights relating to the election of members to serve on our board of directors. Pursuant to the 2019 Note Purchase Agreement, the following

directors were each elected to serve as members on our board of directors and, as of the date of this prospectus, continue to so serve: David Socks, Tadataka Yamada, M.D., James Topper, M.D., Ph.D. and Jonathan Edwards, Ph.D. Mr. Socks, our President and Chief Executive Officer, was initially selected to serve on our board of directors in his role as Chief Executive Officer. Dr. Yamada was initially selected to serve on our board of directors as a representative of holders of our common stock, as designated by a majority of our common stockholders. Dr. Topper was initially selected to serve on our board of directors as a representative of holders of our common stock, as designated by FLS IX. Dr. Edwards was initially selected to serve on our board of directors as a representative of the holders of the May 2019 Notes.

The 2019 Note Purchase Agreement also provides that Takeda may designate a member to serve on our board of directors as a representative of holders of our common stock, provided that such right does not apply at any time the board of directors consists of fewer than five individuals that are not affiliated with Takeda.

The voting rights provisions of the 2019 Note Purchase Agreement will terminate upon the closing of this offering, and members previously elected to our board of directors pursuant to this agreement will continue to serve as directors until they resign, are removed or their successors are duly elected by holders of our common stock. The composition of our board of directors after this offering is described in more detail under “Management—Board Composition and Election of Directors.”

#### *Other Rights*

The 2019 Note Purchase Agreement provides certain holders of our May 2019 Notes with various additional rights including, among others, information rights, pre-emptive rights, drag along rights, rights of first refusal, co-sale rights, and certain additional covenants made by us. Except as set forth above, all rights under the 2019 Note Purchase Agreement will terminate upon the closing of this offering.

### **Takeda Agreements**

#### *License Agreement and Clinical Manufacturing and Supply Agreement*

On May 7, 2019, we and Takeda, one of our 5% stockholders, entered into the Takeda License and a clinical manufacturing and supply agreement. Such agreements are described in “Business—Intellectual Property—License Agreement with Takeda Pharmaceutical Company Limited.”

In connection with the Takeda License, we (i) entered into a Stock Issuance Agreement with Takeda, pursuant to which we issued Takeda 500,000 shares of our common stock, (ii) issued the Takeda Warrant to purchase 3,500,000 shares of common stock at an exercise price of \$0.0001 per share and (iii) granted the Takeda Warrant Right, pursuant to which Takeda has a right to receive an additional common stock warrant upon the closing of this offering if Takeda’s fully-diluted ownership represents less than a specified percentage of our fully-diluted capitalization, including shares issuable upon conversion of outstanding convertible promissory notes, calculated immediately prior to the closing of this offering, each as partial consideration under the Takeda License. The Takeda Warrant expires ten years from its date of issuance, subject to its earlier termination upon the completion of certain mergers, acquisitions and similar transactions. The Takeda Warrant Right will expire upon the closing of this offering based on an assumed initial public offering price of \$            per share, the midpoint of the price range set forth on the cover of this prospectus. See the section titled “Description of Capital Stock—Warrants” for more information regarding the Takeda Warrant and the Takeda Warrant Right. In connection with the Takeda License, we provided Takeda with various investor rights, including pre-emptive rights, drag along rights, voting rights and certain registration rights. See “—Investor Rights Under the 2019 Note Purchase Agreement” above for more information regarding these voting rights and registration rights.

## **Merger**

### *Initial Founder Equity Issuances*

On January 23, 2018, YamadaCo IIA issued and sold to Tadataka Yamada, M.D., our Chairman, 778,000 shares of YamadaCo IIA common stock at a purchase price of \$0.00064139 per share, after giving effect to the merger described below. On February 14, 2018, YamadaCo IIA issued and sold to FLS IX 781,118 shares of YamadaCo IIA common stock at a purchase price of \$0.00064139 per share, after giving effect to the merger described below.

On February 13, 2018, we issued and sold to David Socks, our President and Chief Executive Officer and a member of our board of directors, 778,000 shares of our common stock at a purchase price of \$0.00064139 per share, after giving effect to the forward stock split described below. On February 14, 2018, we issued and sold to FLS IX 781,118 shares of our common stock at a purchase price of \$0.00064139 per share, after giving effect to the forward stock split described below.

On March 13, 2019, we entered into stock restriction agreements with each of Mr. Socks and Dr. Yamada providing for vesting and a company right to repurchase the unvested shares held by Mr. Socks and Dr. Yamada upon the occurrence of certain events.

For more information regarding these stock issuances to Dr. Yamada and Mr. Socks, see the section in this prospectus entitled “Executive and Director Compensation—Equity-Based Incentive Awards” and “Executive and Director Compensation—Narrative Disclosure to Summary Compensation Table—Director Compensation.”

### *Merger Agreement*

On March 13, 2019, YamadaCo IIA merged with and into our company, with our company surviving the merger, or the Merger. Immediately prior to the Merger, we effected a 1,559.1183-for-1 forward stock split for each outstanding share of our common stock. Effective upon the closing of the Merger, each issued and outstanding share of YamadaCo IIA was converted into 1,559.1183 shares of our common stock.

### *Additional Equity Issuances*

Following the Merger, on March 13, 2019, we issued and sold to FLS IX 687,764 shares of our common stock at a purchase price of \$0.00064139 per share.

### **Additional Executive Officer Equity Issuances**

Following the Merger, on March 13, 2019, we issued and sold to each of Azmi Nabulsi, M.D., M.P.H., our Chief Operating Officer, and Aditya Kohli, Ph.D., our Chief Business Officer, 400,000 and 389,000 shares of our common stock, respectively, at a purchase price of \$0.00064139 per share.

### **Shared Operating Expenses**

Frazier is a principal stockholder of our company and is represented on our board of directors.

For the year ended December 31, 2018 and the six months ended June 30, 2019, we conducted our operations within office space controlled by Frazier and Frazier allocated a portion of the costs associated with this office to us. In addition, Frazier paid for various goods and services, such as employee wages, insurance and expense reimbursements and various administrative services associated with our operations and charged us for those expenses. For the year ended December 31, 2018 and the six months ended June 30, 2018 and 2019, we incurred \$0.3 million, \$0.1 million and \$0.1 million, respectively, of shared operating expenses.

### **Employment Arrangements**

We have entered into employment letter agreements with our executive officers. For more information regarding these employment agreements, see the section in this prospectus entitled “Executive and Director Compensation—Employment Letters with our Executive Officers.”

### **Director and Officer Indemnification**

We have entered into indemnification agreements with each of our directors and executive officers. These agreements, among other things, require us or will require us to indemnify each director (and in certain cases their related venture capital funds) and executive officer to the fullest extent permitted by Delaware law, including indemnification of expenses such as attorneys’ fees, judgments, fines and settlement amounts incurred by the director or executive officer in any action or proceeding, including any action or proceeding by or in right of us, arising out of the person’s services as a director or executive officer.

Our amended and restated certificate of incorporation and our amended and restated bylaws provide that we will indemnify each of our directors and officers to the fullest extent permitted by the Delaware General Corporation Law. Further, we have purchased a policy of directors’ and officers’ liability insurance that insures our directors and officers against the cost of defense, settlement or payment of a judgment under certain circumstances. For further information, see “Executive and Director Compensation—Limitations of Liability and Indemnification Matters.”

### **Policies and Procedures for Related Person Transactions**

Our board of directors will adopt a written related person transaction policy, to be effective upon the closing of this offering, setting forth the policies and procedures for the review and approval or ratification of related-person transactions. This policy will cover, with certain exceptions set forth in Item 404 of Regulation S-K under the Securities Act, any transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships in which we were or are to be a participant, where the amount involved exceeds \$120,000, and a related person had or will have a direct or indirect material interest, including, without limitation, purchases of goods or services by or from the related person or entities in which the related person has a material interest, indebtedness, guarantees of indebtedness and employment by us of a related person. In reviewing and approving any such transactions, our audit committee is tasked to consider all relevant facts and circumstances, including, but not limited to, whether the transaction is on terms comparable to those that could be obtained in an arm’s length transaction and the extent of the related person’s interest in the transaction. All of the transactions described in this section occurred prior to the adoption of this policy.

## PRINCIPAL STOCKHOLDERS

The following table sets forth information with respect to the beneficial ownership of our common stock as of June 30, 2019, and as adjusted to reflect the sale of shares of common stock in this offering, by:

- our named executive officer;
- each of our directors;
- all of our executive officers and directors as a group; and
- each person or group of affiliated persons known by us to beneficially own more than 5% of our common stock.

The number of shares beneficially owned by each stockholder is determined under rules issued by the SEC. Under these rules, beneficial ownership includes any shares as to which a person has sole or shared voting power or investment power. Applicable percentage ownership prior to this offering is based on 5,478,100 shares of common stock outstanding on June 30, 2019, which includes 2,148,180 shares subject to forfeiture or a right of repurchase. Applicable percentage ownership after this offering is based on the sale of \_\_\_\_\_ shares of common stock in this offering and gives effect to the automatic conversion of the May 2019 Notes into an aggregate of \_\_\_\_\_ shares of our common stock immediately prior to the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on \_\_\_\_\_, 2019). In computing the number of shares beneficially owned by a person and the percentage ownership of that person, shares of common stock subject to warrants or other rights held by such person that are currently exercisable or will become exercisable within 60 days of June 30, 2019 are considered outstanding, although these shares are not considered outstanding for purposes of computing the percentage ownership of any other person.

Unless otherwise indicated, the address of each beneficial owner listed below is c/o Phathom Pharmaceuticals, Inc., 70 Willow Road, Suite 200, Menlo Park, California 94025. We believe, based on information provided to us, that each of the stockholders listed below has sole voting and investment power with respect to the shares beneficially owned by the stockholder unless noted otherwise, subject to community property laws where applicable.

Name of Beneficial Owner	Beneficial Ownership Prior to this Offering		Beneficial Ownership After this Offering	
	Number	Percent	Number	Percent
<b>5% or Greater Stockholders</b>				
Takeda Pharmaceutical Company Limited <sup>(1)</sup>	500,000	9.1%		
Frazier Life Sciences IX, L.P. <sup>(2)</sup>	2,250,000	41.1%		
<b>Executive Officers and Directors</b>				
David Socks <sup>(3)</sup>	778,000	14.2%		
Tadataka Yamada, M.D. <sup>(4)</sup>	778,000	14.2%		
Azmi Nabulsi, M.D., M.P.H. <sup>(5)</sup>	400,000	7.3%		
Aditya Kohli, Ph.D. <sup>(6)</sup>	389,000	7.1%		
James Topper, M.D., Ph.D. <sup>(2)</sup>	2,250,000	41.1%		
Jonathan Edwards, Ph.D.	—	—		
All executive officers and directors as a group (6 persons) <sup>(7)</sup>	4,595,000	83.9%		

\* Less than 1%.

(1) The number of shares beneficially owned after the offering includes 3,500,000 shares of common stock issuable upon the exercise of a warrant held directly by Takeda, which becomes exercisable upon the closing of this offering. The address for Takeda Pharmaceutical Company Limited is 1-1, Doshomachi 4-chome, Chuo-ku, Osaka 540-8645, Japan.

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- (2) The shares are held directly by Frazier Life Sciences IX, L.P., or FLS IX. The general partner of FLS IX is FHMLS IX, L.P., and the general partner of FHMLS IX, L.P. is FHMLS IX, L.L.C. James Topper, M.D., Ph.D., and Patrick Heron are the sole managing members of FHMLS IX, L.L.C. and share voting and investment power of the securities held by FLS IX. Dr. Topper and Mr. Heron disclaim beneficial ownership of such securities except to the extent of their pecuniary interest therein. The number of shares beneficially owned after the offering includes \_\_\_\_\_ shares of common stock issuable upon the conversion of May 2019 Notes in the aggregate principal amount of \$20,000,000 plus accrued interest held by Frazier Life Sciences IX, L.P. immediately prior to the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on \_\_\_\_\_, 2019). The address for FLS IX is 601 Union Street, Suite 3200, Seattle, WA 98101.
- (3) Consists of 778,000 shares of common stock held by the David A. Socks 2013 Revocable Trust, 547,032 of which were subject to a right of repurchase by us as of June 30, 2019. David Socks is a trustee of the David A. Socks 2013 Revocable Trust and in such capacity has the sole power to vote and dispose of such shares.
- (4) Consists of 778,000 shares of common stock held by Dr. Yamada, 547,032 of which were subject to a right of repurchase by us as of June 30, 2019.
- (5) Consists of 400,000 shares of common stock held by Dr. Nabulsi, all of which were subject to a right of repurchase by us as of June 30, 2019.
- (6) Consists of 389,000 shares of common stock held by Dr. Kohli, 273,516 of which were subject to a right of repurchase by us as of June 30, 2019.
- (7) Consists of the shares held by the executive officers and directors described in footnotes 2 through 6 above.

## DESCRIPTION OF CAPITAL STOCK

### General

The following description summarizes some of the terms of our amended and restated certificate of incorporation and amended and restated bylaws and of the Delaware General Corporation Law. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description you should refer to our amended and restated certificate of incorporation and amended and restated bylaws, copies of which have been filed as exhibits to the registration statement of which the prospectus is a part, as well as the relevant provisions of the Delaware General Corporation Law.

Following the closing of this offering, our authorized capital stock will consist of \_\_\_\_\_ shares of common stock, \$0.0001 par value per share, and \_\_\_\_\_ shares of preferred stock, \$0.0001 par value per share.

### Common Stock

As of June 30, 2019, there were 5,478,100 shares of our common stock outstanding, including 2,148,180 shares of restricted common stock which are subject to forfeiture or our right of repurchase as of June 30, 2019, and held of record by 20 stockholders. Based on the number of shares of common stock outstanding as of June 30, 2019, and assuming (i) the automatic conversion of the May 2019 Notes into an aggregate of \_\_\_\_\_ shares of our common stock immediately prior to the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on \_\_\_\_\_, 2019) and (ii) the issuance by us of \_\_\_\_\_ shares of common stock in this offering, there will be \_\_\_\_\_ shares of common stock outstanding upon the closing of this offering. Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders, including the election of directors, and do not have cumulative voting rights. Accordingly, the holders of a majority of the outstanding shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they so choose, other than any directors that holders of any preferred stock we may issue may be entitled to elect. Subject to the supermajority votes for some matters, other matters shall be decided by the affirmative vote of our stockholders having a majority in voting power of the votes cast by the stockholders present or represented and voting on such matter. Our amended and restated certificate of incorporation and amended and restated bylaws also provide that our directors may be removed only for cause and only by the affirmative vote of the holders of at least two-thirds in voting power of the outstanding shares of capital stock entitled to vote thereon. In addition, the affirmative vote of the holders of at least two-thirds in voting power of the outstanding shares of capital stock entitled to vote thereon is required to amend or repeal, or to adopt any provision inconsistent with, several of the provisions of our amended and restated certificate of incorporation. See below under “—Anti-Takeover Effects of Delaware Law and Our Certificate of Incorporation and Bylaws—Amendment of Charter Provisions.”

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of common stock are entitled to receive ratably those dividends, if any, as may be declared by the board of directors out of legally available funds. In the event of our liquidation, dissolution or winding up, the holders of common stock will be entitled to share ratably in the assets legally available for distribution to stockholders after the payment of or provision for all of our debts and other liabilities, subject to the prior rights of any preferred stock then outstanding. Holders of common stock have no preemptive or conversion rights or other subscription rights and there are no redemption or sinking funds provisions applicable to the common stock. All outstanding shares of common stock are, and the common stock to be outstanding upon the closing of this offering will be, duly authorized, validly issued, fully paid and



nonassessable. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

### **Preferred Stock**

As of the date of this prospectus, we do not have shares of preferred stock authorized or outstanding. Under the terms of our amended and restated certificate of incorporation, which will become effective immediately prior to the closing of this offering, our board of directors has the authority, without further action by our stockholders, to issue up to \_\_\_\_\_ shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the dividend, voting and other rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deterring or preventing a change in our control and may adversely affect the market price of the common stock and the voting and other rights of the holders of common stock. We have no current plans to issue any shares of preferred stock.

### **Warrants**

In May 2019, in connection with the Takeda License, we issued the Takeda Warrant to purchase 3,500,000 shares of our common stock with an exercise price of \$0.0001 per share. The Takeda Warrant contains a net exercise provision under which Takeda may, in lieu of payment of the exercise price in cash, surrender the warrant and receive a net amount of shares of our common stock based on the fair market value of our common stock at the time of the net exercise of the warrant after deduction of the aggregate exercise price. The Takeda Warrant expires ten years from its date of issuance, subject to its earlier termination upon the completion of certain mergers, acquisitions and similar transactions.

In May 2019, in connection with the Takeda License, we granted to Takeda the Takeda Warrant Right, pursuant to which Takeda has a right to receive an additional common stock warrant should Takeda's fully-diluted ownership represent less than a certain specified percentage of our fully-diluted capitalization, including shares issuable upon conversion of the outstanding May 2019 Notes in connection with this offering, calculated immediately prior to the closing of this offering. The Takeda Warrant Right will expire upon the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover of this prospectus).

In May 2019, in connection with the entry into the Loan Agreement, we issued to the lenders the Lender Warrants to purchase an aggregate of \_\_\_\_\_ shares of our common stock with an exercise price equal to \$ \_\_\_\_\_ per share (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus). The Lender Warrants only become exercisable if and when we borrow Term Loan B under our Loan Agreement. The Lender Warrants expire ten years from the date of issuance, subject to their earlier termination on September 30, 2020 if we do not draw down on Term Loan B on or before March 31, 2020. The Lender Warrants also include a put option pursuant to which, in the event that we do not draw down on Term Loan B on or before March 31, 2020, the lenders may require us to repurchase the Lender Warrants for a total aggregate repurchase price of \$500,000.

## **Registration Rights**

As of June 30, 2019, upon the closing of this offering holders of \_\_\_\_\_ shares of our common stock, which includes all of the shares of common stock issuable upon the automatic conversion of the May 2019 Notes, or their transferees, will be entitled to the following rights with respect to the registration of such shares for public resale under the Securities Act, pursuant to the 2019 Note Purchase Agreement by and among us and certain investors. In addition, upon the closing of this offering Takeda will be entitled to the same rights with respect to the registration of 3,500,000 shares of our common stock underlying the Takeda Warrant. The registration of shares of common stock as a result of the following rights being exercised would enable holders to trade these shares without restriction under the Securities Act when the applicable registration statement is declared effective.

### ***Demand Registration Rights***

*Form S-1.* If at any time beginning six months following the effective date of the registration statement of which this prospectus forms a part, the holders of at least 25% of the registrable securities request in writing that we effect a registration with respect to all or a part of the registrable securities then outstanding where the price to the public of the offering is \$10.0 million or more, we may be required to provide notice to all holders of registrable securities and to use commercially reasonable efforts to effect such registration; provided, however, that we will not be required to effect such a registration if, within the preceding 12 months, we have already effected two registrations for the holders of registrable securities in response to these demand registration rights, subject to certain exceptions.

*Form S-3.* If at any time we become entitled under the Securities Act to register our shares on Form S-3, the holders of at least 20% of the registrable securities request in writing that we effect a registration with respect to all or a part of the registrable securities then outstanding where the price to the public of the offering is \$3.0 million or more, we may be required to provide notice to all holders of registrable securities and to use commercially reasonable efforts to effect such registration; provided, however, that we will not be required to effect such a registration if, within the preceding 12 months, we have already effected two registrations on Form S-3 for the holders of registrable securities.

If the holders requesting registration intend to distribute their shares by means of an underwriting, the underwriter of such offering will have the right to limit the numbers of shares to be underwritten for reasons related to the marketing of the shares.

### ***Piggyback Registration Rights***

If at any time following the closing of this offering we propose to register any shares of our common stock under the Securities Act, subject to certain exceptions, the holders of registrable securities will be entitled to notice of the registration and to include their shares of registrable securities in the registration. If our proposed registration involves an underwriting, the managing underwriter of such offering will have the right to limit the number of shares to be underwritten for reasons related to the marketing of the shares.

## **Indemnification**

The 2019 Note Purchase Agreement contains customary cross indemnification provisions, under which we are obligated to indemnify holders of registrable securities in the event of material misstatements or omissions in a registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them.

### ***Expenses***

Ordinarily, other than underwriting discounts and commissions, we will be required to pay all expenses incurred by us related to any registration effected pursuant to the exercise of these registration rights. These expenses may include all registration and filing fees, printing expenses, fees and disbursements of our counsel, reasonable fees and disbursements of a counsel for the selling securityholders, blue sky fees and expenses and the expenses of any special audits incident to the registration.

### ***Termination of Registration Rights***

The registration rights terminate upon the earlier of: (i) five years after the closing of this offering or (ii) with respect to a particular holder, such time at which such holder can sell all shares held by it in compliance with Rule 144 under the Securities Act.

### ***Anti-Takeover Effects of Delaware Law and Our Certificate of Incorporation and Bylaws***

Some provisions of Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws contain provisions that could make the following transactions more difficult: an acquisition of us by means of a tender offer; an acquisition of us by means of a proxy contest or otherwise; or the removal of our incumbent officers and directors. It is possible that these provisions could make it more difficult to accomplish or could deter transactions that stockholders may otherwise consider to be in their best interest or in our best interests, including transactions which provide for payment of a premium over the market price for our shares.

These provisions, summarized below, are intended to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors. We believe that the benefits of the increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging these proposals because negotiation of these proposals could result in an improvement of their terms.

### ***Undesignated Preferred Stock***

The ability of our board of directors, without action by the stockholders, to issue up to \_\_\_\_\_ shares of undesignated preferred stock with voting or other rights or preferences as designated by our board of directors could impede the success of any attempt to change control of us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of our company.

### ***Stockholder Meetings***

Our amended and restated bylaws provide that a special meeting of stockholders may be called only by our chairman of the board of directors, chief executive officer or president, or by a resolution adopted by a majority of our board of directors.

### ***Requirements for Advance Notification of Stockholder Nominations and Proposals***

Our amended and restated bylaws establish advance notice procedures with respect to stockholder proposals to be brought before a stockholder meeting and the nomination of candidates for election as directors, other than nominations made by or at the direction of the board of directors or a committee of the board of directors.

### ***Elimination of Stockholder Action by Written Consent***

Our amended and restated certificate of incorporation and amended and restated bylaws eliminate the right of stockholders to act by written consent without a meeting.

### ***Staggered Board of Directors***

Our board of directors is divided into three classes. The directors in each class will serve for a three-year term, one class being elected each year by our stockholders. For more information on the classified board of directors, see “Management—Board Composition and Election of Directors.” This system of electing and removing directors may tend to discourage a third party from attempting to obtain control of us, because it generally makes it more difficult for stockholders to replace a majority of the directors.

### ***Removal of Directors***

Our amended and restated certificate of incorporation provides that no member of our board of directors may be removed from office except for cause and, in addition to any other vote required by law, upon the approval of not less than two thirds of the total voting power of all of our outstanding voting stock then entitled to vote in the election of directors.

### ***Stockholders Not Entitled to Cumulative Voting***

Our amended and restated certificate of incorporation does not permit stockholders to cumulate their votes in the election of directors. Accordingly, the holders of a majority of the outstanding shares of our common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they choose, other than any directors that holders of our preferred stock may be entitled to elect.

### ***Delaware Anti-Takeover Statute***

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits persons deemed to be “interested stockholders” from engaging in a “business combination” with a publicly held Delaware corporation for three years following the date these persons become interested stockholders unless the business combination is, or the transaction in which the person became an interested stockholder was, approved in a prescribed manner or another prescribed exception applies. Generally, an “interested stockholder” is a person who, together with affiliates and associates, owns, or within three years prior to the determination of interested stockholder status did own, 15% or more of a corporation’s voting stock. Generally, a “business combination” includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. The existence of this provision may have an anti-takeover effect with respect to transactions not approved in advance by the board of directors.

### ***Choice of Forum***

Our amended and restated certificate of incorporation provides that, unless we consent in writing to the selection of an alternative form, the Court of Chancery of the State of Delaware will be the sole and exclusive forum under Delaware statutory or common law: (i) any derivative action or proceeding brought on our behalf; (ii) any action asserting a claim of breach of a fiduciary duty or other wrongdoing by any of our directors, officers, employees or agents to us or our stockholders, creditors or other constituents; (iii) any action asserting a claim against us arising pursuant to any provision of the General Corporation Law of the State of Delaware or our amended and restated certificate of

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incorporation or amended and restated bylaws; (iv) any action to interpret, apply, enforce or determine the validity of our certificate of incorporation or bylaws; or (v) any action asserting a claim governed by the internal affairs doctrine. The provision would not apply to suits brought to enforce a duty or liability created by the Exchange Act as amended. In any case, stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder. Furthermore, our amended and restated certificate of incorporation will also provide that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable. Our restated certificate of incorporation also provides that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock will be deemed to have notice of and to have consented to this choice of forum provision.

### **Amendment of Charter Provisions**

The amendment of any of the above provisions, except for the provision making it possible for our board of directors to issue preferred stock, would require approval by holders of at least two thirds of the total voting power of all of our outstanding voting stock.

The provisions of Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in the composition of our board of directors and management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

### **Transfer Agent and Registrar**

The transfer agent and registrar for our common stock will be . The transfer agent and registrar's address is .

### **The Nasdaq Global Market Listing**

We intend to apply to have our common stock listed on the Nasdaq Global Market under the symbol "PHAT."

### **Limitations of Liability and Indemnification Matters**

For a discussion of liability and indemnification, see "Executive and Director Compensation—Limitations of Liability and Indemnification Matters."

## SHARES ELIGIBLE FOR FUTURE SALE

Immediately prior to this offering, there was no public market for our common stock. Future sales of substantial amounts of common stock in the public market, or the perception that such sales may occur, could adversely affect the market price of our common stock. Although we intend to apply to have our common stock listed on the Nasdaq Global Market, we cannot assure you that there will be an active public market for our common stock.

Based on the number of shares of our common stock outstanding as of June 30, 2019, and assuming (i) the issuance of \_\_\_\_\_ shares in this offering, (ii) the automatic conversion of the May 2019 Notes into an aggregate of \_\_\_\_\_ shares of our common stock immediately prior to the closing of this offering (based on an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and assuming the conversion occurs on \_\_\_\_\_, 2019), (iii) no exercise of the underwriters' option to purchase additional shares of common stock, and (iv) no exercise of outstanding warrants, we will have outstanding an aggregate of \_\_\_\_\_ shares of common stock.

Of these shares, all shares sold in this offering will be freely tradable without restriction or further registration under the Securities Act, except for any shares purchased by our "affiliates," as that term is defined in Rule 144 under the Securities Act. Shares purchased by our affiliates would be subject to the Rule 144 resale restrictions described below, other than the holding period requirement.

The remaining \_\_\_\_\_ shares of common stock will be "restricted securities," as that term is defined in Rule 144 under the Securities Act. These restricted securities are eligible for public sale only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rule 144 or 701 under the Securities Act, each of which is summarized below. We expect that substantially all of these shares will be subject to the 180-day lock-up period under the lock-up agreements described below.

In addition, 3,500,000 shares of common stock issuable to Takeda upon the exercise of the Takeda Warrant will become exercisable upon the closing of this offering. Upon exercise of the Takeda Warrant, these shares of common stock will be eligible for sale subject to the lock-up agreements described below and Rules 144 and 701 under the Securities Act.

### Lock-Up Agreements

We, our officers, directors and holders of substantially all of our securities, have agreed with the underwriters that for a period of 180 days, after the date of this prospectus, subject to specified exceptions, we or they will not offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to sale of, or otherwise dispose of or transfer any shares of common stock or any securities convertible into or exercisable or exchangeable for shares of common stock, request or demand that we file a registration statement related to our common stock or enter into any swap or other agreement that transfers to another, in whole or in part, directly or indirectly, the economic consequence of ownership of the common stock. Upon expiration of the lock-up period, certain of our stockholders will have the right to require us to register their shares under the Securities Act. See "—Registration Rights" below and "Description of Capital Stock—Registration Rights."

Goldman Sachs & Co. LLC, Jefferies LLC, and Evercore Group L.L.C. may, in their sole discretion and at any time or from time to time before the termination of the lock-up period, in certain cases without public notice, release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our stockholders who will

execute a lock-up agreement providing consent to the sale of shares prior to the expiration of the lock-up period.

Upon the expiration of the lock-up period, substantially all of the shares subject to such lock-up restrictions will become eligible for sale, subject to the limitations discussed above.

#### **Rule 10b5-1 Trading Plans**

Following the closing of this offering, certain of our officers, directors and significant stockholders may adopt written plans, known as Rule 10b5-1 trading plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis to diversify their assets and investments. Under these 10b5-1 trading plans, a broker may execute trades pursuant to parameters established by the officer, director or stockholder when entering into the plan, without further direction from such officer, director or stockholder. Such sales would not commence until the expiration of the applicable lock-up agreements entered into by such officer, director or stockholder in connection with this offering.

#### **Rule 144**

##### ***Affiliate Resales of Restricted Securities***

In general, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, a person who is an affiliate of ours, or who was an affiliate at any time during the 90 days before a sale, who has beneficially owned shares of our common stock for at least six months would be entitled to sell in "broker's transactions" or certain "riskless principal transactions" or to market makers, a number of shares within any three-month period that does not exceed the greater of:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately \_\_\_\_\_ shares immediately after this offering; or
- the average weekly trading volume in our common stock on the Nasdaq Global Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Affiliate resales under Rule 144 are also subject to the availability of current public information about us. In addition, if the number of shares being sold under Rule 144 by an affiliate during any three-month period exceeds 5,000 shares or has an aggregate sale price in excess of \$50,000, the seller must file a notice on Form 144 with the SEC and the Nasdaq Global Market concurrently with either the placing of a sale order with the broker or the execution of a sale directly with a market maker.

##### ***Non-Affiliate Resales of Restricted Securities***

In general, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, a person who is not an affiliate of ours at the time of sale, and has not been an affiliate at any time during the three months preceding a sale, and who has beneficially owned shares of our common stock for at least six months but less than a year, is entitled to sell such shares subject only to the availability of current public information about us. If such person has held our shares for at least one year, such person can resell under Rule 144(b)(1) without regard to any Rule 144 restrictions, including the 90-day public company requirement and the current public information requirement.

Non-affiliate resales are not subject to the manner of sale, volume limitation or notice filing provisions of Rule 144.

#### **Rule 701**

In general, under Rule 701, any of an issuer's employees, directors, officers, consultants or advisors who purchases shares from the issuer in connection with a compensatory stock or option plan

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or other written agreement before the effective date of a registration statement under the Securities Act is entitled to sell such shares 90 days after such effective date in reliance on Rule 144. An affiliate of the issuer can resell shares in reliance on Rule 144 without having to comply with the holding period requirement, and non-affiliates of the issuer can resell shares in reliance on Rule 144 without having to comply with the current public information and holding period requirements.

### **Equity Plans**

We intend to file one or more registration statements on Form S-8 under the Securities Act to register all shares of common stock subject to outstanding stock options and common stock issued or issuable under our equity incentive plans and employee stock purchase plan. We expect to file the registration statement covering shares offered pursuant to these stock plans shortly after the date of this prospectus, permitting the resale of such shares by non-affiliates in the public market without restriction under the Securities Act and the sale by affiliates in the public market subject to compliance with the resale provisions of Rule 144.

### **Registration Rights**

As of June 30, 2019, upon the closing of this offering holders of \_\_\_\_\_ shares of our common stock, which includes all of the shares of common stock issuable upon the automatic conversion of the May 2019 Notes, or their transferees will be entitled to various rights with respect to the registration of these shares under the Securities Act. In addition, upon the closing of this offering, Takeda will be entitled to the same rights with respect to the registration of 3,500,000 shares of our common stock underlying the Takeda Warrant. Registration of these shares under the Securities Act would result in these shares becoming fully tradable without restriction under the Securities Act immediately upon the effectiveness of the registration. See "Description of Capital Stock—Registration Rights" for additional information. Shares covered by a registration statement will be eligible for sale in the public market upon the expiration or release from the terms of the lock-up agreement.



## MATERIAL UNITED STATES FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following discussion is a summary of the material U.S. federal income tax consequences to Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of our common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or non-U.S. tax laws are not discussed. This discussion is based on the U.S. Internal Revenue Code of 1986, as amended, or the Code, Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service, or the IRS, in each case in effect as of the date hereof. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a Non-U.S. Holder of our common stock. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to Non-U.S. Holders that hold our common stock as a “capital asset” within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a Non-U.S. Holder’s particular circumstances, including the impact of the alternative minimum tax or the Medicare contribution tax on net investment income. In addition, it does not address consequences relevant to Non-U.S. Holders subject to special rules, including, without limitation:

- U.S. expatriates and former citizens or long-term residents of the United States;
- persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies, and other financial institutions;
- brokers, dealers or traders in securities;
- “controlled foreign corporations,” “passive foreign investment companies,” and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation;
- persons subject to special tax accounting rules as a result of any item of gross income with respect to our common stock being taken into account in an “applicable financial statement” (as defined in the Code);
- tax-qualified retirement plans; and
- “qualified foreign pension funds” as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds.

If an entity treated as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding our common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

**THIS DISCUSSION IS FOR INFORMATION PURPOSES ONLY AND IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.**

#### **Definition of a Non-U.S. Holder**

For purposes of this discussion, a “Non-U.S. Holder” is any beneficial owner of our common stock that is neither a “U.S. person” nor an entity treated as a partnership for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (i) is subject to the primary supervision of a U.S. court and the control of one or more “United States persons” (within the meaning of Section 7701(a)(30) of the Code), or (ii) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

#### **Distributions**

As described in the section entitled “Dividend Policy,” we do not anticipate declaring or paying dividends to holders of our common stock in the foreseeable future. However, if we do make distributions of cash or property on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder’s adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below under “—Sale or Other Taxable Disposition.”

Subject to the discussion below on effectively connected income, dividends paid to a Non-U.S. Holder of our common stock will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes a valid IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty rate). If a Non-U.S. Holder holds the stock through a financial institution or other agent acting on the Non-U.S. Holder’s behalf, the Non-U.S. Holder will be required to provide appropriate documentation to the agent, who then will be required to provide certification to the applicable withholding agent, either directly or through other intermediaries. A Non-U.S. Holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder’s conduct of a trade or business within the United States (and, if required by an applicable income tax

treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such dividends are attributable), the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States.

Any such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular rates. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected dividends, as adjusted for certain items. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

#### **Sale or Other Taxable Disposition**

A Non-U.S. Holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our common stock unless:

- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such gain is attributable);
- the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our common stock constitutes a U.S. real property interest, or USRPI, by reason of our status as a U.S. real property holding corporation, or USRPHC, for U.S. federal income tax purposes.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular rates. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

Gain described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty), which may be offset by U.S. source capital losses of the Non-U.S. Holder (even though the Non-U.S. Holder is not considered a resident of the United States), provided the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and do not anticipate becoming, a USRPHC. Because the determination of whether we are a USRPHC depends, however, on the fair market value of our USRPIs relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance we currently are not a USRPHC or will not become one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a Non-U.S. Holder of our common stock will not be subject to U.S. federal income tax if our common stock is "regularly traded," as defined by applicable Treasury Regulations, on an established securities market, and such Non-U.S. Holder owned, actually or constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the Non-U.S. Holder's holding period. If we are a USRPHC and either our common stock is not regularly traded on an established securities market or a Non-U.S. Holder holds, or is treated as holding, more than 5% of our outstanding common stock, directly or indirectly, during the applicable testing period, such Non-U.S. Holder will generally be taxed on any gain in the same manner as gain that is effectively connected with the conduct of a U.S. trade

or business, except that the branch profits tax generally will not apply. If we are a USRPHC and our common stock is not regularly traded on an established securities market, a Non-U.S. Holder's proceeds received on the disposition of shares will also generally be subject to withholding at a rate of 15%. Prospective investors are encouraged to consult their own tax advisors regarding the possible consequences to them if we are, or were to become, a USRPHC.

Non-U.S. Holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

### **Information Reporting and Backup Withholding**

Payments of dividends on our common stock will not be subject to backup withholding, provided the applicable withholding agent does not have actual knowledge or reason to know the holder is a United States person and the holder either certifies its non-U.S. status, such as by furnishing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI, or otherwise establishes an exemption. However, information returns are required to be filed with the IRS in connection with any dividends on our common stock paid to the Non-U.S. Holder, regardless of whether any tax was actually withheld. In addition, proceeds of the sale or other taxable disposition of our common stock within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting, if the applicable withholding agent receives the certification described above and does not have actual knowledge or reason to know that such holder is a United States person, or the holder otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS may also be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

### **Additional Withholding Tax on Payments Made to Foreign Accounts**

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections are commonly referred to as the Foreign Account Tax Compliance Act, or FATCA) on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on, or subject to the proposed Treasury Regulations discussed below, gross proceeds from the sale or other disposition of, our common stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (i) the foreign financial institution undertakes certain diligence and reporting obligations, (ii) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (iii) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in clause (i) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States owned foreign entities" (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

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Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends on our common stock. While withholding under FATCA would also have applied to payments of gross proceeds from the sale or other disposition of stock on or after January 1, 2019, recently proposed Treasury Regulations eliminate FATCA withholding on payments of gross proceeds entirely. Taxpayers generally may rely on these proposed Treasury Regulations until final Treasury Regulations are issued.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

## UNDERWRITING

We and the underwriters named below have entered into an underwriting agreement with respect to the shares being offered. Subject to certain conditions, each underwriter has severally agreed to purchase the number of shares indicated in the following table. Goldman Sachs & Co. LLC, Jefferies LLC, and Evercore Group L.L.C. are the representatives of the underwriters.

<u>Underwriters</u>	<u>Number of Shares</u>
Goldman Sachs & Co. LLC	
Jefferies LLC	
Evercore Group L.L.C.	
Total	

The underwriters are committed to take and pay for all of the shares being offered, if any are taken, other than the shares covered by the option described below unless and until this option is exercised.

The underwriters have an option to buy up to an additional \_\_\_\_\_ shares from us to cover sales by the underwriters of a greater number of shares than the total number set forth in the table above. They may exercise that option for 30 days. If any shares are purchased pursuant to this option, the underwriters will severally purchase shares in approximately the same proportion as set forth in the table above.

The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters by us. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase \_\_\_\_\_ additional shares.

	<u>No Exercise</u>	<u>Full Exercise</u>
Per Share	\$	\$
Total	\$	\$

Shares sold by the underwriters to the public will initially be offered at the initial public offering price set forth on the cover page of this prospectus. Any shares sold by the underwriters to securities dealers may be sold at a discount of up to \$ \_\_\_\_\_ per share from the initial public offering price. After the initial offering of the shares, the representatives may change the offering price and the other selling terms. The offering of the shares by the underwriters is subject to receipt and acceptance and subject to the underwriters' right to reject any order in whole or in part.

We and our officers, directors, and holders of substantially all of our securities have agreed with the underwriters, subject to certain exceptions, not to dispose of or hedge any of their common stock or securities convertible into or exchangeable for shares of common stock during the period from the date of this prospectus continuing through the date 180 days after the date of this prospectus, except with the prior written consent of the representatives. This agreement does not apply to any existing employee benefit plans. See "Shares Eligible for Future Sale" for a discussion of certain transfer restrictions.

Prior to the offering, there has been no public market for the shares. The initial public offering price will be negotiated among our company and the representatives. Among the factors to be considered in determining the initial public offering price of the shares, in addition to prevailing market conditions, will be our historical performance, estimates of our business potential and earnings prospects, an assessment of our management and the consideration of the above factors in relation to market valuation of companies in related businesses.

We intend to apply to have our common stock listed on the Nasdaq Global Market under the symbol "PHAT."

In connection with the offering, the underwriters may purchase and sell shares of our common stock in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering, and a short position represents the amount of such sales that have not been covered by subsequent purchases. A "covered short position" is a short position that is not greater than the amount of additional shares for which the underwriters' option described above may be exercised. The underwriters may cover any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to cover the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase additional shares pursuant to the option described above. "Naked" short sales are any short sales that create a short position greater than the amount of additional shares for which the option described above may be exercised. The underwriters must cover any such naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of common stock made by the underwriters in the open market prior to the completion of the offering.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

Purchases to cover a short position and stabilizing transactions, as well as other purchases by the underwriters for their own accounts, may have the effect of preventing or retarding a decline in the market price of our stock, and together with the imposition of the penalty bid, may stabilize, maintain or otherwise affect the market price of the common stock. As a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. The underwriters are not required to engage in these activities and may end any of these activities at any time. These transactions may be effected on the Nasdaq Global Market, in the OTC market or otherwise.

We estimate that our share of the total expenses of the offering, excluding underwriting discounts and commissions, will be approximately \$ . We have also agreed to reimburse the underwriters for certain expenses incurred by them in connection with the offering.

We have agreed to indemnify the several underwriters against certain liabilities, including liabilities under the Securities Act.

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. Certain of the underwriters and their respective affiliates have provided, and may in the future provide, a variety of these services to the issuer and to persons and entities with relationships with the issuer, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and their respective affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments

and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own account and for the accounts of their customers, and such investment and trading activities may involve or relate to assets, securities and/or instruments of the issuer (directly, as collateral securing other obligations or otherwise) and/or persons and entities with relationships with the issuer. The underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

### **European Economic Area**

Any distributor subject to MiFID II that is offering, selling or recommending the shares of common stock is responsible for undertaking its own target market assessment in respect of the shares of common stock and determining its own distribution channels for the purposes of the MiFID product governance rules under Commission Delegated Directive (EU) 2017/593 (“Delegated Directive”). Neither we nor the underwriters make any representations or warranties as to a distributor’s compliance with the Delegated Directive.

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a “Relative Member State”) an offer to the public of our common shares may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of our common shares may be made at any time under the following exemptions under the Prospectus Directive:

- To any legal entity which is a qualified investor as defined in the Prospectus Directive;
- To fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the Representatives for any such offer; or
- In any other circumstances falling within Article 3(2) of the Prospectus Directive;

provided that no such offer or shares of our common stock shall result in a requirement for the publication by us or any Brazilian placement agent of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an “offer to public” in relation to our common shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and our common shares to be offered so as to enable an investor to decide to purchase our common shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression “Prospectus Directive” means Directive 2003/71/EC (as amended), including by Directive 2010/73/EU and includes any relevant implementing measure in the Relevant Member State.

This European Economic Area selling restriction is in addition to any other selling restrictions set out below.

### **United Kingdom**

In the United Kingdom, this prospectus is only addressed to and directed as qualified investors who are (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the Order); or (ii) high net worth entities and other persons



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to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as “relevant persons”). Any investment or investment activity to which this prospectus relates is available only to relevant persons and will only be engaged with relevant persons. Any person who is not a relevant person should not act or rely on this prospectus or any of its contents.

### **Canada**

The securities may be sold in Canada only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions, and Ongoing Registrant Obligations. Any resale of the securities must be made in accordance with an exemption form, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser’s province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser’s province or territory of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

### **Hong Kong**

The shares may not be offered or sold in Hong Kong by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32 of the Laws of Hong Kong) (“Companies (Winding Up and Miscellaneous Provisions) Ordinance”) or which do not constitute an invitation to the public within the meaning of the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) (“Securities and Futures Ordinance”), or (ii) to “professional investors” as defined in the Securities and Futures Ordinance and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a “prospectus” as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance, and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” in Hong Kong as defined in the Securities and Futures Ordinance and any rules made thereunder.

### **Singapore**

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor (as defined under Section 4A of the Securities and Futures Act, Chapter 289 of

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Singapore (the “SFA”) under Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to conditions set forth in the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor, the securities (as defined in Section 239(1) of the SFA) of that corporation shall not be transferable for 6 months after that corporation has acquired the shares under Section 275 of the SFA except: (i) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (ii) where such transfer arises from an offer in that corporation’s securities pursuant to Section 275(1A) of the SFA, (iii) where no consideration is or will be given for the transfer, (iv) where the transfer is by operation of law, (v) as specified in Section 276(7) of the SFA, or (vi) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore (“Regulation 32”).

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is a trust (where the trustee is not an accredited investor (as defined in Section 4A of the SFA)) whose sole purpose is to hold investments and each beneficiary of the trust is an accredited investor, the beneficiaries’ rights and interest (howsoever described) in that trust shall not be transferable for 6 months after that trust has acquired the shares under Section 275 of the SFA except: (i) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (ii) where such transfer arises from an offer that is made on terms that such rights or interest are acquired at a consideration of not less than S\$200,000 (or its equivalent in a foreign currency) for each transaction (whether such amount is to be paid for in cash or by exchange of securities or other assets), (iii) where no consideration is or will be given for the transfer, (iv) where the transfer is by operation of law, (v) as specified in Section 276(7) of the SFA, or (vi) as specified in Regulation 32.

### **Japan**

The securities have not been and will not be registered under the Financial Instruments and Exchange Act of Japan (Act No. 25 of 1948, as amended), or the FIEA. The securities may not be offered or sold, directly or indirectly, in Japan or to or for the benefit of any resident of Japan (including any person resident in Japan or any corporation or other entity organized under the laws of Japan) or to others for reoffering or resale, directly or indirectly, in Japan or to or for the benefit of any resident of Japan, except pursuant to an exemption from the registration requirements of the FIEA and otherwise in compliance with any relevant laws and regulations of Japan.

### **Australia**

This prospectus is not a disclosure document for the purposes of Australia’s Corporations Act 2001 (Cth) of Australia, or Corporations Act, has not been lodged with the Australian Securities & Investments Commission and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus in Australia:

You confirm and warrant that you are either:

- a “sophisticated investor” under section 708(8)(a) or (b) of the Corporations Act;

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- a “sophisticated investor” under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant’s certificate to the Company which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made;
- a person associated with the Company under Section 708(12) of the Corporations Act; or
- a “professional investor” within the meaning of section 708(11)(a) or (b) of the Corporations Act.

To the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor, associated person or professional investor under the Corporations Act any offer made to you under this prospectus is void and incapable of acceptance.

You warrant and agree that you will not offer any of the securities issued to you pursuant to this prospectus for resale in Australia within 12 months of those securities being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

### **Israel**

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, or the Securities Law, and has not been filed with or approved by the Israel Securities Authority. In Israel, this prospectus is being distributed only to, and is directed only at, and any offer of the shares is directed only at, (i) a limited number of persons in accordance with the Israeli Securities Law and (ii) investors listed in the first addendum, or the Addendum, to the Israeli Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and “qualified individuals,” each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case, purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors are required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

### **Switzerland**

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (“SIX”) or on any other stock exchange or regulated trading facility in Switzerland. This prospectus has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this prospectus nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus nor any other offering or marketing material relating to the offering, our company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (“CISA”). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

## LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Latham & Watkins LLP, San Diego, California. The underwriters are being represented by Cooley LLP, San Diego, California.

## EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our combined financial statements at December 31, 2018 and for the year then ended, as set forth in their report (which contains an explanatory paragraph describing conditions that raise substantial doubt about Phathom Pharmaceuticals, Inc.'s ability to continue as a going concern as described in Note 1 to the combined financial statements). We have included our combined financial statements in the prospectus and elsewhere in the registration statement in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits and schedules filed therewith. For further information about us and the common stock offered hereby, we refer you to the registration statement and the exhibits and schedules filed thereto. Statements contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement. Upon the closing of this offering, we will be required to file periodic reports, proxy statements and other information with the SEC pursuant to the Exchange Act. The SEC maintains an Internet website that contains reports, proxy statements and other information about registrants, like us, that file electronically with the SEC. The address of that site is [www.sec.gov](http://www.sec.gov).

Upon the closing of this offering, we will become subject to the information and periodic reporting requirements of the Exchange Act and, in accordance therewith, will file periodic reports, proxy statements and other information with the SEC. Such periodic reports, proxy statements and other information will be available at the website of the SEC referred to above. We maintain a website at [www.phathompharma.com](http://www.phathompharma.com). Upon the closing of this offering, you may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The reference to our website address does not constitute incorporation by reference of the information contained on our website, and you should not consider the contents of our website in making an investment decision with respect to our common stock.

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PHATHOM PHARMACEUTICALS, INC.

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**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Stockholders and the Board of Directors of  
Phathom Pharmaceuticals, Inc.

***Opinion on the Financial Statements***

We have audited the accompanying combined balance sheet of Phathom Pharmaceuticals, Inc. (the Company) as of December 31, 2018, the related combined statement of operations, stockholders' deficit and cash flows for the year then ended, and the related notes (collectively referred to as the "combined financial statements"). In our opinion, the combined financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018, and the results of its operations and its cash flows for the year then ended in conformity with U.S. generally accepted accounting principles.

***The Company's Ability to Continue as a Going Concern***

The accompanying combined financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has incurred net losses and negative cash flows from operating activities since its inception, and has stated that substantial doubt exists about the Company's ability to continue as a going concern. Management's evaluation of the events and conditions and management's plans regarding these matters are also described in Note 1. The combined financial statements do not include any adjustments that might result from the outcome of these uncertainties.

***Basis for Opinion***

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audit included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audit provides a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2019.

San Diego, California

July 26, 2019

**PHATHOM PHARMACEUTICALS, INC.**  
**COMBINED BALANCE SHEETS**  
(in thousands, except share and par value data)

	December 31, 2018	June 30, 2019 (unaudited)	Pro Forma June 30, 2019 (unaudited)
<b>Assets</b>			
Current assets:			
Cash and cash equivalents	\$ 879	\$ 82,917	
Prepaid expenses and other current assets (including related party amounts of \$19 and \$15, respectively)	23	1,625	
Total current assets	902	84,542	
Other assets	—	337	
Total assets	<u>\$ 902</u>	<u>\$ 84,879</u>	
<b>Liabilities and Stockholders' Deficit</b>			
Current liabilities:			
Accounts payable (including related party amounts of \$45 and \$31, respectively)	\$ 55	\$ 450	
Accrued expenses (including related party amounts of \$2 and \$19, respectively)	170	995	
Accrued interest (including related party amounts of \$13 and \$82, respectively)	13	967	\$
Convertible promissory notes payable at fair value (including related party amounts of \$1,950 and \$20,552, respectively)	1,950	92,743	
Warrant liabilities (including related party amounts of (\$0 and \$49,171, respectively))	—	49,597	
Total current liabilities	2,188	144,752	
Long-term debt, net of discount	—	22,449	
Other long-term liabilities	—	2,063	
Total liabilities	2,188	169,264	
Commitments and contingencies (Note 3)			
Stockholders' deficit:			
Common stock, \$0.0001 par value; authorized shares—10,000,000 at June 30, 2019 (unaudited); issued shares—5,478,100 at June 30, 2019 (unaudited); outstanding shares—3,329,920 at June 30, 2019 (unaudited); and shares issued and outstanding, respectively, pro forma (unaudited)	—	—	
Additional paid-in capital	2	5,916	
Accumulated deficit	(1,288)	(90,301)	
Total stockholders' deficit	(1,286)	(84,385)	\$
Total liabilities and stockholders' deficit	<u>\$ 902</u>	<u>\$ 84,879</u>	

*See accompanying notes.*

**PHATHOM PHARMACEUTICALS, INC.**  
**COMBINED STATEMENTS OF OPERATIONS**  
**(in thousands, except share and per share data)**

	Year Ended December 31, 2018	Six Months Ended June 30,	
		2018	2019
		(unaudited)	
Operating expenses:			
Research and development	\$ 20	\$ —	\$ 3,201
In-process research and development	—	—	78,897
General and administrative (includes related party amounts of \$321, \$124 and \$18, respectively)	1,205	506	2,142
Total operating expenses	<u>1,225</u>	<u>506</u>	<u>84,240</u>
Loss from operations	(1,225)	(506)	(84,240)
Other income (expense):			
Interest income	—	—	101
Interest expense (includes related party amounts of \$(13), \$(4) and \$(82), respectively)	(13)	(4)	(1,148)
Change in fair value of warrant liabilities (includes related party amounts of \$0, \$0 and \$(1,277), respectively)	—	—	(1,284)
Change in fair value of convertible promissory notes (includes related party amounts of \$(50), \$(4) and \$(502), respectively)	(50)	(4)	(2,442)
Total other income (expense)	<u>(63)</u>	<u>(8)</u>	<u>(4,773)</u>
Net loss	<u>\$ (1,288)</u>	<u>\$ (514)</u>	<u>\$ (89,013)</u>
Net loss per share, basic and diluted	<u>\$ (0.46)</u>	<u>\$ (0.21)</u>	<u>\$ (29.06)</u>
Weighted-average shares of common stock outstanding, basic and diluted	<u>2,791,364</u>	<u>2,459,074</u>	<u>3,062,913</u>
Pro forma net loss per share, basic and diluted (unaudited)	<u>\$</u>	<u>\$</u>	<u>\$</u>
Pro forma weighted-average shares of common stock outstanding, basic and diluted (unaudited)	<u></u>	<u></u>	<u></u>

*See accompanying notes.*



**PHATHOM PHARMACEUTICALS, INC.**  
**COMBINED STATEMENTS OF STOCKHOLDERS' DEFICIT**  
(in thousands, except share data)

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount			
Combined balance at January 1, 2018	-	\$ -	\$ -	\$ -	\$ -
Issuance of common stock to founders	-	-	2	-	2
Net loss	-	-	-	(1,288)	(1,288)
Combined balance at December 31, 2018	-	-	2	(1,288)	(1,286)
Merger of entities under common control into the Company (unaudited)	3,118,236	-	-	-	-
Vesting restrictions placed on previously issued and outstanding common stock (unaudited)	(1,556,000)	-	-	-	-
Issuance of common stock (unaudited)	687,764	-	-	-	-
Issuance of common stock in connection with license agreement (unaudited)	500,000	-	5,885	-	5,885
Vesting of restricted shares (unaudited)	579,920	-	-	-	-
Stock-based compensation (unaudited)	-	-	29	-	29
Net loss (unaudited)	-	-	-	(89,013)	(89,013)
Balance at June 30, 2019 (unaudited)	<u>3,329,920</u>	<u>\$ -</u>	<u>\$ 5,916</u>	<u>\$ (90,301)</u>	<u>\$ (84,385)</u>

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount			
Combined balance at January 1, 2018	-	\$ -	\$ -	\$ -	\$ -
Issuance of common stock to founders (unaudited)	-	-	2	-	2
Net loss (unaudited)	-	-	-	(514)	(514)
Combined balance at June 30, 2018 (unaudited)	<u>-</u>	<u>\$ -</u>	<u>\$ 2</u>	<u>\$ (514)</u>	<u>\$ (512)</u>

*See accompanying notes.*

**PHATHOM PHARMACEUTICALS, INC.**  
**COMBINED STATEMENTS OF CASH FLOWS**  
(in thousands)

	Year Ended December 31, 2018	Six Months Ended June 30,	
		2018	2019
		(unaudited)	
<b>Cash flows from operating activities</b>			
Net loss	\$ (1,288)	\$ (514)	\$ (89,013)
Adjustments to reconcile net loss to net cash used in operating activities:			
Stock-based compensation	—	—	29
Amortization of debt discount	—	—	81
Acquired in-process research and development	—	—	78,897
Change in fair value of warrant liabilities (includes related party amounts of \$0, \$0 and \$1,277, respectively)	—	—	1,284
Change in fair value of convertible promissory notes (includes related party amounts of \$50, \$4 and \$502, respectively)	50	4	2,442
Changes in operating assets and liabilities:			
Prepaid expenses and other current assets (includes related party amounts of \$(19), \$(13) and \$4, respectively)	(23)	(18)	(1,602)
Accounts payable and accrued expenses (includes related party amounts of \$47, \$54 and \$3, respectively)	225	72	883
Accrued interest (includes related party amounts of \$13, \$4 and \$82, respectively)	13	4	981
Net cash used in operating activities	(1,023)	(452)	(6,018)
<b>Cash flows from investing activities</b>			
Cash paid for purchased in-process research and development	—	—	(25,118)
Net cash used in investing activities	—	—	(25,118)
<b>Cash flows from financing activities</b>			
Proceeds from issuance of common stock	2	2	—
Proceeds from issuance of convertible promissory notes	1,900	550	88,324
Proceeds from issuance of long-term debt	—	—	24,850
Net cash provided by financing activities	1,902	552	113,174
Net increase in cash	879	100	82,038
Cash and cash equivalents—beginning of period	—	—	879
Cash and cash equivalents—end of period	\$ 879	\$ 100	\$ 82,917
<b>Supplemental disclosure of cash flow information</b>			
Interest paid	\$ —	\$ —	\$ 86
<b>Supplemental disclosure of noncash investing and financing activities</b>			
Exchange of accrued interest for convertible promissory notes	\$ —	\$ —	\$ 27
Issuance of Takeda Warrants in connection with Takeda License	\$ —	\$ —	\$ 47,894
Issuance of common stock in connection with Takeda License	\$ —	\$ —	\$ 5,885
Issuance of common stock warrants in connection with long-term debt	\$ —	\$ —	\$ 419
Unpaid initial public offering costs	\$ —	\$ —	\$ 337
Final interest payment fee	\$ —	\$ —	\$ 2,063

See accompanying notes.

**PHATHOM PHARMACEUTICALS, INC.**  
**NOTES TO COMBINED FINANCIAL STATEMENTS**

(Information as of June 30, 2019 and thereafter and for the six months ended June 30, 2018 and 2019 is unaudited)

**1. Organization, Basis of Presentation and Summary of Significant Accounting Policies**

***Organization***

Phathom Pharmaceuticals, Inc. (the “Company” or “Phathom”) was incorporated in the state of Delaware in January 2018 under the name North Bridge IV, Inc. On March 13, 2019, the Company changed its name to Phathom Pharmaceuticals, Inc. and merged with YamadaCo IIA, Inc. (“YamadaCo”), a Delaware corporation formed in September 2017, with Phathom being the surviving entity (the “Merger”). All activities of YamadaCo prior to 2018 related to formation and were insignificant. The Company is a late clinical-stage biopharmaceutical company focused on developing and commercializing novel treatments for gastrointestinal diseases.

***Stock Split and Conversion***

During 2018, both the Company and YamadaCo issued 1,000 shares of common stock at a purchase price of \$1.00 per share, and had no other capital transactions prior to the Merger. Immediately prior to the Merger, the Company effected a 1,559.1183-for-1 forward stock split for each outstanding share of its common stock and, effective upon the closing of the Merger, each issued and outstanding share of YamadaCo was converted into 1,559.1183 shares of the Company’s common stock. Upon completion of the Merger, the Company had 3,118,236 shares of common stock outstanding, with the prior stockholders of each YamadaCo and Phathom holding an equal number of shares. The accompanying combined financial statements and notes to the combined financial statements give retroactive effect to the forward stock split and conversion for all periods presented.

***Basis of Presentation***

The Company’s combined financial statements are prepared in accordance with U.S. generally accepted accounting principles (“GAAP”). The accompanying combined financial statements include the accounts of the Company (the receiving entity) and YamadaCo, prior to the Merger. The Company and YamadaCo were entities under the common control of Frazier Life Sciences IX, L.P. (“Frazier”) as a result of, among others, Frazier’s; (i) ownership of a majority of the outstanding capital stock of both companies, (ii) financing of both companies, (iii) control of board of directors of both companies, and (iv) management of both companies. Both the Company and YamadaCo were formed for the purpose of identifying potential assets around which to form an operating company. As the merged entities were under common control, the combined financial statements report the financial position, results of operations and cash flows of the Company and YamadaCo as though the transfer of net assets and equity interests had occurred at the beginning of 2018. All intercompany accounts and transactions have been eliminated in combination.

***Liquidity and Capital Resources***

From inception to June 30, 2019, the Company has devoted substantially all of its efforts to organizing and staffing the Company, business planning, raising capital, in-licensing its initial product candidate, vonoprazan, meeting with regulatory authorities, and preparing for the planned Phase 3 clinical trials of vonoprazan. The Company has a limited operating history, has never generated any revenue, and the sales and income potential of its business is unproven. The Company has incurred net losses and negative cash flows from operating activities since its inception and expects to continue to incur net losses into the foreseeable future as it continues the development and commercialization

**PHATHOM PHARMACEUTICALS, INC.**  
**NOTES TO COMBINED FINANCIAL STATEMENTS—(CONTINUED)**  
**(Information as of June 30, 2019 and thereafter and for the six months ended June 30, 2018 and 2019 is unaudited)**

of vonoprazan. From inception to June 30, 2019, the Company has funded its operations through the issuance of convertible promissory notes and commercial bank debt.

The accompanying combined financial statements have been prepared assuming the Company will continue as a going concern, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business, and do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or amounts and classification of liabilities that may result from the outcome of this uncertainty. Management is required to perform a two-step analysis over the Company's ability to continue as a going concern. Management must first evaluate whether there are conditions and events that raise substantial doubt about the Company's ability to continue as a going concern (Step 1). If management concludes that substantial doubt is raised, management is also required to consider whether its plans alleviate that doubt (Step 2). Management has prepared cash flow forecasts which indicate that based on the Company's expected operating losses, negative cash flows and maturities of outstanding convertible promissory notes, there is substantial doubt about the Company's ability to continue as a going concern for twelve months after the date the combined financial statements for the year ended December 31, 2018 and the six months ended June 30, 2019 are issued.

The Company's ability to continue as a going concern is dependent upon its ability to raise additional funding. Management plans to raise additional capital through equity offerings, the Company's existing loan and security agreement, debt financings, or other capital sources, including potential collaborations, licenses and other similar arrangements. While management believes this plan to raise additional funds will alleviate the conditions that raise substantial doubt, these plans are not entirely within its control and cannot be assessed as being probable of occurring. The Company may not be able to secure additional financing in a timely manner or on favorable terms, if at all. Furthermore, if the Company issues equity securities to raise additional funds, its existing stockholders may experience dilution, and the new equity securities may have rights, preferences and privileges senior to those of the Company's existing stockholders. If the Company raises additional funds through collaboration, licensing or other similar arrangements, it may be necessary to relinquish valuable rights to its potential products on terms that are not favorable to the Company. If the Company is unable to raise capital when needed or on attractive terms, it would be forced to delay, reduce or eliminate its research and development programs or other operations. If any of these events occur, the Company's ability to achieve the development and commercialization goals would be adversely affected.

***Use of Estimates***

The preparation of the Company's combined financial statements requires it to make estimates and assumptions that impact the reported amounts of assets, liabilities and expenses and the disclosure of contingent assets and liabilities in the Company's combined financial statements and accompanying notes. The most significant estimates in the Company's combined financial statements relate to accruals for research and development expenses, and the valuation of convertible promissory notes, warrant liabilities and various other equity instruments. Although these estimates are based on the Company's knowledge of current events and actions it may undertake in the future, actual results could differ materially from those estimates and assumptions.

***Unaudited Interim Financial Information***

The accompanying interim balance sheet as of June 30, 2019, the combined statements of operations and cash flows for the six months ended June 30, 2018 and 2019 and the combined

PHATHOM PHARMACEUTICALS, INC.

NOTES TO COMBINED FINANCIAL STATEMENTS—(CONTINUED)

(Information as of June 30, 2019 and thereafter and for the six months ended June 30, 2018 and 2019 is unaudited)

statement of stockholders' deficit for the six months ended June 30, 2018 and 2019 and the related footnote disclosures are unaudited. In management's opinion, the unaudited interim financial statements have been prepared on the same basis as the audited combined financial statements and include all adjustments, which include only normal recurring adjustments, necessary for the fair presentation of the Company's financial position as of June 30, 2019 and its results of operations and cash flows for the six months ended June 30, 2018 and 2019 in accordance with GAAP. The results for the six months ended June 30, 2019 are not necessarily indicative of the results expected for the full fiscal year or any other interim period.

**Unaudited Pro Forma Balance Sheet Information**

The unaudited pro forma balance sheet information as of June 30, 2019 in the accompanying combined balance sheet gives effect to: (i) the automatic conversion of all outstanding convertible promissory notes and related accrued interest (see Note 4) into \_\_\_\_\_ shares of common stock (assuming an initial public offering ("IPO") price of \$ \_\_\_\_\_ per share, which is the midpoint of the price range set forth on the cover page of this prospectus and assuming the conversion occurs on \_\_\_\_\_ 2019), the expected closing date of the Company's IPO, and (ii) the reclassification of the Takeda Warrant to stockholders' equity. Shares of common stock issued in the IPO and any related net proceeds are excluded from the pro forma information.

**Fair Value Option**

As permitted under Accounting Standards Codification ("ASC") 825, *Financial Instruments*, ("ASC 825"), the Company has elected the fair value option to account for its convertible promissory notes issued since inception. In accordance with ASC 825, the Company records these convertible promissory notes at fair value with changes in fair value recorded in the combined statements of operations. As a result of applying the fair value option, direct costs and fees related to the convertible promissory notes were recognized in earnings as incurred and not deferred.

**Fair Value Measurements**

The accounting guidance defines fair value, establishes a consistent framework for measuring fair value and expands disclosure for each major asset and liability category measured at fair value on either a recurring or non-recurring basis. Fair value is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the accounting guidance establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

- Level 1: Observable inputs such as quoted prices in active markets.
- Level 2: Inputs, other than the quoted prices in active markets that are observable either directly or indirectly.
- Level 3: Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

The carrying amounts of the Company's financial instruments, including cash and cash equivalents classified within the Level 1 designation discussed above, prepaid and other current

**PHATHOM PHARMACEUTICALS, INC.**  
**NOTES TO COMBINED FINANCIAL STATEMENTS—(CONTINUED)**

(Information as of June 30, 2019 and thereafter and for the six months ended June 30, 2018 and 2019 is unaudited)

assets, accounts payable, and accrued liabilities, approximate fair value due to their short maturities. Warrant liabilities and convertible promissory notes are recorded at fair value on a recurring basis.

The Company has no financial assets measured at fair value on a recurring basis. None of the Company's non-financial assets or liabilities are recorded at fair value on a non-recurring basis. No transfers between levels have occurred during the periods presented.

Liabilities measured at fair value on a recurring basis are as follows (in thousands):

	Total	Fair Value Measurements at Reporting Date Using:		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
As of December 31, 2018:				
Convertible promissory notes	\$ 1,950	\$ —	\$ —	\$ 1,950
As of June 30, 2019:				
Warrant liabilities	\$ 49,597	\$ —	\$ —	\$ 49,597
Convertible promissory notes	92,743	—	—	92,743
Total	\$ 142,340	\$ —	\$ —	\$ 142,340

The warrant liabilities consist of an issued and outstanding common stock warrant (the "Takeda Warrant") and a right to receive an additional common stock warrant (the "Takeda Warrant Right", and together with the Takeda Warrant, the "Takeda Warrants") issued to Takeda Pharmaceutical Company Limited ("Takeda") in connection with a May 2019 license agreement (see Note 3) and warrants (the "Lender Warrants") issued in connection with a loan and security agreement for commercial bank debt (see Note 5). The Takeda Warrants are accounted for as liabilities as they do not meet all the conditions for equity classification due to (i) insufficient authorized shares for the Takeda Warrant and (ii) the Takeda Warrant Right is not indexed to the Company's own stock. The Lender Warrants are accounted for as liabilities as they contain a holder put right under which the lenders could require the Company to pay cash in exchange for the warrants. The fair value of the Takeda Warrants is derived from the model used to estimate the fair value the Company's common stock (see Note 6). The fair value of the Lender Warrants is estimated using a probability-weighted model considering IPO and non-IPO scenarios. The IPO scenarios utilize a binomial lattice model to estimate a distribution of total equity values as of a projected IPO date. The non-IPO scenario utilizes the repurchase price associated with the warrant put right discounted to present value based on venture capital rates of return and the term associated with the put right. As of June 30, 2019, the fair value of the Takeda Warrants was \$49.2 million and the fair value of the Lender Warrants was \$0.4 million.

As further described in Note 4, the Company issued convertible promissory notes to Frazier (the "Frazier Notes") from January 2018 to April 2019 and issued convertible promissory notes in May 2019 (the "May 2019 Notes") to investors including Frazier. The Company has elected the fair value option for each of its convertible promissory note issuances. The fair value of the Frazier Notes was estimated using a scenario-based analysis that estimated the fair value of the convertible promissory notes based on the probability-weighted present value of expected future investment returns, considering possible

**PHATHOM PHARMACEUTICALS, INC.**  
**NOTES TO COMBINED FINANCIAL STATEMENTS—(CONTINUED)**  
**(Information as of June 30, 2019 and thereafter and for the six months ended June 30, 2018 and 2019 is unaudited)**

outcomes available to the noteholders, including conversions in subsequent equity financings, change of control transactions, settlement and dissolution. The fair value of the May 2019 Notes is estimated using a scenario-based analysis that estimates the fair value of the convertible promissory notes based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available to the noteholders, including various IPO, settlement, equity financing, corporate transaction and dissolution scenarios. As of December 31, 2018, the fair value of the Frazier Notes was \$2.0 million and the Frazier Notes were exchanged for May 2019 Notes in May 2019. As of June 30, 2019, the fair value of the May 2019 Notes was \$92.7 million.

The Company adjusts the carrying value of its warrant liabilities and convertible promissory notes to their estimated fair value at each reporting date, with any related increases or decreases in the fair value recorded as change in fair value of warrant liabilities and change in fair value of convertible promissory notes, respectively, in the combined statements of operations.

The following table provides a reconciliation of all liabilities measured at fair value using Level 3 significant unobservable inputs (in thousands):

	<u>Warrant Liabilities</u>	<u>Convertible Promissory Notes</u>
Balance at January 1, 2018	\$ —	\$ —
Issuance of convertible promissory notes	—	1,900
Change in fair value	—	50
Balance at December 31, 2018	—	1,950
Issuance of convertible promissory notes	—	90,750
Exchange of convertible promissory notes (Note 4)	—	(2,399)
Issuance of warrants	48,313	—
Change in fair value	1,284	2,442
Balance at June 30, 2019	<u>\$49,597</u>	<u>\$ 92,743</u>

#### **Cash and Cash Equivalents**

The Company considers all highly liquid investments with original maturities of three months or less when purchased to be cash equivalents. Cash and cash equivalents include cash in readily available checking accounts and money market funds.

#### **Concentrations of Credit Risk**

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash and cash equivalents. The Company maintains deposits in federally insured financial institutions in excess of federally insured limits. The Company has not experienced any losses in such accounts and management believes that the Company is not exposed to significant credit risk due to the financial position of the depository institutions in which those deposits are held.

#### **Deferred Offering Costs**

The Company has deferred offering costs consisting of legal, accounting and other fees and costs directly attributable to its planned IPO. The deferred offering costs will be offset against the

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proceeds received upon the completion of the planned IPO. In the event the planned IPO is terminated, all of the deferred offering costs will be expensed within the Company's statements of operations. As of June 30, 2019, \$0.3 million of deferred offering costs were recorded within other long-term assets on the balance sheet. No such costs were included on the combined balance sheet as of December 31, 2018.

***Research and Development Expenses and Accruals***

All research and development costs are expensed in the period incurred and consist primarily of salaries, payroll taxes, employee benefits, stock-based compensation charges for those individuals involved in research and development efforts, external research and development costs incurred under agreements with contract research organizations and consultants to conduct and support the Company's planned clinical trials of vonoprazan, and costs related to manufacturing vonoprazan for clinical trials.

The Company has entered into various research and development contracts with clinical research organizations, clinical manufacturing organizations and other companies. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and payments made in advance of performance are reflected in the accompanying balance sheets as prepaid expenses or accrued liabilities. The Company records accruals for estimated costs incurred for ongoing research and development activities. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the services, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates may be made in determining the prepaid or accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates.

***In-Process Research and Development***

The Company evaluates whether acquired intangible assets are a business under applicable accounting standards. Additionally, the Company evaluates whether the acquired assets have a future alternative use. Intangible assets that do not have future alternative use are considered acquired in-process research and development. When the acquired in-process research and development assets are not part of a business combination, the value of the consideration paid is expensed on the acquisition date. Future costs to develop these assets are recorded to research and development expense as they are incurred.

***Stock-Based Compensation***

Stock-based compensation expense represents the cost of the grant date fair value of equity awards recognized over the requisite service period of the awards (generally the vesting period) on a straight-line basis. The Company recognizes forfeitures as they occur.

***Income Taxes***

The Company accounts for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and



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liabilities are determined on the basis of the differences between the financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in the statement of operations in the period that includes the enactment date.

The Company recognizes net deferred tax assets to the extent that the Company believes these assets are more likely than not to be realized. In making such a determination, management considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. If management determines that the Company would be able to realize its deferred tax assets in the future in excess of their net recorded amount, management would make an adjustment to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

The Company records uncertain tax positions on the basis of a two-step process whereby (i) management determines whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position and (ii) for those tax positions that meet the more-likely-than-not recognition threshold, management recognizes the largest amount of tax benefit that is more than 50 percent likely to be realized upon ultimate settlement with the related tax authority. The Company recognizes interest and penalties related to unrecognized tax benefits within income tax expense. Any accrued interest and penalties are included within the related tax liability.

***Comprehensive Loss***

Comprehensive loss is defined as a change in equity during a period from transactions and other events and circumstances from non-owner sources. The Company's comprehensive loss was the same as its reported net loss for all periods presented.

***Segment Reporting***

Operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision maker in making decisions on how to allocate resources and assess performance. The Company views its operations and manages its business as one operating segment.

***Net Loss Per Share***

For the year ended December 31, 2018 and the six months ended June 30, 2018 and 2019, the net loss per share was recast to include in the numerator the net losses of both the Company and YamadaCo and include in the denominator the combined weighted-average outstanding shares of both the Company and YamadaCo. Basic net loss per share is computed by dividing the combined net loss by the weighted-average number of common shares outstanding for the period, without consideration for potentially dilutive securities. The Company has excluded weighted-average unvested shares of 1,258,576 shares from the weighted-average number of common shares outstanding for the six months ended June 30, 2019. No shares of common stock were unvested during the year ended December 31, 2018. Diluted net loss per share is computed by dividing the combined net loss by the weighted-average number of common shares and dilutive common stock equivalents outstanding for the period determined using the treasury-stock and if-converted methods. Dilutive common stock

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equivalents are comprised of unvested common stock, warrants and convertible promissory notes. For all periods presented, there is no difference in the number of shares used to calculate basic and diluted shares outstanding as inclusion of the potentially dilutive securities would be antidilutive.

**Unaudited Pro Forma Net Loss Per Share**

The unaudited pro forma basic and diluted net loss per share reflects (i) the automatic conversion of all outstanding convertible promissory notes and related accrued interest into shares of common stock (assuming an IPO price of \$ per share, which is the midpoint of the price range set forth on the cover page of this prospectus and assuming the conversion occurs on 2019, the expected closing date of the Company's IPO), and (ii) the reclassification of the Takeda Warrant to stockholders' equity, each as of the beginning of the period presented or the issuance date, if later.

The unaudited pro forma basic and diluted net loss per share amounts do not give effect to the issuance of common stock issued in the IPO nor do they give effect to potential dilutive securities where the impact would be anti-dilutive.

The following table summarizes the Company's unaudited pro forma net loss per share (in thousands, except share and per share data):

	Year Ended December 31, 2018	Six Months Ended June 30, 2019
<b>Numerator</b>		
Net loss	\$ (1,288)	\$ (89,013)
Interest expense on convertible promissory notes	13	831
Change in fair value of Takeda Warrant	—	1,277
Change in fair value of convertible promissory notes	50	2,442
Pro forma net loss	<u>\$ (1,225)</u>	<u>\$ (84,463)</u>
<b>Denominator</b>		
Weighted-average shares of common stock outstanding, basic and diluted	2,791,361	3,062,913
Pro forma adjustments to reflect assumed weighted-average effect of conversion of convertible promissory notes	_____	_____
Pro forma weighted-average shares of common stock outstanding, basic and diluted	<u>_____</u>	<u>_____</u>
Pro forma net loss per share, basic and diluted	<u>\$ _____</u>	<u>\$ _____</u>

**Recently Adopted Accounting Pronouncements**

In June 2018, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2018-07, *Compensation—Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*. This guidance expands the scope of Topic 718, *Compensation—Stock Compensation*, which currently only includes share-based payments to employees, to include share-based payments issued to nonemployees for goods or services.

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Consequently, the accounting for share-based payments to nonemployees and employees will be substantially aligned. This ASU supersedes Subtopic 505-50, *Equity—Equity-Based Payments to Non-Employees* and is effective for public companies for annual periods beginning after December 15, 2018, including interim periods within those fiscal years, with early adoption permitted as long as ASU No. 2014-09 has been adopted by the Company. The Company adopted this guidance effective January 1, 2018, and the adoption did not have a material impact on the Company's financial statements.

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*, which requires a lessee to recognize a lease liability and a right-of-use asset for all leases with lease terms of more than 12 months. Additionally, certain qualitative and quantitative disclosures will be required in the financial statements. This guidance is effective for annual reporting periods beginning after December 15, 2018, including interim periods within those fiscal years, and early adoption is permitted. Companies may adopt this guidance using a modified retrospective approach for leases that exist or are entered into after the beginning of the earliest comparative period in the financial statements. The Company adopted this guidance effective January 1, 2018, and the adoption did not have any impact on the Company's financial statements as the Company did not have any leases through June 30, 2019. As the Company enters into future, material lease agreements, the adoption of this guidance is expected to result in a significant increase in the total assets and liabilities reported on the balance sheets.

**Recently Issued Accounting Pronouncements**

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*, which eliminates, modifies and adds disclosure requirements on fair value measurements. The standard is effective for annual periods beginning after December 15, 2019, including interim periods within those fiscal years, and early adoption is permitted. The Company is currently evaluating the impact the adoption of ASU No. 2018-13 will have on the Company's financial statements.

**2. Related Party Transactions**

Frazier is a principal stockholder of the Company and is represented on the Company's board of directors. For the year ended December 31, 2018 and the six months ended June 30, 2019, the Company conducted its operations within office space controlled by Frazier and Frazier allocated a portion of the costs associated with this office to the Company. In addition, Frazier paid for various goods and services, such as employee wages, insurance and expense reimbursements and various administrative services associated with the operations of the Company and charged the Company for those expenses. As of December 31, 2018 and June 30, 2019, the Company had outstanding accounts payable balances due to Frazier of \$45,000 and \$50,000, respectively, related to these shared operating expenses. For the year ended December 31, 2018 and the six months ended June 30, 2018 and 2019, the Company incurred \$0.3 million, \$0.1 million and \$0.1 million, respectively, of shared operating expenses. In addition to the shared operating expenses, the Company issued convertible promissory notes to Frazier during 2018 and 2019 (see Note 4).

Mountain Field LLC ("Mountain Field") is an entity owned by the chairman of the Company's board of directors. During the year ended December 31, 2018 and the six months ended June 30, 2019, the Company charged Mountain Field for certain rent and payroll related expenses. These

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shared expenses were allocated based on usage of the related facilities and time incurred by personnel. As of December 31, 2018 and June 30, 2019, the Company had an outstanding accounts receivable balance from Mountain Field of \$19,000 and \$15,000, respectively, related to shared operating expenses. For the year ended December 31, 2018 and the six months ended June 30, 2018 and 2019, the Company charged Mountain Field \$4,000, \$3,000 and \$0.1 million, respectively, for shared expenses.

Takeda became a common stockholder of the Company as of May 7, 2019 in connection with the May 2019 license agreement (see Note 3).

**3. Commitments and Contingencies**

***License Agreement***

On May 7, 2019, the Company entered into a license agreement with Takeda pursuant to which it was granted an exclusive license to commercialize vonoprazan fumarate in the United States, Canada and Europe (the "Takeda License"). The Company also has the right to sublicense its rights under the agreement, subject to certain conditions. The agreement will remain in effect, on a country-by-country and product-by-product basis, until the later of (i) the expiration of the last to expire valid patent claim covering vonoprazan fumarate alone or in combination with at least one other therapeutically active ingredient, (ii) the expiration of the applicable regulatory exclusivity and (iii) 15 years from the date of first commercial sale, unless earlier terminated. The Company may terminate the Takeda License upon six months' written notice. The Company and Takeda may terminate the Takeda License in the case of the other party's insolvency or material uncured breach. Takeda may terminate the Takeda License if the Company challenges, or assists in challenging, licensed patents.

In consideration of the Takeda License, the Company (i) paid Takeda \$25.0 million in cash, (ii) issued Takeda 500,000 shares of its common stock at a fair value of \$5.9 million, (iii) issued the Takeda Warrant to purchase 3,500,000 shares of its common stock at an exercise price of \$0.0001 per share at an initial fair value of \$47.9 million, and (iv) issued the Takeda Warrant Right to receive an additional common stock warrant should Takeda's fully-diluted ownership of the Company represent less than a certain specified percentage of the fully-diluted capitalization, including shares issuable upon conversion of outstanding convertible promissory notes, calculated immediately before the closing of the Company's IPO, with a nominal initial fair value due to the low probability of issuance. In addition, the Company is obligated to pay Takeda up to an aggregate of \$250.0 million in sales milestones upon the achievement of specified levels of product sales, and a low double-digit royalty rate on aggregate net sales of licensed products, subject to certain adjustments. The Company incurred \$0.1 million of transaction costs in connection with the Takeda License. The Takeda Warrant has an exercise price of \$0.0001 per share, expires on May 7, 2029 and becomes exercisable upon (i) certain change of control transactions of the Company or (ii) the consummation of an IPO by the Company.

The transaction has been accounted for as an asset acquisition as substantially all of the fair value is concentrated in a group of similar assets. The \$78.9 million fair value of the consideration paid for these research and development assets, which have no alternative future use, was recorded as in-process research and development in the Company's combined statement of operations for the six months ended June 30, 2019.

***Contingencies***

In the event the Company becomes subject to claims or suits arising in the ordinary course of business, the Company would accrue a liability for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated.

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**4. Convertible Promissory Notes**

***Frazier Convertible Note Financing***

From January 2018 to April 2019, the Company issued the Frazier Notes for an aggregate of \$2.4 million and bearing interest at per annum rates ranging from 1.68% to 2.55%. Of the Frazier Notes, \$1.9 million were issued in 2018 and \$0.5 million were issued in April 2019. Due to certain embedded features within the Frazier Notes, the Company elected to account for these notes and all their embedded features under the fair value option. The Company recorded changes in the fair value of the Frazier Notes in the combined statements of operations until May 2019, when the Frazier Notes and related accrued interest were exchanged, at their then fair value of \$2.4 million, for the May 2019 Notes. For the year ended December 31, 2018 and the six months ended June 30, 2018, the Company recognized \$50,000 and \$4,000, respectively, of change in fair value of convertible promissory notes in the combined statements of operations related to increases in the fair value of the Frazier Notes. For the six months ended June 30, 2019, the Company recognized \$50,000 of other income in the combined statements of operations related to decreases in the fair value of the Frazier Notes. For the year ended December 31, 2018 and the six months ended June 30, 2018 and 2019, the Company recognized \$13,000, \$4,000 and \$15,000, respectively, of interest expense in connection with the Frazier Notes.

***May 2019 Convertible Note Financing***

On May 7, 2019, the Company entered into a note purchase agreement under which it issued the unsecured May 2019 Notes for an aggregate of \$90.3 million, resulting in gross proceeds to the Company of \$87.8 million in cash and \$2.4 million related to the exchange of the Frazier Notes and related accrued interest for the May 2019 Notes. Including the conversion of the Frazier Notes, Frazier purchased \$20.0 million of the May 2019 Notes. The May 2019 Notes bear interest at a rate of 6% per annum and are subordinated to borrowings under the Company's loan and security agreement (see Note 5). The May 2019 Notes become payable upon demand of the holders of at least 60% of the outstanding principal amount of the May 2019 Notes, including Frazier, on May 7, 2020 (the "Maturity Date"), and become due and payable on May 7, 2022, subject to earlier conversion or repayment in the event the Company completes certain equity financings or a change of control. The May 2019 Notes can be converted/redeemed as follows (i) automatically converted upon a qualified equity financing, with a conversion price of the lesser of 80% of the price paid per share in such financing or the conversion cap price per share, (ii) optionally converted upon a non-qualified equity financing with a conversion price of 80% of the price paid per share in such financing, (iii) optionally converted any time after the Maturity Date, with a conversion price per share of the conversion cap price per share, (iv) automatically upon an IPO with a conversion price per share of the lesser of 80% of the IPO price per share, or the conversion cap price per share, and (v) upon certain corporate transactions, receive cash equal to the greater of (A) two times the then outstanding principal and accrued interest and (B) an amount equal to the amount that would be received as if the May 2019 Notes were converted with a conversion price of the conversion cap price per share. The conversion cap price per share is defined as \$500.0 million less the outstanding principal and accrued interest divided by the total of (1) the total number of common shares outstanding immediately prior to conversion, (2) the number of common shares issuable upon exercise or conversion of exercisable or convertible securities, and (3) the number of shares of capital stock reserved for issuance under the Company's equity incentive plan.

The note purchase agreement includes, among others, covenants related to delivery of certain financial reports, certain registration rights, voting provisions regarding the composition of the

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Company's board of directors, and limitations on the Company's ability to pay dividends, incur additional indebtedness or consummate certain changes of control. The note purchase agreement also contains customary events of default, including bankruptcy, the failure to make payments when due, and certain material adverse changes. Upon the occurrence of an event of default, subject to any specified cure periods, all amounts owed by the Company may be declared immediately due and payable. As of June 30, 2019, the Company was in compliance with all applicable covenants under the note purchase agreement.

Due to certain embedded features within the May 2019 Notes, the Company elected to account for these notes and all their embedded features under the fair value option. For the six months ended June 30, 2019, the Company recognized \$2.5 million of other expense in the combined statements of operations related to increases in the fair value of the May 2019 Notes. For the six months ended June 30, 2019, the Company recognized \$0.8 million of interest expense in connection with the May 2019 Notes. As of June 30, 2019, the outstanding principal and accrued interest on the May 2019 Notes was \$90.3 million and \$0.8 million, respectively.

## 5. Long-Term Debt

Long-term debt consists of the following (in thousands):

	June 30, 2019
Long-term debt	\$ 25,000
Unamortized debt discount	(2,551)
Long-term debt, net of debt discount	<u>\$ 22,449</u>

On May 14, 2019, the Company entered into a loan and security agreement (the "Loan Agreement", and all amounts borrowed thereunder the "Term Loans") with Silicon Valley Bank ("SVB"), as administrative and collateral agent, and lenders including SVB and WestRiver Innovation Lending Fund VIII, L.P. ("WestRiver"). The Company borrowed \$25.0 million ("Term Loan A") at the inception of the Loan Agreement and has the right to borrow an additional \$25.0 million ("Term Loan B"). Term Loan B is available through March 31, 2020, provided that (i) the Company has received at least \$150.0 million of net cash proceeds in connection with the issuance and sale, subsequent to April 1 2019, of its equity securities and subordinated debt, (ii) the Company has initiated Phase 3 clinical trials for vonoprazan, and (iii) no event of default has occurred.

The Term Loans bear interest at a floating rate of the higher of the Wall Street Journal Prime rate plus 1.75% (7.25% at June 30, 2019) or 7.25%. The monthly payments consist of interest-only through June 1, 2021 or, in the event of positive data with respect to the Company's Phase 3 clinical trial in both indications for Vonoprazan sufficient to file an NDA with the FDA, through June 1, 2022. Subsequent to the interest-only period, the Term Loans will be payable in equal monthly installments of principal, plus accrued and unpaid interest through the maturity date of May 1, 2024. In addition, the Company is obligated to pay a final payment fee of 8.25% of the original principal amount of the Term Loans. As of June 30, 2019, the final payment fee of \$2.1 million has been recorded as an other long-term liability.

The Company may elect to prepay all or a portion of the Term Loans prior to maturity, subject to a prepayment fee of up to 2.0% of the then outstanding principal balance and payment of a pro rata portion of the final payment fee. After repayment, no Term Loan amounts may be borrowed again.

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The borrowings under the Loan Agreement are collateralized by substantially all of the Company's assets, excluding intellectual property and certain other assets. The Loan Agreement includes affirmative and negative covenants. The affirmative covenants include, among others, covenants requiring the Company to maintain its legal existence and governmental approvals, deliver certain financial reports, maintain insurance coverage and satisfy certain requirements regarding its operating accounts. The negative covenants include, among others, limitations on the Company's ability to incur additional indebtedness and liens, merge with other companies or consummate certain changes of control, acquire other companies, engage in new lines of business, make certain investments, pay dividends, transfer or dispose of assets, amend certain material agreements or enter into various specified transactions. The Loan Agreement also contains customary events of default, including bankruptcy, the failure to make payments when due, and a material adverse change. Upon the occurrence of an event of default, subject to any specified cure periods, all amounts owed by the Company would begin to bear interest at a rate that is 4.00% above the rate effective immediately before the event of default and may be declared immediately due and payable by SVB, as collateral agent. As of June 30, 2019, the Company was in compliance with all applicable covenants under the Loan Agreement.

In connection with the Loan Agreement, the Company issued the Lender Warrants to purchase stock of the Company. The Lender Warrants become exercisable only if the Company borrows Term Loan B, and the number, class and per share price of the shares subject to the warrants is dependent on the terms of certain future equity financing transactions of the Company, including an IPO. The Lender Warrants expire ten years from the date of issuance, subject to earlier termination on September 30, 2020 if the Company does not draw down Term Loan B on or before March 31, 2020. The Lender Warrants include a put option pursuant to which, in the event that the Company does not draw down Term Loan B on or before March 31, 2020, the warrant holders may require that the Company repurchase the warrants for a total aggregate repurchase price of \$0.5 million. The put right is exercisable through September 30, 2020.

The initial \$0.4 million fair value of the Lender Warrants, the \$2.1 million final payment fee and \$0.2 million of debt issuance costs have been recorded as debt discount and are being amortized to interest expense using the effective interest method over the term of the Term Loans. For the six months ended June 30, 2019, the Company recognized \$0.3 million of interest expense, including amortization of the debt discount, in connection with the Loan Agreement. As of June 30, 2019, the Company had outstanding Term Loans of \$25.0 million and accrued interest of \$0.2 million.

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Future minimum principal and interest payments under the Term Loans, including the final payment fee, as of June 30, 2019 are as follows (in thousands):

Year ending December 31:	
2019	\$ 921
2020	1,843
2021	6,609
2022	9,533
2023	8,920
2024	5,599
Total principal and interest payments	33,425
Less interest and final payment fee	(8,425)
Long-term debt	<u>\$ 25,000</u>

## 6. Stockholders' Deficit

### **Common Stock**

In March 2019, subsequent to the Merger, the Company sold 687,764 shares of the Company's common stock to Frazier.

In March 2019, the founders granted the Company a repurchase right for the 1,556,000 shares of common stock originally purchased in 2018. The Company has the right, but not the obligation, to repurchase unvested shares in the event the founder's relationship with the Company is terminated, subject to certain limitations, at the original purchase price of the stock. The repurchase right lapses for 389,000 shares in March 2019 and the repurchase right for the remaining 1,167,000 shares lapses in equal monthly amounts over the following 48-month period ending in March 2023. The fair value of the founder shares at the date the repurchase right was granted is being recognized as stock-based compensation expense on a straight-line basis over the vesting period. As of June 30, 2019, 1,094,062 shares of common stock were subject to repurchase by the Company and the associated repurchase liability was not significant. The amount of recognized and unrecognized stock-based compensation related to the founder stock was immaterial for all periods presented.

In May 2019, the Company issued Takeda 500,000 shares of common stock in connection with the Takeda License.

For the period from January 1, 2019 to May 6, 2019, the Company issued 1,164,600 shares of common stock to various employees and consultants of the Company for aggregate proceeds of approximately \$1,000. Upon issuance, these shares were subject to a repurchase option by the Company at the original purchase price of the shares. The repurchase rights generally lapse as to 25% of the shares on the first anniversary of the vesting commencement date, and the repurchase right lapses as to 1/48<sup>th</sup> of the shares each one-month period thereafter, subject to the purchaser remaining continuously an employee, consultant or director of the Company.

### **Equity Incentive Plan**

The Company's 2019 Equity Incentive Plan (the "Plan") provides for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock



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unit awards, and other stock awards to eligible recipients, including employees, directors or consultants of the Company. As of June 30, 2019, the Company had 1,029,400 shares of common stock authorized for issuance under the Plan, of which 1,021,900 shares remained available for grant. In May 2019, the Company issued 7,500 shares of common stock under a restricted stock award, of which 5,000 were unvested as of June 30, 2019. For the six months ended June 30, 2019, the Company recognized \$29,000 of stock-based compensation expense related to restricted stock awards under the Plan and the grant date fair value of the award was \$11.77 per share, the grant date fair value of the Company's common stock.

A summary of the Company's unvested shares is as follows:

Balance at January 1, 2019	—
Vesting restrictions placed on previously issued shares	1,556,000
Sale of unvested common stock	1,164,600
Issuance of unvested restricted stock awards	7,500
Share vesting	(579,920)
Balance at June 30, 2019	<u>2,148,180</u>

For accounting purposes, unvested shares of common stock are considered issued, but not outstanding until they vest.

### **Stock-Based Compensation Expense**

Stock-based compensation expense recognized for all equity awards, including founder stock, has been reported in the combined statements of operations as follows (in thousands):

	Six Months Ended June 30, 2019
Research and development expense	\$ —
General and administrative expense	29
Total	<u>\$ 29</u>

As of June 30, 2019, the Company had \$59,000 of unrecognized stock-based compensation expense, which is expected to be recognized over a weighted-average period of 0.7 years. For the six months ended June 30, 2019, the vested fair value of the restricted stock awards was \$29,000. There was no stock-based compensation expense for the year ended December 31, 2018.

### **Valuation of Common Stock**

Prior to obtaining the Takeda License on May 7, 2019, the fair value of the Company's common stock was nominal since the Company was not sufficiently capitalized and held no assets that could be used to generate future revenues. Subsequent to obtaining the Takeda License and issuing the May 2019 Notes, the Company estimated the fair value of its common stock using methodologies, approaches and assumptions consistent with the American Institute of Certified Public Accountants Accounting and Valuation Guide: *Valuation of Privately Held Company Equity Securities Issued as Compensation* (the "Practice Aid"). The Practice Aid prescribes several valuation approaches for setting the value of an enterprise, such as the cost, income and market approaches, and various

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(Information as of June 30, 2019 and thereafter and for the six months ended June 30, 2018 and 2019 is unaudited)

methodologies for allocating the value of an enterprise to its common stock. The Company's 2019 valuations utilized a scenario-based analysis that estimated the fair value per share based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available to the Company, including various IPO, stay private and dissolution scenarios, and applying a discount for lack of marketability. The Company considered various stay private scenarios using the income approach and allocated the indicated equity value to each class of equity based on the current-value method. The Company also considered various IPO scenarios based on expected equity values in an IPO and allocated the indicated equity value to each class of equity on a fully-diluted basis considering the dilutive impacts of the May 2019 Notes and the Lender Warrants.

**Common Stock Reserved for Future Issuance**

Common stock reserved for future issuance consists of the following:

	<u>June 30, 2019</u>
Common stock warrants	3,500,000
Shares available for issuance under the Plan	1,021,900
<b>Total</b>	<b><u>4,521,900</u></b>

As of December 31, 2018, no shares of common stock were reserved for future issuance.

**7. Income Taxes**

A reconciliation between the provision for income taxes and income taxes computed using the U.S. federal statutory corporate tax rate is as follows (in thousands):

	<u>Year Ended December 31, 2018</u>
Tax computed at federal statutory rate	\$ (271)
Permanent differences	14
Change in valuation allowance	257
Provision for income taxes	<u>\$ —</u>

Significant components of the Company's net deferred tax assets are as follows (in thousands):

	<u>December 31, 2018</u>
Deferred tax assets:	
Net operating loss carryforwards	\$ 5
Accruals and reserves	16
Intangible assets	236
Total deferred tax assets	<u>257</u>
Valuation allowance	<u>(257)</u>
Net deferred taxes	<u>\$ —</u>

**PHATHOM PHARMACEUTICALS, INC.**  
**NOTES TO COMBINED FINANCIAL STATEMENTS—(CONTINUED)**  
**(Information as of June 30, 2019 and thereafter and for the six months ended June 30, 2018 and 2019 is unaudited)**

Based upon the Company's history of operating losses, the Company is unable to conclude that it is more likely than not that the benefit of its deferred tax assets will be realized. Accordingly, the Company has provided a full valuation allowance for its deferred tax assets as of December 31, 2018.

As of December 31, 2018, the Company had federal net operating loss carryforwards of approximately \$23,000, which do not expire, and no material federal or California research and development credits.

Pursuant to Internal Revenue Code Sections 382 and 383, annual use of the Company's net operating loss and research and development tax credit carryforwards may be limited in the event a cumulative change in ownership of more than 50% occurs within a three-year period. The Company has not completed a Section 382 study to assess whether an ownership change has occurred or whether there have been multiple ownership changes since the Company's formation. If eliminated, the related asset would be removed from the deferred tax asset schedule with a corresponding reduction in the valuation allowance. Due to the existence of the valuation allowance, limitations created by future ownership changes, if any, will not impact the Company's effective tax rate.

As of December 31, 2018, there were no material unrecognized tax benefits recorded in the combined financial statements and the Company does not anticipate any significant changes in its unrecognized tax benefits over the next 12 months.

The Company is subject to taxation in the United States federal and state jurisdictions. The Company has not yet filed federal income tax and state income tax returns, but upon filing will be subject to examination by federal and state tax authorities due to the carryforward of unutilized net operating losses and research and development credits. The Company is not currently under examination by any tax authority. The Company's policy is to recognize interest and penalties related to income tax matters as a component of income tax expense. The Company has not recognized interest or penalties in its combined statements of operations since inception.

#### **8. Subsequent Events**

The Company has completed an evaluation of all subsequent events through July 26, 2019 to ensure these financial statements include appropriate disclosure of events both recognized in the financial statements and events which occurred but were not recognized in the financial statements. The Company has concluded that no subsequent event has occurred that requires disclosure.

Shares

**Phathom Pharmaceuticals, Inc.**

Common Stock

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**Goldman Sachs & Co. LLC**

**Jefferies**

**Evercore ISI**

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Through and including \_\_\_\_\_, 2019 (the 25th day after the date of this prospectus) all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

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**Part II****INFORMATION NOT REQUIRED IN PROSPECTUS****Item 13. Other Expenses of Issuance and Distribution.**

The following table indicates the expenses to be incurred in connection with the offering described in this registration statement, other than underwriting discounts and commissions, all of which will be paid by us. All amounts are estimated except the SEC registration fee, the Financial Industry Regulatory Authority, Inc., or FINRA, filing fee and the Nasdaq Global Market listing fee.

	Amount paid or to be paid
SEC registration fee	\$ *
FINRA filing fee	*
Nasdaq Global Market listing fee	*
Accountants' fees and expenses	*
Legal fees and expenses	*
Transfer Agent's fees and expenses	*
Printing and engraving expenses	*
Miscellaneous	*
<b>Total expenses</b>	<b>\$ *</b>

\* To be provided by amendment.

**Item 14. Indemnification of Directors and Officers.**

Section 102 of the General Corporation Law of the State of Delaware permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our certificate of incorporation provides that no director of the Registrant shall be personally liable to it or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the General Corporation Law of the State of Delaware provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

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Our amended and restated certificate of incorporation, which will become effective immediately prior to the closing of this offering, provides that we will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of us) by reason of the fact that he or she is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. Our amended and restated certificate of incorporation provides that we will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favor by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys' fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnitee under certain circumstances.

We have entered into indemnification agreements with each of our directors and officers. These indemnification agreements may require us, among other things, to indemnify our directors and officers for some expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by a director or officer in any action or proceeding arising out of his or her service as one of our directors or officers, or any of our subsidiaries or any other company or enterprise to which the person provides services at our request.

We maintain a general liability insurance policy that covers certain liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

In any underwriting agreement we enter into in connection with the sale of common stock being registered hereby, the underwriters will agree to indemnify, under certain conditions, us, our directors, our officers and persons who control us within the meaning of the Securities Act, against certain liabilities.

### **Item 15. Recent Sales of Unregistered Securities.**

Set forth below is information regarding unregistered securities issued by us since January 1, 2018. Also included is the consideration received by us for such securities and information relating to the section of the Securities Act, or rule of the SEC, under which exemption from registration was claimed.

(a) Issuances of Securities

1. From January 2018 to December 2018, YamadaCo IIA, Inc. issued convertible promissory notes, or the YamadaCo Notes, in an aggregate principal amount of \$1.5 million to Frazier Life Sciences IX, L.P., or FLS IX. From January 2018 to April 2019, we (originally as North Bridge IV, Inc.) issued convertible promissory notes, or the Phathom Notes, in an aggregate principal amount of \$0.9 million to FLS IX. On May 7, 2019, the YamadaCo Notes and the Phathom Notes were cancelled in exchange for newly issued convertible promissory notes in the principal amount of approximately \$2.4 million, which amount represented the principal and accrued interest on the YamadaCo Notes and the Phathom Notes as of such date.

2. In February 2018, we issued 1,000 shares of common stock to our founders and entities affiliated with them at a purchase price of \$1.00 per share pursuant to stock purchase agreements. In March 2019, we effected a 1,559.1183-for-1 forward stock split for each share of our common stock, resulting in 1,559,118 shares of our common stock held by such founders and entities affiliated with them.

3. From January 2018 to February 2018, YamadaCo IIA, Inc. issued 1,000 shares of its common stock to its founders and entities affiliated with them at a purchase price of \$1.00 per share pursuant to stock purchase agreements. In March 2019, effective upon the completion of the merger of YamadaCo IIA, Inc. with and into us, each issued and outstanding share of YamadaCo IIA, Inc. was converted into 1559.1183 shares of our common stock, resulting in 1,559,118 shares of our common stock held by such founders and entities affiliated with them.

4. In March 2019, we issued 687,764 shares of common stock to FLS IX at a purchase price of \$0.00064139 per share pursuant to a stock purchase agreement.

5. In May 2019, we issued 500,000 shares of common stock to Takeda pursuant to a stock issuance agreement and a warrant to purchase 3,500,000 shares of our common stock with an exercise price of \$0.0001 per share as partial consideration for the Takeda License.

6. In May 2019, we issued convertible promissory notes in an aggregate principal amount of \$90.3 million to FLS IX and other investors pursuant to a note purchase agreement.

7. In May 2019, we issued warrants to Silicon Valley Bank and WestRiver Innovation Lending Fund VIII, L.P., the number, class and exercise price of which are dependent on the terms of certain future equity financing transactions.

No underwriters were involved in the foregoing issuances of securities. The securities described in this section (a) of Item 15 were issued to investors in reliance upon the exemption from the registration requirements of the Securities Act, as set forth in Section 4(a)(2) under the Securities Act and Regulation D promulgated thereunder relative to transactions by an issuer not involving any public offering, to the extent an exemption from such registration was required. All holders of securities described above represented to us in connection with their purchase or issuance that they were accredited investors and were acquiring the securities for their own account for investment purposes only and not with a view to, or for sale in connection with, any distribution thereof and that they could bear the risks of the investment and could hold the securities for an indefinite period of time. The holders received written disclosures that the securities had not been registered under the Securities Act and that any resale must be made pursuant to a registration statement or an available exemption from such registration.

(b) Issuance of Restricted Stock

1. In March 2019, we issued 804,000 shares of our restricted common stock to certain of our founders at a purchase price of \$0.00064139 per share pursuant to restricted stock purchase agreements.

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2. From April 2019 to May 2019, we issued 360,600 shares of our restricted common stock to certain of our employees and consultants at a purchase price of \$0.00064139 per share pursuant to restricted stock purchase agreements.

3. In May 2019, we granted 7,500 shares of our restricted common stock under our existing 2019 equity incentive plan to a consultant in connection with services provided to us by such person.

The restricted stock as described in this section (b) of Item 15 were issued pursuant to written compensatory plans or arrangements with our employees and directors, in reliance on the exemption from the registration requirements of the Securities Act provided by Rule 701 promulgated under the Securities Act or the exemption set forth in Section 4(a)(2) under the Securities Act and Regulation D promulgated thereunder relative to transactions by an issuer not involving any public offering. All recipients either received adequate information about us or had access, through employment or other relationships, to such information.

All of the foregoing securities are deemed restricted securities for purposes of the Securities Act. All certificates representing the issued shares of capital stock described in this Item 15 included appropriate legends setting forth that the securities had not been registered and the applicable restrictions on transfer.

### **Item 16. Exhibits and Financial Statement Schedules.**

(a) **Exhibits.** See Exhibit Index attached to this registration statement, which is incorporated by reference herein.

(b) **Financial Statement Schedules.** Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the combined financial statements or notes thereto.

### **Item 17. Undertakings.**

The undersigned registrant hereby undertakes to provide to the underwriter, at the closing specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriter to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.



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(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

The undersigned registrant hereby undertakes that, for the purpose of determining liability under the Securities Act of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

The undersigned registrant hereby undertakes that, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (1) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (2) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (3) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (4) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

## Exhibit Index

<u>Exhibit Number</u>	<u>Description of Exhibit</u>
1.1*	Form of Underwriting Agreement
2.1	Agreement of Merger, dated March 13, 2019, by and between YamadaCo IIA, Inc. and the Registrant
3.1	Amended and Restated Certificate of Incorporation (currently in effect)
3.2	Bylaws, as amended (currently in effect)
3.3*	Form of Amended and Restated Certificate of Incorporation (to be effective immediately prior to the closing of this offering)
3.4*	Form of Amended and Restated Bylaws (to be effective immediately prior to the closing of this offering)
4.1*	Specimen stock certificate evidencing the shares of common stock
4.2	Warrant to purchase shares of common stock issued to Takeda Pharmaceutical Company Limited, dated May 7, 2019
4.3	Warrant to purchase stock issued to Silicon Valley Bank, dated May 14, 2019
4.4	Warrant to purchase stock issued to WestRiver Innovation Lending Fund VIII, L.P., dated May 14, 2019
4.5	Note Purchase Agreement, dated May 7, 2019, by and among the Registrant and the other parties party thereto, as amended
5.1*	Opinion of Latham & Watkins LLP
10.1#	Phathom Pharmaceuticals, Inc. 2019 Equity Incentive Plan
10.2#	Form of Stock Option Grant Notice and Stock Option Agreement under Phathom Pharmaceuticals, Inc. 2019 Equity Incentive Plan
10.3#	Form of Restricted Stock Grant Notice and Restricted Stock Agreement under Phathom Pharmaceuticals, Inc. 2019 Equity Incentive Plan
10.4#*	Phathom Pharmaceuticals, Inc. 2019 Incentive Plan and form of stock option grant notice and stock option agreement thereunder
10.5#*	Phathom Pharmaceuticals, Inc. 2019 Employee Stock Purchase Plan
10.6#*	Non-Employee Director Compensation Policy
10.7#	Letter Agreement, dated May 7, 2019, by and between Tadataka Yamada, M.D. and the Registrant
10.8#	Employment Letter Agreement, dated July 21, 2019, by and between David Socks and the Registrant
10.9#	Employment Letter Agreement, dated July 21, 2019, by and between Azmi Nabulsi, M.D., M.P.H. and the Registrant
10.10#	Employment Letter Agreement, dated July 23, 2019, by and between Aditya Kohli, Ph.D. and the Registrant
10.11#*	Form of Indemnification Agreement for Directors and Officers
10.12†	License Agreement, dated May 7, 2019, by and between Takeda Pharmaceutical Company Limited and the Registrant
10.13	Loan and Security Agreement, dated May 14, 2019, by and among Silicon Valley Bank, WestRiver Innovation Lending Fund VIII, L.P. and the Registrant
23.1*	Consent of Ernst & Young LLP, independent registered public accounting firm
23.2*	Consent of Latham & Watkins LLP (included in Exhibit 5.1)
24.1	Power of Attorney (included on signature page)

\* To be filed by amendment.  
# Indicates management contract or compensatory plan.  
† Portions of this exhibit have been omitted for confidentiality purposes.

**SIGNATURES**

Pursuant to the requirements of the Securities Act, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Diego, State of California, on this \_\_\_\_\_ day of \_\_\_\_\_, 2019.

PHATHOM PHARMACEUTICALS, INC.

By: \_\_\_\_\_  
David Socks  
President, Chief Executive Officer and Director

**SIGNATURES AND POWER OF ATTORNEY**

We, the undersigned officers and directors of Phathom Pharmaceuticals, Inc., hereby severally constitute and appoint David Socks and Aditya Kohli, Ph.D. and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him and in his name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement (or any other registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities held on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
_____ David Socks	President, Chief Executive Officer and Director (principal executive officer)	, 2019
_____ Aditya Kohli, Ph.D.	Chief Business Officer (principal financial and accounting officer)	, 2019
_____ Tadataka Yamada, M.D.	Chairman	, 2019
_____ Jonathan Edwards, Ph.D.	Director	, 2019
_____ James Topper, M.D., Ph.D.	Director	, 2019

**AGREEMENT OF MERGER**

**AGREEMENT OF MERGER**, dated as of March 13, 2019 (this "Agreement"), between Phathom Pharmaceuticals, Inc., a Delaware corporation ("Phathom"), and YamadaCo IIA, Inc., a Delaware corporation ("YamadaCo").

**WITNESSETH:**

**WHEREAS**, Phathom is a corporation organized and existing under the laws of the State of Delaware, authorized to issue one class of stock, consisting of 10,000,000 shares of Common Stock, par value \$0.0001 per share, of which the total number of issued and outstanding shares of Common Stock is 1,559,118 shares;

**WHEREAS**, YamadaCo is a corporation organized and existing under the laws of the State of Delaware, authorized to issue one class of stock, consisting of 1,000 shares of Common Stock, par value \$0.0001 per share, of which the total number of issued and outstanding shares of Common Stock is 1,000 shares;

**WHEREAS**, Phathom desires to acquire the assets and property, and to assume all of the liabilities and obligations, of YamadaCo by means of a merger of YamadaCo with and into Phathom;

**WHEREAS**, Section 251 of the Delaware General Corporation Law (the "DGCL") authorizes the merger of a Delaware corporation with and into a Delaware corporation;

**WHEREAS**, YamadaCo now desires to merge with and into Phathom (the "Merger"), following which Phathom shall be the surviving corporation;

**WHEREAS**, the Board of Directors of each of Phathom and YamadaCo has authorized, adopted and approved this Agreement and the consummation of the Merger; and

**WHEREAS**, all of the stockholders of each of Phathom and YamadaCo have authorized, adopted and approved this Agreement and the consummation of the Merger.

**NOW THEREFORE**, the parties hereto agree as follows:

**ARTICLE I.****THE MERGER**Section 1.01. The Merger.

(a) After satisfaction or, to the extent permitted hereunder, waiver of all conditions to the Merger, as the parties hereto shall determine, YamadaCo shall merge with and into Phathom, upon which Phathom shall be the surviving corporation and shall (i) file a certificate of merger ("Certificate of Merger") with the Secretary of State of the State of Delaware and (ii) make all other filings or recordings required by the State of Delaware or any other jurisdiction in connection with the Merger. The Merger shall become effective upon the filing of the Certificate of Merger with the Office of the Secretary of State of the State of Delaware (the "Effective Time").

(b) Upon the Effective Time, YamadaCo shall be merged with and into Phathom, whereupon the separate existence of YamadaCo shall cease, and Phathom shall be the surviving entity of the Merger (the "Surviving Corporation") in accordance with Section 251 of the DGCL.

Section 1.02. Conversion of YamadaCo Stock; Continuation of Stock of Surviving Corporation.

(a) Each issued and outstanding share of Common Stock of YamadaCo shall be converted into 1559.1183 shares of Common Stock of the Surviving Corporation as of the Effective Time. All certificates representing shares of Common Stock of YamadaCo outstanding immediately prior to the Effective Time shall upon the Effective Time represent instead the number of shares of Common Stock of the Surviving Corporation as provided above. Notwithstanding the foregoing, any holder of Common Stock may (but shall not be required to) surrender his, her or its stock certificate or certificates to the Surviving Corporation, and upon such surrender the holder may request that the Surviving Corporation issue a certificate for the correct number of shares of Common Stock of the Surviving Corporation to which the holder is entitled under the provisions of this Agreement. No fractional shares of Common Stock shall be issued. Stockholders who would otherwise be entitled to receive fractional shares of Common Stock shall have such fractional shares rounded down to the nearest whole share.

(b) The issued and outstanding shares of Common Stock of Phathom shall not be converted or exchanged in any manner, and each share of Common Stock of Phathom that is issued and outstanding as of the Effective Time shall continue to represent one (1) issued share of Common Stock of the Surviving Corporation.

**ARTICLE II.**

**THE SURVIVING ENTITY**

Section 2.01. Certificate of Incorporation and Bylaws.

The Certificate of Incorporation and Bylaws of Phathom in effect as of the Effective Time shall continue to be the Certificate of Incorporation and Bylaws of the Surviving Corporation unless and until amended in accordance with their terms and applicable law.

Section 2.02. Officers.

The individuals serving as officers of Phathom immediately prior to the Effective Time will continue to serve as officers of the Surviving Corporation upon the Effective Time, with such persons having the same title at the Surviving Corporation as such persons had at Phathom.

**ARTICLE III.**

**TRANSFER AND CONVEYANCE OF ASSETS  
AND ASSUMPTION OF LIABILITIES**

Section 3.01. Transfer, Conveyance and Assumption.

Upon the Effective Time, Phathom shall continue in existence as the Surviving Corporation, and without further transfer, succeed to and possess all of the rights, privileges and powers

of YamadaCo, and all of the assets and property of whatever kind and character of YamadaCo shall vest in Phathom without further act or deed; thereafter Phathom, as the Surviving Corporation, shall be liable for all of the liabilities and obligations of YamadaCo, and any claim or judgment against YamadaCo may be enforced against Phathom, as the Surviving Corporation, in accordance with Section 251 of the DGCL.

Section 3.02. Further Assurances.

If at any time Phathom shall consider or be advised that any further assignment, conveyance or assurance is necessary or advisable to vest, perfect or confirm of record in Phathom the title to any property or right of YamadaCo, or otherwise carry out the provisions hereof, the proper representatives of YamadaCo, as of the Effective Time, shall from time to time, as and when requested by Phathom, execute and deliver any and all proper deeds, assignments, documents, instruments and assurances and do all things necessary or proper to vest, perfect or convey title to such property or right in the Surviving Corporation, and otherwise to evidence and carry out the Merger and the provisions hereof.

**ARTICLE IV.**

**TERMINATION**

Section 4.01. Termination.

This Agreement may be terminated and the proposed Merger may be abandoned at any time prior to the Effective Time.

Section 4.02. Effect of Termination.

If this Agreement is terminated pursuant to Section 4.01, this Agreement shall become void and of no effect with no liability on the part of any party hereto.

**ARTICLE V.**

**MISCELLANEOUS**

Section 5.01. Amendment; Waiver.

Any provision of this Agreement may, subject to applicable law, be amended or waived prior to the Effective Time by an amendment or waiver signed by duly authorized representatives of the parties hereto.

Section 5.02. Successors and Assigns.

The provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns, *provided* that no party may assign, delegate or otherwise transfer any of its rights or obligations under this Agreement without the consent of the other party hereto.

Section 5.03. Reorganization.

For U.S. federal income tax purposes, the parties to this Agreement intend that the Merger will qualify as a "reorganization" within the meaning of Section 368(a) of the Internal Revenue

Code of 1986, as amended (the “Code”), and this Agreement will constitute a “plan of reorganization” within the meaning of United States Treasury Regulations Sections 1.368-2(g) and 1.368-3(a) for purposes of Sections 354, 361 and 368 of the Code.

Section 5.04. Governing Law.

This Agreement shall be construed in accordance with and governed by the laws of the State of Delaware, without giving effect to principles of conflicts of law.

Section 5.05. Counterparts; Effectiveness.

This Agreement may be signed in any number of counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement shall become effective when signed by each of the parties hereto.

*[Signature page follows]*

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed by their respective authorized representatives as of the day and year first above written.

**Phathom Pharmaceuticals, Inc.**

By: /s/ David Socks  
Name: David Socks  
Title: Chief Executive Officer

**YamadaCo IIA, Inc.**

By: /s/ Tadataka Yamada  
Name: Tadataka Yamada  
Title: Chief Executive Officer



**AMENDED AND RESTATED  
CERTIFICATE OF INCORPORATION  
OF  
PHATHOM PHARMACEUTICALS, INC.**

**(Pursuant to Sections 242 and 245 of the  
General Corporation Law of the State of Delaware)**

Phathom Pharmaceuticals, Inc., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the "**General Corporation Law**"),

**DOES HEREBY CERTIFY:**

1. That the name of this corporation is Phathom Pharmaceuticals, Inc., and that this corporation was originally incorporated pursuant to the General Corporation Law on January 9, 2018 under the name North Bridge IV, Inc.

2. That the Board of Directors duly adopted resolutions proposing to amend and restate the Certificate of Incorporation of this corporation, declaring said amendment and restatement to be advisable and in the best interests of this corporation and its stockholders, and authorizing the appropriate officers of this corporation to solicit the consent of the stockholders therefor, which resolution setting forth the proposed amendment and restatement is as follows:

**RESOLVED**, that the Certificate of Incorporation of this corporation be amended and restated in its entirety to read as follows:

**I.**

The name of this corporation is Phathom Pharmaceuticals, Inc.

**II.**

The address of the registered office of the corporation in the State of Delaware is Corporation Service Company, 251 Little Falls Drive, City of Wilmington, County of New Castle, State of Delaware 19808, and the name of the registered agent of the corporation in the State of Delaware at such address is Corporation Service Company.

**III.**

The purpose of this corporation is to engage in any lawful act or activity for which a corporation may be organized under the General Corporation Law.

**IV.**

A. This corporation is authorized to issue only one class of stock, to be designated Common Stock. The total number of shares of Common Stock presently authorized is Ten Million (10,000,000), each having a par value of \$0.0001.

V.

A. The management of the business and the conduct of the affairs of the corporation shall be vested in its Board of Directors. The number of directors which shall constitute, the whole Board of Directors shall be fixed by the Board of Directors in the manner provided in the Bylaws.

B. The Board of Directors is expressly empowered to adopt, amend or repeal the Bylaws of the corporation. The stockholders shall also have power to adopt, amend or repeal the Bylaws of the corporation; provided, however, that, in addition to any vote of the holders of any class or series of stock of the corporation required by law or by this Amended and Restated Certificate of Incorporation, such action by stockholders shall require the affirmative vote of the holders of at least a majority of the voting power of all of the then-outstanding shares of the capital stock of the corporation entitled to vote generally in the election of directors, voting together as a single class.

VI.

A. The corporation renounces, to the fullest extent permitted by law, any interest or expectancy of the corporation in, or in being offered an opportunity to participate in, any Excluded Opportunity. An “**Excluded Opportunity**” is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of (i) any director of the corporation who is not an employee of the corporation or any of its subsidiaries, or (ii) any holder of securities convertible into or exercisable for the capital stock of the corporation (including any shares of capital stock of the corporation issued upon the conversion or exercise thereof), or any partner, member, director, stockholder, employee, affiliate or agent of any such holder, other than someone who is an employee or consultant of the corporation or any of its subsidiaries (collectively, the persons referred to in clauses (i) and (ii) are “**Covered Persons**”), unless such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person’s capacity as a director of the corporation while such Covered Person is performing services in such capacity. Any repeal or modification of this Article VI will only be prospective and will not affect the rights under this Article VI in effect at the time of the occurrence of any actions or omissions to act giving rise to liability.

VII.

The corporation elects not to be governed by Section 203 of the General Corporation Law.

VIII.

A. To the fullest extent permitted by law, a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the General Corporation Law or any other law of the State of Delaware is amended after approval by the stockholders of this Article VIII to authorize corporate

action further eliminating or limiting the personal liability of directors, then the liability of a director of the corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law as so amended.

**B.** Any repeal or modification of the foregoing provisions of this Article VIII by the stockholders of the corporation shall not adversely affect any right or protection of a director of the corporation existing at the time of, or increase the liability of any director of the corporation with respect to any acts or omissions of such director occurring prior to, such repeal or modification.

#### **IX.**

**A.** To the fullest extent permitted by applicable law, the corporation is authorized to provide indemnification of (and advancement of expenses to) directors, officers and agents of the corporation (and any other persons to which General Corporation Law permits the corporation to provide indemnification) through Bylaw provisions, agreements with such agents or other persons, vote of stockholders or disinterested directors or otherwise, in excess of the indemnification and advancement otherwise permitted by Section 145 of the General Corporation Law.

**B.** Any amendment, repeal or modification of the foregoing provisions of this Article IX shall not (i) adversely affect any right or protection of any director, officer or other agent of the corporation existing at the time of such amendment, repeal or modification or (ii) increase the liability of any director of the corporation with respect to any acts or omissions of such director, officer or agent occurring prior to, such amendment, repeal or modification.

#### **X.**

The corporation reserves the right to amend, alter, change or repeal any provision contained in this Amended and Restated Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon the stockholders herein are granted subject to this reservation.

\* \* \*

3. That the foregoing amendment and restatement was approved by the holders of the requisite number of shares of this corporation in accordance with Section 228 of the General Corporation Law.

4. That this Certificate of Incorporation, which restates and integrates and further amends the provisions of this corporation's Certificate of Incorporation, has been duly adopted in accordance with Sections 242 and 245 of the General Corporation Law.

**IN WITNESS WHEREOF**, this Amended and Restated Certificate of Incorporation has been executed by a duly authorized officer of this corporation on this 6th day of May, 2019.

By: /s/ David Socks  
Name: David Socks  
Title: President and Chief Executive Officer

**BYLAWS**  
**OF**  
**PHATHOM PHARMACEUTICALS, INC.**  
**(A DELAWARE CORPORATION)**

**Adopted as of January 30, 2018**  
**Amended as of May 7, 2019**

## ARTICLE I

### OFFICES

**Section 1. Registered Office.** The registered office of the corporation in the State of Delaware shall be 251 Little Falls Drive City of Wilmington, County of New Castle, 19808 or in such other location as the Board of Directors may from time to time determine or the business of the corporation may require.

**Section 2. Other Offices.** The corporation shall also have and maintain an office or principal place of business at such place as may be fixed by the Board of Directors, and may also have offices at such other places, both within and without the State of Delaware, as the Board of Directors may from time to time determine or the business of the corporation may require.

## ARTICLE II

### CORPORATE SEAL

**Section 3. Corporate Seal.** The Board of Directors may adopt a corporate seal. Said seal may be used by causing it or a facsimile thereof to be impressed or affixed or reproduced or otherwise.

## ARTICLE III

### STOCKHOLDERS' MEETINGS

**Section 4. Place of Meetings.** Meetings of the stockholders of the corporation may be held at such place, either within or without the State of Delaware, as may be determined from time to time by the Board of Directors. The Board of Directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as provided under the Delaware General Corporation Law ("*DGCL*").

#### **Section 5. Annual Meeting.**

(a) The annual meeting of the stockholders of the corporation, for the purpose of election of directors and for such other business as may lawfully come before it, shall be held on such date and at such time as may be designated from time to time by the Board of Directors. Nominations of persons for election to the Board of Directors of the corporation and the proposal of business to be considered by the stockholders may be made at an annual meeting of stockholders: (i) pursuant to the corporation's notice of meeting of stockholders; (ii) by or at the direction of the Board of Directors; or (iii) by any stockholder of the corporation who was a stockholder of record at the time of giving of notice provided for in the following paragraph, who is entitled to vote at the meeting and who complied with the notice procedures set forth in this Section.

(b) At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. For nominations or other business to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of paragraph (a) of this Section, (i) the stockholder must have given timely notice thereof in writing to the Secretary of the corporation, (ii) such other business must be a proper matter for stockholder action under the DGCL and applicable law, (iii) if the stockholder, or the beneficial owner on whose behalf any such proposal or nomination is made, has provided the corporation with a Solicitation Notice (as defined in this paragraph), such stockholder or beneficial owner must, in the case of a proposal, have delivered a proxy statement and form of proxy to

holders of at least the percentage of the corporation's voting shares required under applicable law to carry any such proposal, or, in the case of a nomination or nominations, have delivered a proxy statement and form of proxy to holders of a percentage of the corporation's voting shares reasonably believed by such stockholder or beneficial owner to be sufficient to elect the nominee or nominees proposed to be nominated by such stockholder, and must, in either case, have included in such materials the Solicitation Notice, and (iv) if no Solicitation Notice relating thereto has been timely provided pursuant to this Section, the stockholder or beneficial owner proposing such business or nomination must not have solicited a number of proxies sufficient to have required the delivery of such a Solicitation Notice under this Section. To be timely, a stockholder's notice shall be delivered to the Secretary at the principal executive offices of the corporation not later than the close of business on the 90th day nor earlier than the close of business on the 120th day prior to the first anniversary of the preceding year's annual meeting; *provided, however*, that in the event that the date of the annual meeting is advanced more than 30 days prior to or delayed by more than 30 days after the anniversary of the preceding year's annual meeting, notice by the stockholder to be timely must be so delivered not earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the later of the 90th day prior to such annual meeting or the 10th day following the day on which public announcement of the date of such meeting is first made. In no event shall the public announcement of an adjournment of an annual meeting commence a new time period for the giving of a stockholder's notice as described above. Such stockholder's notice shall set forth: (A) as to each person whom the stockholder proposed to nominate for election or reelection as a director all information relating to such person that is required to be disclosed in solicitations of proxies for election of directors in an election contest, or is otherwise required, in each case pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "**1934 Act**"), and Rule 14a-4(d) thereunder (including such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected); (B) as to any other business that the stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting and any material interest in such business of such stockholder and the beneficial owner, if any, on whose behalf the proposal is made; and (C) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (i) the name and address of such stockholder, as they appear on the corporation's books, and of such beneficial owner, (ii) the class and number of shares of the corporation that are owned beneficially and of record by such stockholder and such beneficial owner, and (iii) whether either such stockholder or beneficial owner intends to deliver a proxy statement and form of proxy to holders of, in the case of the proposal, at least the percentage of the corporation's voting shares required under applicable law to carry the proposal or, in the case of a nomination or nominations, a sufficient number of holders of the corporation's voting shares to elect such nominee or nominees (an affirmative statement of such intent, a "**Solicitation Notice**").

(c) Notwithstanding anything in the second sentence of paragraph (b) of this Section to the contrary, in the event that the number of directors to be elected to the Board of Directors of the corporation is increased and there is no public announcement naming all of the nominees for director or specifying the size of the increased Board of Directors made by the corporation at least 100 days prior to the first anniversary of the preceding year's annual meeting, a stockholder's notice required by this Section shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be delivered to the Secretary at the principal executive offices of the corporation not later than the close of business on the 10th day following the day on which such public announcement is first made by the corporation.

(d) Only such persons who are nominated in accordance with the procedures set forth in this Section (or elected or appointed pursuant to Article IV of these Bylaws) shall be eligible to serve as directors and only such business shall be conducted at a meeting of stockholders as shall have been brought before the meeting in accordance with the procedures set forth in this Section. Except as otherwise provided by law, the Chairman of the meeting shall have the power and duty to determine whether a nomination or

any business proposed to be brought before the meeting was made, or proposed, as the case may be, in accordance with the procedures set forth in these Bylaws and, if any proposed nomination or business is not in compliance with these Bylaws, to declare that such defective proposal or nomination shall not be presented for stockholder action at the meeting and shall be disregarded.

(e) Notwithstanding the foregoing provisions of this Section, in order to include information with respect to a stockholder proposal in the proxy statement and form of proxy for a stockholders' meeting, stockholders must provide notice as required by the regulations promulgated under the 1934 Act. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the corporation proxy statement pursuant to Rule 14a-8 under the 1934 Act.

(f) For purposes of this Section, "public announcement" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission (the "SEC") pursuant to Section 13, 14 or 15(d) of the 1934 Act.

#### **Section 6. Special Meetings.**

(a) Special meetings of the stockholders of the corporation may be called, for any purpose or purposes, by (i) the Chairman of the Board of Directors, (ii) the Chief Executive Officer, (iii) the Board of Directors pursuant to a resolution adopted by directors representing a quorum of the Board of Directors or (iv) by the holders of shares entitled to cast not less than 20% of the votes at the meeting, and shall be held at such place, on such date, and at such time as the Board of Directors shall fix. At any time or times that the corporation is subject to Section 2115(b) of the California General Corporation Law ("CGCL"), stockholders holding 5% or more of the outstanding shares shall have the right to call a special meeting of stockholders as set forth in Section 18(b) of these Bylaws.

(b) If a special meeting is properly called by any person or persons other than the Board of Directors, the request shall be in writing, specifying the general nature of the business proposed to be transacted, and shall be delivered personally or sent by certified or registered mail, return receipt requested, or by telegraphic or other facsimile transmission to the Chairman of the Board of Directors, the Chief Executive Officer, or the Secretary of the corporation. No business may be transacted at such special meeting otherwise than specified in such notice. The Board of Directors shall determine the time and place of such special meeting, which shall be held not less than 35 nor more than 120 days after the date of the receipt of the request. Upon determination of the time and place of the meeting, the officer receiving the request shall cause notice to be given to the stockholders entitled to vote, in accordance with the provisions of Section 7 of these Bylaws. Nothing contained in this paragraph (b) shall be construed as limiting, fixing, or affecting the time when a meeting of stockholders called by action of the Board of Directors may be held.

**Section 7. Notice of Meetings.** Except as otherwise provided by law, notice, given in writing or by electronic transmission, of each meeting of stockholders shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting, such notice to specify the place, if any, date and hour, in the case of special meetings, the purpose or purposes of the meeting, and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at any such meeting. If mailed, notice is given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation. Notice of the time, place, if any, and purpose of any meeting of stockholders may be waived in writing, signed by the person entitled to notice thereof or by electronic transmission by such person, either before or after such meeting, and will be waived by any stockholder by his or her attendance thereat in person, by remote communication, if applicable, or by proxy, except when



the stockholder attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Any stockholder so waiving notice of such meeting shall be bound by the proceedings of any such meeting in all respects as if due notice thereof had been given.

**Section 8. Quorum.** At all meetings of stockholders, except as otherwise provided by statute, the Certificate of Incorporation or these Bylaws, the presence, in person, by remote communication, if applicable, or by proxy duly authorized, of the holders of a majority of the outstanding shares of stock entitled to vote shall constitute a quorum for the transaction of business. In the absence of a quorum, any meeting of stockholders may be adjourned, from time to time, either by the chairman of the meeting or by vote of the holders of a majority of the shares represented thereat, but no other business shall be transacted at such meeting. The stockholders present at a duly called or convened meeting, at which a quorum is present, may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum. Except as otherwise provided by statute, the Certificate of Incorporation or these Bylaws, in all matters other than the election of directors, the affirmative vote of a majority of shares present in person, by remote communication, if applicable, or represented by proxy duly authorized at the meeting and entitled to vote generally on the subject matter shall be the act of the stockholders. Except as otherwise provided by statute, the Certificate of Incorporation or these Bylaws, directors shall be elected by a plurality of the votes of the shares present in person, by remote communication, if applicable, or represented by proxy duly authorized at the meeting and entitled to vote generally on the election of directors. Where a separate vote by a class or classes or series is required, except where otherwise provided by statute, the Certificate of Incorporation or these Bylaws, a majority of the outstanding shares of such class or classes or series, present in person, by remote communication, if applicable, or represented by proxy duly authorized, shall constitute a quorum entitled to take action with respect to that vote on that matter. Except as otherwise provided by statute, the Certificate of Incorporation or these Bylaws, the affirmative vote of the majority (plurality, in the case of the election of directors) of shares of such class or classes or series present in person, by remote communication, if applicable, or represented by proxy at the meeting shall be the act of such class or classes or series.

**Section 9. Adjournment and Notice of Adjourned Meetings.** Any meeting of stockholders, whether annual or special, may be adjourned from time to time either by the chairman of the meeting or by the vote of a majority of the shares present in person, by remote communication, if applicable, or represented by proxy. When a meeting is adjourned to another time or place, if any, notice need not be given of the adjourned meeting if the time and place, if any, thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business that might have been transacted at the original meeting pursuant to the Certificate of Incorporation, these Bylaws or applicable law. If the adjournment is for more than 30 days or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

**Section 10. Voting Rights.** For the purpose of determining those stockholders entitled to vote at any meeting of the stockholders, except as otherwise provided by law, only persons in whose names shares stand on the stock records of the corporation on the record date, as provided in Section 12 of these Bylaws, shall be entitled to vote at any meeting of stockholders. Every person entitled to vote or execute consents shall have the right to do so either in person, by remote communication, if applicable, or by an agent or agents authorized by a proxy granted in accordance with Delaware law. An agent so appointed need not be a stockholder. No proxy shall be voted after three years from its date of creation unless the proxy provides for a longer period.

**Section 11. Joint Owners of Stock.** If shares or other securities having voting power stand of record in the names of two or more persons, whether fiduciaries, members of a partnership, joint tenants,

tenants in common, tenants by the entirety, or otherwise, or if two or more persons have the same fiduciary relationship respecting the same shares, unless the Secretary is given written notice to the contrary and is furnished with a copy of the instrument or order appointing them or creating the relationship wherein it is so provided, their acts with respect to voting (including giving consent pursuant to Section 13) shall have the following effect: (a) if only one votes, his or her act binds all; (b) if more than one votes, the act of the majority so voting binds all; (c) if more than one votes, but the vote is evenly split on any particular matter, each faction may vote the securities in question proportionally, or may apply to the Delaware Court of Chancery for relief as provided in the DGCL, Section 217(b). If the instrument filed with the Secretary shows that any such tenancy is held in unequal interests, a majority or even-split for the purpose of subsection (c) shall be a majority or even-split in interest.

**Section 12. List of Stockholders.** The Secretary shall prepare and make, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at said meeting, arranged in alphabetical order, showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or during ordinary business hours, at the principal place of business of the corporation. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. The list shall be open to examination of any stockholder during the time of the meeting as provided by law.

**Section 13. Action Without Meeting.**

(a) Unless otherwise provided in the Certificate of Incorporation, any action required by statute to be taken at any annual or special meeting of the stockholders, or any action that may be taken at any annual or special meeting of the stockholders, may be taken without a meeting, without prior notice and without a vote, if a consent in writing, or by electronic transmission setting forth the action so taken, shall be signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted.

(b) Every written consent or electronic transmission shall bear the date of signature of each stockholder who signs the consent, and no written consent or electronic transmission shall be effective to take the corporate action referred to therein unless, within 60 days of the earliest dated consent delivered to the corporation in the manner herein required, written consents or electronic transmissions signed by a sufficient number of stockholders to take action are delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation's registered office shall be by hand or by certified or registered mail, return receipt requested.

(c) Prompt notice of the taking of the corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing or by electronic transmission and who, if the action had been taken at a meeting, would have been entitled to notice of the meeting if the record date for such meeting had been the date that written consents signed by a sufficient number of stockholders to take action were delivered to the corporation as provided in Section 228(c) of the DGCL. If the action to which the stockholders consent is such as would have required the filing of a certificate under any section of the DGCL if such action had been voted on by stockholders at a meeting thereof, then the certificate filed under such section shall state, in lieu of any statement required by

such section concerning any vote of stockholders, that written consent has been given in accordance with Section 228 of the DGCL.

**(d)** An electronic mail, facsimile or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes of this Section, provided that any such electronic mail, facsimile or other electronic transmission sets forth or is delivered with information from which the corporation can determine (i) that the electronic mail, facsimile or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder and (ii) the date on which such stockholder or proxyholder or authorized person or persons transmitted such electronic mail, facsimile or electronic transmission. The date on which such electronic mail, facsimile or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. No consent given by electronic mail, facsimile or other electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form shall be delivered to the corporation by delivery to its registered office in the state of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation's registered office shall be made by hand or by certified or registered mail, return receipt requested. Notwithstanding the foregoing limitations on delivery, consents given by electronic mail, facsimile or other electronic transmission may be otherwise delivered to the principal place of business of the corporation or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded if, to the extent and in the manner provided by resolution of the board of directors of the corporation. Any copy, facsimile or other reliable reproduction of a consent in writing may be substituted or used in lieu of the original writing for any and all purposes for which the original writing could be used, provided that such copy, facsimile or other reproduction shall be a complete reproduction of the entire original writing.

#### **Section 14. Organization.**

**(a)** At every meeting of stockholders, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the Chief Executive Officer, or, if the Chief Executive Officer is absent, a chairman of the meeting chosen by a majority in interest of the stockholders entitled to vote, present in person or by proxy, shall act as chairman. The Secretary, or, in his or her absence, an Assistant Secretary directed to do so by the Chief Executive Officer, shall act as secretary of the meeting.

**(b)** The Board of Directors shall be entitled to make such rules or regulations for the conduct of meetings of stockholders as it shall deem necessary, appropriate or convenient. Subject to such rules and regulations of the Board of Directors, if any, the chairman of the meeting shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are necessary, appropriate or convenient for the proper conduct of the meeting, including, without limitation, establishing an agenda or order of business for the meeting, rules and procedures for maintaining order at the meeting and the safety of those present, limitations on participation in such meeting to stockholders of record of the corporation and their duly authorized and constituted proxies and such other persons as the chairman shall permit, restrictions on entry to the meeting after the time fixed for the commencement thereof, limitations on the time allotted to questions or comments by participants and regulation of the opening and closing of the polls for balloting on matters that are to be voted on by ballot. The date and time of the opening and closing of the polls for each matter upon which the stockholders will vote at the meeting shall be announced at the meeting. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with rules of parliamentary procedure.

## ARTICLE IV

### DIRECTORS

**Section 15. Number and Term of Office.** The authorized number of directors of the corporation shall be fixed by the Board of Directors from time to time. Directors need not be stockholders unless so required by the Certificate of Incorporation. If for any cause, the directors shall not have been elected at an annual meeting, they may be elected as soon thereafter as convenient.

**Section 16. Powers.** The business and affairs of the corporation shall be managed by or under the direction of the Board of Directors, except as otherwise provided by statute or by the Certificate of Incorporation.

**Section 17. Term of Directors.**

(a) Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, directors shall be elected at each annual meeting of stockholders to serve until his or her successor is duly elected and qualified or until his or her death, resignation or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

(b) No person entitled to vote at an election for directors may cumulate votes to which such person is entitled, unless, at the time of such election, the corporation is subject to Section 2115(b) of the CGCL. During such time or times that the corporation is subject to Section 2115(b) of the CGCL, every stockholder entitled to vote at an election for directors may cumulate such stockholder's votes and give one candidate a number of votes equal to the number of directors to be elected multiplied by the number of votes to which such stockholder's shares are otherwise entitled, or distribute the stockholder's votes on the same principle among as many candidates as such stockholder thinks fit. No stockholder, however, shall be entitled to so cumulate such stockholder's votes unless (i) the names of such candidate or candidates have been placed in nomination prior to the voting and (ii) the stockholder has given notice at the meeting, prior to the voting, of such stockholder's intention to cumulate such stockholder's votes. If any stockholder has given proper notice to cumulate votes, all stockholders may cumulate their votes for any candidates who have been properly placed in nomination. Under cumulative voting, the candidates receiving the highest number of votes, up to the number of directors to be elected, are elected.

**Section 18. Vacancies.**

(a) Unless otherwise provided in the Certificate of Incorporation, and subject to the rights of the holders of any series of Preferred Stock, any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board of Directors, or by a sole remaining director; *provided, however*, that whenever the holders of any class or classes of stock or series thereof are entitled to elect one or more directors by the provisions of the Certificate of Incorporation, vacancies and newly created directorships of such class or classes or series shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled by a majority of the directors elected by such class or classes or series thereof then in office, or by a sole remaining director so elected. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected

and qualified. A vacancy in the Board of Directors shall be deemed to exist under this Bylaw in the case of the death, removal or resignation of any director.

(b) At any time or times that the corporation is subject to Section 2115(b) of the CGCL, if, after the filling of any vacancy, the directors then in office who have been elected by stockholders shall constitute less than a majority of the directors then in office, then:

(i) any holder or holders of an aggregate of 5% or more of the total number of shares at the time outstanding having the right to vote for those directors may call a special meeting of stockholders; or

(ii) the Superior Court of the proper county shall, upon application of such stockholder or stockholders, summarily order a special meeting of the stockholders, to be held to elect the entire board, all in accordance with Section 305(c) of the CGCL, the term of office of any director shall terminate upon that election of a successor.

**Section 19. Resignation.** Any director may resign at any time by delivering his or her notice in writing or by electronic transmission to the Secretary, such resignation to specify whether it will be effective at a particular time, upon receipt by the Secretary or at the pleasure of the Board of Directors. If no such specification is made, it shall be deemed effective at the pleasure of the Board of Directors. When one or more directors shall resign from the Board of Directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each Director so chosen shall hold office for the unexpired portion of the term of the Director whose place shall be vacated and until his or her successor shall have been duly elected and qualified.

#### **Section 20. Removal.**

(a) Subject to any limitations imposed by applicable law, the Board of Directors or any director may be removed from office at any time (i) with cause by the affirmative vote of the holders of a majority of the voting power of all then-outstanding shares of capital stock of the corporation entitled to vote generally at an election of directors or (ii) without cause by the affirmative vote of the holders of a majority of the voting power of all then-outstanding shares of capital stock of the corporation, entitled to elect such director.

(b) During such time or times that the corporation is subject to Section 2115(b) of the CGCL, the Board of Directors or any individual director may be removed from office at any time without cause by the affirmative vote of the holders of a majority of the outstanding shares entitled to vote on such removal; *provided, however*, that unless the entire Board of Directors is removed, no individual director may be removed when the votes cast against such director's removal, or not consenting in writing to such removal, would be sufficient to elect that director if voted cumulatively at an election at which the same total number of votes were cast (or, if such action is taken by written consent, all shares entitled to vote were voted) and the entire number of directors authorized at the time of such director's most recent election were then being elected.

#### **Section 21. Meetings**

(a) **Regular Meetings.** Unless otherwise restricted by the Certificate of Incorporation, regular meetings of the Board of Directors may be held at any time or date and at any place within or without the State of Delaware that has been designated by the Board of Directors and publicized among all directors, either orally or in writing, including a voice-messaging system or other system designated to

record and communicate messages, facsimile, or by electronic mail or other electronic means. No further notice shall be required for a regular meeting of the Board of Directors.

**(b) Special Meetings.** Unless otherwise restricted by the Certificate of Incorporation, special meetings of the Board of Directors may be held at any time and place within or without the State of Delaware whenever called by the Chairman of the Board, the Chief Executive Officer (if a director), the President (if a director) or any director.

**(c) Meetings by Electronic Communications Equipment.** Any member of the Board of Directors, or of any committee thereof, may participate in a meeting by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting by such means shall constitute presence in person at such meeting.

**(d) Notice of Special Meetings.** Notice of the time and place of all special meetings of the Board of Directors shall be orally or in writing, by telephone, including a voice messaging system or other system or technology designed to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means, during normal business hours, at least 24 hours before the date and time of the meeting. If notice is sent by US mail, it shall be sent by first class mail, postage prepaid at least three days before the date of the meeting. Notice of any meeting may be waived in writing or by electronic transmission at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends the meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

**(e) Waiver of Notice.** The transaction of all business at any meeting of the Board of Directors, or any committee thereof, however called or noticed, or wherever held, shall be as valid as though had at a meeting duly held after regular call and notice, if a quorum be present and if, either before or after the meeting, each of the directors not present who did not receive notice shall sign a written waiver of notice or shall waive notice by electronic transmission. All such waivers shall be filed with the corporate records or made a part of the minutes of the meeting.

## **Section 22. Quorum and Voting.**

**(a)** Unless the Certificate of Incorporation requires a greater number, a quorum of the Board of Directors shall consist of a majority of the total number of directors then serving; *provided, however*, that such number shall never be less than 1/3 of the total number of directors except that when one director is authorized, then one director shall constitute a quorum. At any meeting, whether a quorum be present or otherwise, a majority of the directors present may adjourn from time to time until the time fixed for the next regular meeting of the Board of Directors, without notice other than by announcement at the meeting. If the Certificate of Incorporation provides that one or more directors shall have more or less than one vote per director on any matter, every reference in this Section to a majority or other proportion of the directors shall refer to a majority or other proportion of the votes of the directors.

**(b)** At each meeting of the Board of Directors at which a quorum is present, all questions and business shall be determined by the affirmative vote of a majority of the directors present, unless a different vote be required by law, the Certificate of Incorporation or these Bylaws.

**Section 23. Action Without Meeting.** Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of

Directors or committee, as the case may be, consent thereto in writing or by electronic transmission, and such writing or writings or transmission or transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

**Section 24. Fees and Compensation.** Directors shall be entitled to such compensation for their services as may be approved by the Board of Directors, including, if so approved, by resolution of the Board of Directors, a fixed sum and expenses of attendance, if any, for attendance at each regular or special meeting of the Board of Directors and at any meeting of a committee of the Board of Directors. Nothing herein contained shall be construed to preclude any director from serving the corporation in any other capacity as an officer, agent, employee, or otherwise and receiving compensation therefor.

**Section 25. Committees.**

**(a) Executive Committee.** The Board of Directors may appoint an Executive Committee to consist of one or more members of the Board of Directors. The Executive Committee, to the extent permitted by law and provided in the resolution of the Board of Directors, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority in reference to (i) approving or adopting, or recommending to the stockholders, any action or matter expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopting, amending or repealing any bylaw of the corporation.

**(b) Other Committees.** The Board of Directors may, from time to time, appoint such other committees as may be permitted by law. Such other committees appointed by the Board of Directors shall consist of one or more members of the Board of Directors and shall have such powers and perform such duties as may be prescribed by the resolution or resolutions creating such committees, but in no event shall any such committee have the powers denied to the Executive Committee in these Bylaws.

**(c) Term.** The Board of Directors, subject to any requirements of any outstanding series of Preferred Stock and the provisions of paragraphs (a) or (b) of this Section may at any time increase or decrease the number of members of a committee or terminate the existence of a committee. The membership of a committee member shall terminate on the date of his or her death or voluntary resignation from the committee or from the Board of Directors. The Board of Directors may at any time for any reason remove any individual committee member and the Board of Directors may fill any committee vacancy created by death, resignation, removal or increase in the number of members of the committee. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee, and, in addition, in the absence or disqualification of any member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member.

**(d) Meetings.** Unless the Board of Directors shall otherwise provide, regular meetings of the Executive Committee or any other committee appointed pursuant to this Section shall be held at such times and places as are determined by the Board of Directors, or by any such committee, and when notice thereof has been given to each member of such committee, no further notice of such regular meetings need be given thereafter. Special meetings of any such committee may be held at any place that has been determined from time to time by such committee, and may be called by any director who is a member of such committee, upon notice to the members of such committee of the time and place of such special meeting given in the manner provided for the giving of notice to members of the Board of Directors of the

time and place of special meetings of the Board of Directors. Notice of any special meeting of any committee may be waived in writing at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends such special meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Unless otherwise provided by the Board of Directors in the resolutions authorizing the creation of the committee, a majority of the authorized number of members of any such committee shall constitute a quorum for the transaction of business, and the act of a majority of those present at any meeting at which a quorum is present shall be the act of such committee.

**Section 26. Organization.** At every meeting of the directors, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the Chief Executive Officer (if a director), or if the Chief Executive Officer is not a director or is absent, the President (if a director), or if the President is not a director or is absent, the most senior Vice President (if a director) or, in the absence of any such person, a chairman of the meeting chosen by a majority of the directors present, shall preside over the meeting. The Secretary, or in his or her absence, any Assistant Secretary directed to do so by the Chief Executive Officer or President, shall act as secretary of the meeting.

## ARTICLE V

### OFFICERS

**Section 27. Officers Designated.** The officers of the corporation shall include, if and when designated by the Board of Directors, the Chief Executive Officer, the President, one or more Vice Presidents, the Secretary, the Chief Financial Officer, the Treasurer and the Controller, all of whom shall be elected at the annual organizational meeting of the Board of Directors. The Board of Directors may also appoint one or more Assistant Secretaries, Assistant Treasurers, Assistant Controllers and such other officers and agents with such powers and duties as it shall deem necessary. The Board of Directors may assign such additional titles to one or more of the officers as it shall deem appropriate. Any one person may hold any number of offices of the corporation at any one time unless specifically prohibited therefrom by law. The salaries and other compensation of the officers of the corporation shall be fixed by or in the manner designated by the Board of Directors.

#### **Section 28. Tenure and Duties of Officers.**

(a) **General.** All officers shall hold office at the pleasure of the Board of Directors and until their successors shall have been duly elected and qualified, unless sooner removed. Any officer elected or appointed by the Board of Directors may be removed at any time by the Board of Directors. If the office of any officer becomes vacant for any reason, the vacancy may be filled by the Board of Directors, or by the Chief Executive Officer or other officer if so authorized by the Board of Directors.

(b) **Duties of Chairman of the Board of Directors.** The Chairman of the Board of Directors, when present, shall preside at all meetings of the stockholders and the Board of Directors. The Chairman of the Board of Directors shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time. If there is no Chief Executive Officer and no President, then the Chairman of the Board of Directors shall also serve as the Chief Executive Officer of the corporation and shall have the powers and duties prescribed in paragraph (c) of this Section.

(c) **Duties of Chief Executive Officer.** The Chief Executive Officer shall preside at all meetings of the stockholders and (if a director) at all meetings of the Board of Directors, unless the Chairman of the Board of Directors has been appointed and is present. The Chief Executive Officer shall



be the chief executive officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. The Chief Executive Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time.

**(d) Duties of President.** In the absence or disability of the Chief Executive Officer or if the office of Chief Executive Officer is vacant, the President shall preside at all meetings of the stockholders and (if a director) at all meetings of the Board of Directors, unless the Chairman of the Board of Directors has been appointed and is present. If the office of Chief Executive Officer is vacant, the President shall be the chief executive officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. The President shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time.

**(e) Duties of Vice Presidents.** The Vice Presidents may assume and perform the duties of the President in the absence or disability of the President or whenever the office of President is vacant. The Vice Presidents shall perform other duties commonly incident to their office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

**(f) Duties of Secretary.** The Secretary shall attend all meetings of the stockholders and of the Board of Directors and shall record all acts and proceedings thereof in the minute book of the corporation. The Secretary shall give notice in conformity with these Bylaws of all meetings of the stockholders and of all meetings of the Board of Directors and any committee thereof requiring notice. The Secretary shall perform all other duties provided for in these Bylaws and other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time. The Chief Executive Officer may direct any Assistant Secretary to assume and perform the duties of the Secretary in the absence or disability of the Secretary, and each Assistant Secretary shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer shall designate from time to time.

**(g) Duties of Chief Financial Officer.** The Chief Financial Officer shall keep or cause to be kept the books of account of the corporation in a thorough and proper manner and shall render statements of the financial affairs of the corporation in such form and as often as required by the Board of Directors or the Chief Executive Officer. The Chief Financial Officer, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the corporation. The Chief Financial Officer shall perform other duties commonly incident to his or her office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer shall designate from time to time. The Chief Executive Officer may direct the Treasurer or any Assistant Treasurer, or the Controller or any Assistant Controller to assume and perform the duties of the Chief Financial Officer in the absence or disability of the Chief Financial Officer, and each Treasurer and Assistant Treasurer and each Controller and Assistant Controller shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer shall designate from time to time.

**Section 29. Delegation of Authority.** The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

**Section 30. Resignations.** Any officer may resign at any time by giving notice in writing or by electronic transmission notice to the Board of Directors or to the Chief Executive Officer or to the

President or to the Secretary. Any such resignation shall be effective when received by the person or persons to whom such notice is given, unless a later time is specified therein, in which event the resignation shall become effective at such later time. Unless otherwise specified in such notice, the acceptance of any such resignation shall not be necessary to make it effective. Any resignation shall be without prejudice to the rights, if any, of the corporation under any contract with the resigning officer.

**Section 31. Removal.** Any officer may be removed from office at any time, either with or without cause, by the affirmative vote of a majority of the directors in office at the time, or by the unanimous written or electronic consent of the directors in office at the time, or by any committee or superior officers upon whom such power of removal may have been conferred by the Board of Directors.

## ARTICLE VI

### EXECUTION OF CORPORATE INSTRUMENTS AND VOTING OF SECURITIES OWNED BY THE CORPORATION

**Section 32. Execution of Corporate Instruments.** The Board of Directors may, in its discretion, determine the method and designate the signatory officer or officers, or other person or persons, to execute on behalf of the corporation any corporate instrument or document, or to sign on behalf of the corporation the corporate name, or to enter into contracts on behalf of the corporation, except as otherwise provided by law or these Bylaws, and such execution or signature shall be binding upon the corporation. All checks and drafts drawn on banks or other depositories of funds to the credit of the corporation or on special accounts of the corporation shall be signed by such person or persons as the Board of Directors shall authorize so to do. Unless authorized or ratified by the Board of Directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

**Section 33. Voting of Securities Owned by the Corporation.** All stock and other securities of other corporations owned or held by the corporation for itself, or for other parties in any capacity, shall be voted, and all proxies with respect thereto shall be executed, by the person authorized so to do by resolution of the Board of Directors, or, in the absence of such authorization, by the Chairman of the Board of Directors, the Chief Executive Officer, the President, or any Vice President.

## ARTICLE VII

### SHARES OF STOCK

**Section 34. Form and Execution of Certificates.** The shares of the corporation shall be represented by certificates, or shall be uncertificated. Certificates for the shares of stock, if any, of the corporation shall be in such form as is consistent with the Certificate of Incorporation and applicable law. Every holder of shares of stock in the corporation represented by certificate shall be entitled to have a certificate signed by or in the name of the corporation by any two authorized officers, including but not limited to the Chief Executive Officer, the President, the Chief Financial Officer, any Vice President, the Treasurer or Assistant Treasurer or the Secretary or Assistant Secretary, certifying the number of shares owned by him or her in the corporation. Any or all of the signatures on the certificate may be facsimiles. In case any officer, transfer agent, or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued with the same effect as if he or she were such officer, transfer agent, or registrar at the date of issue.

**Section 35. Lost Certificates.** A new certificate or certificates shall be issued in place of any certificate or certificates theretofore issued by the corporation alleged to have been lost, stolen, or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen, or destroyed. The corporation may require, as a condition precedent to the issuance of a new certificate or certificates, the owner of such lost, stolen, or destroyed certificate or certificates, or the owner's legal representative, to agree to indemnify the corporation in such manner as it shall require or to give the corporation a surety bond in such form and amount as it may direct as indemnity against any claim that may be made against the corporation with respect to the certificate alleged to have been lost, stolen, or destroyed.

**Section 36. Restrictions on Transfer.**

(a) No holder of any of the shares of stock of the corporation may sell, transfer, assign, pledge, or otherwise dispose of or encumber any of the shares of stock of the corporation or any right or interest therein, whether voluntarily or by operation of law, or by gift or otherwise (each, a "**Transfer**") without the prior written consent of the corporation, upon duly authorized action of its Board of Directors. The corporation may withhold consent for any legitimate corporate purpose, as determined by the Board of Directors. Examples of the basis for the corporation to withhold its consent include, without limitation, (i) if such Transfer to individuals, companies or any other form of entity identified by the corporation as a potential competitor or considered by the corporation to be unfriendly; or (ii) if such Transfer increases the risk of the corporation having a class of security held of record by 2,000 or more persons, or 500 or more persons who are not accredited investors (as such term is defined by the SEC), as described in Section 12(g) of the 1934 Act and any related regulations, or otherwise requiring the corporation to register any class of securities under the 1934 Act; or (iii) if such Transfer would result in the loss of any federal or state securities law exemption relied upon by the corporation in connection with the initial issuance of such shares or the issuance of any other securities; or (iv) if such Transfer is facilitated in any manner by any public posting, message board, trading portal, internet site, or similar method of communication, including without limitation any trading portal or internet site intended to facilitate secondary transfers of securities; or (v) if such Transfer is to be effected in a brokered transaction; or (vi) if such Transfer represents a Transfer of less than all of the shares then held by the stockholder and its Affiliates (as defined below) or is to be made to more than a single transferee.

(b) If a stockholder desires to Transfer any shares, then the stockholder shall first give written notice thereof to the corporation. The notice shall name the proposed transferee and state the number of shares to be transferred, the proposed consideration, and all other terms and conditions of the proposed transfer. Any shares proposed to be transferred to which Transfer the corporation has consented pursuant to paragraph (a) of this Section will first be subject to the corporation's right of first refusal located in Section 37 of these Bylaws.

(c) At the option of the corporation, the stockholder shall be obligated to pay to the corporation a reasonable transfer fee related to the costs and time of the corporation and its legal and other advisors related to any proposed Transfer.

(d) Any Transfer, or purported Transfer, of shares not made in strict compliance with this Section shall be null and void, shall not be recorded on the books of the corporation and shall not be recognized by the corporation.

(e) The foregoing restriction on Transfer shall not apply to: (1) the Transfer of shares of Preferred Stock; (2) the Transfer of any shares of Common Stock issued upon the conversion of any shares of Preferred Stock; or (3) the Transfer of any shares of Common Stock held by a stockholder to any person, entity or firm which, directly or indirectly, controls, is controlled by or is under common control

with such stockholder, including, without limitation, any entity of which the stockholder is a partner or member, any partner, officer, director, member or employee of such stockholder and any venture capital fund or registered investment company now or hereafter existing of which the stockholder is a partner or member which is controlled by or under common control with one or more general partners, managing members or investment advisors of such stockholder or shares the same management company or investment advisor with such stockholder (an “*Affiliate*”).

(f) The foregoing restriction on Transfer shall terminate upon the date securities of the corporation are first offered to the public pursuant to a registration statement filed with, and declared effective by, the SEC under the Securities Act of 1933, as amended (the “*1933 Act*”).

(g) The certificates representing shares of Common Stock of the corporation shall bear on their face the following legend so long as the foregoing Transfer restrictions are in effect:

“THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A TRANSFER RESTRICTION, AS PROVIDED IN THE BYLAWS OF THE CORPORATION.”

**Section 37. Right of First Refusal.** No stockholder shall Transfer any of the shares of stock of the corporation, except by a Transfer that meets the requirements set forth in this Section 37, in addition to any other restrictions or requirements set forth under applicable law or these Bylaws:

(a) If the stockholder desires to Transfer any of his or her shares of stock, then the stockholder shall first give written notice thereof to the corporation. The notice shall name the proposed transferee and state the number of shares to be transferred, the proposed consideration, and all other terms and conditions of the proposed transfer.

(b) For 30 days following receipt of such notice, the corporation shall have the option to purchase up to all the shares specified in the notice at the price and upon the terms set forth in such notice; *provided, however*, that, with the consent of the stockholder, the corporation shall have the option to purchase a lesser portion of the shares specified in said notice at the price and upon the terms set forth therein. In the event of a gift, property settlement or other Transfer in which the proposed transferee is not paying the full price for the shares, and that is not otherwise exempted from the provisions of this Section, the price shall be deemed to be the fair market value of the stock at such time as determined in good faith by the Board of Directors. In the event the corporation elects to purchase all of the shares or, with consent of the stockholder, a lesser portion of the shares, it shall give written notice to the transferring stockholder of its election and settlement for said shares shall be made as provided below in paragraph (d) of this Section.

(c) The corporation may assign its rights hereunder.

(d) In the event the corporation and/or its assignee(s) elect to acquire any of the shares of the transferring stockholder as specified in said transferring stockholder’s notice, the Secretary of the corporation shall so notify the transferring stockholder and settlement thereof shall be made in cash within 30 days after the Secretary of the corporation receives said transferring stockholder’s notice; provided that if the terms of payment set forth in said transferring stockholder’s notice were other than cash against delivery, the corporation and/or its assignee(s) shall pay for said shares on the same terms and conditions set forth in said transferring stockholder’s notice.

(e) In the event the corporation and/or its assignees(s) do not elect to acquire all of the shares specified in the transferring stockholder’s notice, said transferring stockholder may, subject to the

corporation's approval and all other restrictions on Transfer located in Section 36 of these Bylaws, within the 60-day period following the expiration or waiver of the option rights granted to the corporation and/or its assignees(s) herein, Transfer the shares specified in said transferring stockholder's notice that were not acquired by the corporation and/or its assignees(s) as specified in said transferring stockholder's notice. All shares so sold by said transferring stockholder shall continue to be subject to the provisions of this Bylaw in the same manner as before said Transfer.

**(f)** Anything to the contrary contained herein notwithstanding, the following transactions shall be exempt from the right of first refusal in paragraph (a) of this Section:

**(1)** A stockholder's Transfer of any or all shares held either during such stockholder's lifetime or on death by will or intestacy to such stockholder's immediate family or to any custodian or trustee for the account of such stockholder or such stockholder's immediate family or to any limited partnership of which the stockholder, members of such stockholder's immediate family or any trust for the account of such stockholder or such stockholder's immediate family will be the general or limited partner(s) of such partnership. "Immediate family" as used herein shall mean spouse, lineal descendant, father, mother, brother, or sister of the stockholder making such Transfer;

**(2)** A stockholder's bona fide pledge or mortgage of any shares with a commercial lending institution, provided that any subsequent Transfer of said shares by said institution shall be conducted in the manner set forth in this Bylaw;

**(3)** A stockholder's Transfer of any or all of such stockholder's shares to the corporation or to any other stockholder of the corporation;

**(4)** A stockholder's Transfer of any or all of such stockholder's shares to a person who, at the time of such Transfer, is an officer or director of the corporation;

**(5)** A corporate stockholder's Transfer of any or all of its shares pursuant to and in accordance with the terms of any merger, consolidation, reclassification of shares or capital reorganization of the corporate stockholder, or pursuant to a sale of all or substantially all of the stock or assets of a corporate stockholder;

**(6)** A stockholder's Transfer of shares of Preferred Stock of the corporation (or any shares of Common Stock issued upon conversion thereof);

**(7)** A corporate stockholder's Transfer of any or all of its shares to any or all of its stockholders;

**(8)** A Transfer by a stockholder that is a limited or general partnership to any or all of its partners or former partners in accordance with partnership interests; or

**(9)** A Transfer by a stockholder to an Affiliate of the stockholder.

In any such case, the transferee, assignee, or other recipient shall receive and hold such stock subject to the provisions of this Section and any other restrictions set forth in these Bylaws, and there shall be no further Transfer of such stock except in accord with this Section and the other provisions of these Bylaws.

**(g)** The provisions of this Bylaw may be waived with respect to any Transfer either by the corporation, upon duly authorized action of its Board of Directors, or by the stockholders, upon the

express written consent of the owners of a majority of the voting power of the corporation (excluding the votes represented by those shares to be transferred by the transferring stockholder). This Bylaw may be amended or repealed either by a duly authorized action of the Board of Directors or by the stockholders, upon the express written consent of the owners of a majority of the voting power of the corporation.

(h) Any Transfer, or purported Transfer, of securities of the corporation shall be null and void unless the terms, conditions, and provisions of this Bylaw are strictly observed and followed.

(i) The foregoing right of first refusal shall terminate upon the date securities of the corporation are first offered to the public pursuant to a registration statement filed with, and declared effective by, the SEC under the 1933 Act.

(j) The certificates representing shares of Common Stock of the corporation that are subject to the right of first refusal in paragraph (a) of this Section shall bear on their face the following legend so long as the foregoing right of first refusal remains in effect:

“THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A RIGHT OF FIRST REFUSAL OPTION IN FAVOR OF THE CORPORATION AND/OR ITS ASSIGNEE(S), AS PROVIDED IN THE BYLAWS OF THE CORPORATION.”

(k) To the extent this Section conflicts with any written agreements between the corporation and the stockholder attempting to Transfer shares, such agreement shall control.

### **Section 38. Fixing Record Dates.**

(a) In order that the corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall, subject to applicable law, not be more than 60 nor less than 10 days before the date of such meeting. If no record date is fixed by the Board of Directors, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day immediately preceding the day on which notice is given, or if notice is waived, at the close of business on the day immediately preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided, however*, that the Board of Directors may fix a new record date for the adjourned meeting.

(b) In order that the corporation may determine the stockholders entitled to consent to corporate action in writing without a meeting, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which date shall not be more than 10 days after the date upon which the resolution fixing the record date is adopted by the Board of Directors. Any stockholder of record seeking to have the stockholders authorize or take corporate action by written consent shall, by written notice to the Secretary, request the Board of Directors to fix a record date. The Board of Directors shall promptly, but in all events within 10 days after the date on which such a request is received, adopt a resolution fixing the record date. If no record date has been fixed by the Board of Directors within 10 days of the date on which such a request is received, the record date for determining stockholders entitled to consent to corporate action in writing without a meeting, when no prior action by the Board of Directors is required by applicable law, shall be the first date on which a signed written consent setting forth the action taken or proposed to be taken is delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an

officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to the corporation's registered office shall be by hand or by certified or registered mail, return receipt requested. If no record date has been fixed by the Board of Directors and prior action by the Board of Directors is required by law, the record date for determining stockholders entitled to consent to corporate action in writing without a meeting shall be at the close of business on the day on which the Board of Directors adopts the resolution taking such prior action.

(c) In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than 60 days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

**Section 39. Registered Stockholders.** The corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, and to vote as such owner, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

## ARTICLE VIII

### OTHER SECURITIES OF THE CORPORATION

**Section 40. Execution of Other Securities.** All bonds, debentures and other corporate securities of the corporation, other than stock certificates (covered in Section 34 of these Bylaws), may be signed by the Chairman of the Board of Directors, the Chief Executive Officer, the President or any Vice President, or such other person as may be authorized by the Board of Directors, and the corporate seal impressed thereon or a facsimile of such seal imprinted thereon and attested by the signature of the Secretary or an Assistant Secretary, or the Chief Financial Officer or Treasurer or an Assistant Treasurer; *provided, however,* that where any such bond, debenture or other corporate security shall be authenticated by the manual signature, or where permissible facsimile signature, of a trustee under an indenture pursuant to which such bond, debenture or other corporate security shall be issued, the signatures of the persons signing and attesting the corporate seal on such bond, debenture or other corporate security may be the imprinted facsimile of the signatures of such persons. Interest coupons appertaining to any such bond, debenture or other corporate security, authenticated by a trustee as aforesaid, shall be signed by the Treasurer or an Assistant Treasurer of the corporation or such other person as may be authorized by the Board of Directors, or bear imprinted thereon the facsimile signature of such person. In case any officer who shall have signed or attested any bond, debenture or other corporate security, or whose facsimile signature shall appear thereon or on any such interest coupon, shall have ceased to be such officer before the bond, debenture or other corporate security so signed or attested shall have been delivered, such bond, debenture or other corporate security nevertheless may be adopted by the corporation and issued and delivered as though the person who signed the same or whose facsimile signature shall have been used thereon had not ceased to be such officer of the corporation.

## ARTICLE IX

### DIVIDENDS

**Section 41. Declaration of Dividends.** Dividends upon the capital stock of the corporation, subject to the provisions of the Certificate of Incorporation and applicable law, if any, may be declared by the Board of Directors pursuant to law at any regular or special meeting. Dividends may be paid in cash, in property, or in shares of the capital stock, subject to the provisions of the Certificate of Incorporation and applicable law.

**Section 42. Dividend Reserve.** Before payment of any dividend, there may be set aside out of any funds of the corporation available for dividends such sum or sums as the Board of Directors from time to time, in their absolute discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the corporation, or for such other purpose as the Board of Directors shall think conducive to the interests of the corporation, and the Board of Directors may modify or abolish any such reserve in the manner in which it was created.

## ARTICLE X

### FISCAL YEAR

**Section 43. Fiscal Year.** The fiscal year of the corporation shall be fixed by resolution of the Board of Directors.

## ARTICLE XI

### INDEMNIFICATION

**Section 44. Indemnification of Directors, Executive Officers, Other Officers, Employees and Other Agents.**

**(a) Directors and Executive Officers.** The corporation shall indemnify its directors and executive officers (for the purposes of this Article, "executive officers" shall have the meaning defined in Rule 3b-7 promulgated under the 1934 Act) to the fullest extent not prohibited by the DGCL or any other applicable law; *provided, however*, that the corporation may modify the extent of such indemnification by individual contracts with its directors and executive officers; and, *provided, further*, that the corporation shall not be required to indemnify any director or executive officer in connection with any proceeding (or part thereof) initiated by such person unless (i) such indemnification is expressly required to be made by law, (ii) the proceeding was authorized by the Board of Directors of the corporation, (iii) such indemnification is provided by the corporation, in its sole discretion, pursuant to the powers vested in the corporation under the DGCL or any other applicable law or (iv) such indemnification is required to be made under paragraph (d) of this Section.

**(b) Other Officers, Employees and Other Agents.** The corporation shall have power to indemnify its other officers, employees and other agents as set forth in the DGCL or any other applicable law. The Board of Directors shall have the power to delegate the determination of whether indemnification shall be given to any such person except executive officers to such officers or other persons as the Board of Directors shall determine.

**(c) Expenses.** The corporation shall advance to any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such person is or was a director or executive officer of the corporation, or is or was serving at the request of the corporation as a director or executive officer of another corporation, partnership, joint venture, trust or other enterprise, prior to the final disposition of the proceeding, promptly following request therefor, all expenses incurred by any



director or executive officer in connection with such proceeding, *provided, however*, that, if the DGCL requires, an advancement of expenses incurred by a director or officer in his or her capacity as a director or officer (and not in any other capacity in which service was or is rendered by such indemnitee, including, without limitation, service to an employee benefit plan) shall be made only upon delivery to the corporation of an undertaking, by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal that such indemnitee is not entitled to be indemnified for such expenses under this Section or otherwise.

Notwithstanding the foregoing, unless otherwise determined pursuant to paragraph (e) of this Section, no advance shall be made by the corporation to an executive officer of the corporation (except by reason of the fact that such executive officer is or was a director of the corporation, in which event this paragraph shall not apply) in any action, suit or proceeding, whether civil, criminal, administrative or investigative, if a determination is reasonably and promptly made (i) by a majority vote of a quorum consisting of directors who were not parties to the proceeding, even if not a quorum, or (ii) by a committee of such directors designated by a majority of such directors, even though less than a quorum, or (iii) if there are no such directors, or such directors so direct, by independent legal counsel in a written opinion, that the facts known to the decision-making party at the time such determination is made demonstrate clearly and convincingly that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation.

**(d) Enforcement.** Without the necessity of entering into an express contract, all rights to indemnification and advances to directors and executive officers under this Section shall be deemed to be contractual rights and be effective to the same extent and as if provided for in a contract between the corporation and the director or executive officer. Any right to indemnification or advances granted by this Section to a director or executive officer shall be enforceable by or on behalf of the person holding such right in any court of competent jurisdiction if (i) the claim for indemnification or advances is denied, in whole or in part, or (ii) no disposition of such claim is made within 90 days of request therefor. The claimant in such enforcement action, if successful in whole or in part, shall be entitled to be paid also the expense of prosecuting the claim. In connection with any claim for indemnification, the corporation shall be entitled to raise as a defense to any such action that the claimant has not met the standards of conduct that make it permissible under the DGCL or any other applicable law for the corporation to indemnify the claimant for the amount claimed. In connection with any claim by an executive officer of the corporation (except in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such executive officer is or was a director of the corporation) for advances, the corporation shall be entitled to raise as a defense as to any such action clear and convincing evidence that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation, or with respect to any criminal action or proceeding that such person acted without reasonable cause to believe that his or her conduct was lawful. Neither the failure of the corporation (including its Board of Directors, independent legal counsel or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because he has met the applicable standard of conduct set forth in the DGCL or any other applicable law, nor an actual determination by the corporation (including its Board of Directors, independent legal counsel or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that claimant has not met the applicable standard of conduct.

**(e) Non-Exclusivity of Rights.** The rights conferred on any person by this Section shall not be exclusive of any other right that such person may have or hereafter acquire under any applicable statute, provision of the Certificate of Incorporation, Bylaws, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his or her official capacity and as to action in another capacity while holding office. The corporation is specifically authorized to enter into individual contracts

with any or all of its directors, officers, employees or agents respecting indemnification and advances, to the fullest extent not prohibited by the DGCL or any other applicable law.

**(f) Survival of Rights.** The rights conferred on any person by this Section shall continue as to a person who has ceased to be a director or executive officer and shall inure to the benefit of the heirs, executors and administrators of such a person.

**(g) Insurance.** To the fullest extent permitted by the DGCL, or any other applicable law, the corporation, upon approval by the Board of Directors, may purchase insurance on behalf of any person required or permitted to be indemnified pursuant to this Section.

**(h) Amendments.** Any repeal or modification of this Section shall only be prospective and shall not affect the rights under this Bylaw in effect at the time of the alleged occurrence of any action or omission to act that is the cause of any proceeding against any agent of the corporation.

**(i) Saving Clause.** If this Section or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the corporation shall nevertheless indemnify each director and executive officer to the full extent not prohibited by any applicable portion of this Bylaw that shall not have been invalidated, or by any other applicable law. If this Section shall be invalid due to the application of the indemnification provisions of another jurisdiction, then the corporation shall indemnify each director and executive officer to the full extent under applicable law.

**(j) Certain Definitions.** For the purposes of this Section, the following definitions shall apply:

**(1)** The term “proceeding” shall be broadly construed and shall include, without limitation, the investigation, preparation, prosecution, defense, settlement, arbitration and appeal of, and the giving of testimony in, any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative.

**(2)** The term “expenses” shall be broadly construed and shall include, without limitation, court costs, attorneys’ fees, witness fees, fines, amounts paid in settlement or judgment and any other costs and expenses of any nature or kind incurred in connection with any proceeding.

**(3)** The term the “corporation” shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger that, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Section with respect to the resulting or surviving corporation as he would have with respect to such constituent corporation if its separate existence had continued.

**(4)** References to a “director,” “executive officer,” “officer,” “employee,” or “agent” of the corporation shall include, without limitation, situations where such person is serving at the request of the corporation as, respectively, a director, executive officer, officer, employee, trustee or agent of another corporation, partnership, joint venture, trust or other enterprise.

**(5)** References to “other enterprises” shall include employee benefit plans; references to “fines” shall include any excise taxes assessed on a person with respect to an employee benefit

plan; and references to “serving at the request of the corporation” shall include any service as a director, officer, employee or agent of the corporation that imposes duties on, or involves services by, such director, officer, employee, or agent with respect to an employee benefit plan, its participants, or beneficiaries; and a person who acted in good faith and in a manner he reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner “not opposed to the best interests of the corporation” as referred to in this Section.

## ARTICLE XII

### NOTICES

#### Section 45. Notices.

**(a) Notice to Stockholders.** Written notice to stockholders of stockholder meetings shall be given as provided in Section 7 of these Bylaws. Without limiting the manner by which notice may otherwise be given effectively to stockholders under any agreement or contract with such stockholder, and except as otherwise required by law, written notice to stockholders for purposes other than stockholder meetings may be sent by United States mail or nationally recognized overnight courier, or by facsimile, telegraph or telex or by electronic mail or other electronic means.

**(b) Notice to Directors.** Any notice required to be given to any director may be given by the method stated in paragraph (a) of this Section, or as provided for in Section 21 of these Bylaws. If such notice is not delivered personally, it shall be sent to such address as such director shall have filed in writing with the Secretary, or, in the absence of such filing, to the last known post office address of such director.

**(c) Affidavit of Mailing.** An affidavit of mailing, executed by a duly authorized and competent employee of the corporation or its transfer agent appointed with respect to the class of stock affected or other agent, specifying the name and address or the names and addresses of the stockholder or stockholders, or director or directors, to whom any such notice or notices was or were given, and the time and method of giving the same, shall in the absence of fraud, be prima facie evidence of the facts therein contained.

**(d) Methods of Notice.** It shall not be necessary that the same method of giving notice be employed in respect of all recipients of notice, but one permissible method may be employed in respect of any one or more, and any other permissible method or methods may be employed in respect of any other or others.

**(e) Notice to Person with Whom Communication Is Unlawful.** Whenever notice is required to be given, under any provision of law or of the Certificate of Incorporation or Bylaws of the corporation, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting that shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under any provision of the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

**(f) Notice to Stockholders Sharing an Address.** Except as otherwise prohibited under DGCL, any notice given under the provisions of DGCL, the Certificate of Incorporation or the

Bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Such consent shall have been deemed to have been given if such stockholder fails to object in writing to the corporation within 60 days of having been given notice by the corporation of its intention to send the single notice. Any consent shall be revocable by the stockholder by written notice to the corporation.

### ARTICLE XIII

#### AMENDMENTS

**Section 46. Amendments.** The Board of Directors is expressly empowered to adopt, amend or repeal Bylaws of the corporation. The stockholders shall also have power to adopt, amend or repeal the Bylaws of the corporation; *provided, however*, that, in addition to any vote of the holders of any class or series of stock of the corporation required by law or by the Certificate of Incorporation, such action by stockholders shall require the affirmative vote of the holders of a majority of the voting power of all of the then-outstanding shares of the capital stock of the corporation entitled to vote generally in the election of directors, voting together as a single class.

### ARTICLE XIV

#### LOANS TO OFFICERS

**Section 47. Loans to Officers.** Except as otherwise prohibited under applicable law, the corporation may lend money to, or guarantee any obligation of, or otherwise assist any officer or other employee of the corporation or of its subsidiaries, including any officer or employee who is a Director of the corporation or its subsidiaries, whenever, in the judgment of the Board of Directors, such loan, guarantee or assistance may reasonably be expected to benefit the corporation. The loan, guarantee or other assistance may be with or without interest and may be unsecured, or secured in such manner as the Board of Directors shall approve, including, without limitation, a pledge of shares of stock of the corporation. Nothing in these Bylaws shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the corporation at common law or under any statute.

### ARTICLE XV

#### MISCELLANEOUS

#### **Section 48. Annual Report.**

(a) Subject to the provisions of paragraph (b) of this Section, the Board of Directors shall cause an annual report to be sent to each stockholder of the corporation not later than 120 days after the close of the corporation's fiscal year. Such report shall include a balance sheet as of the end of such fiscal year and an income statement and statement of changes in financial position for such fiscal year, accompanied by any report thereon of independent accountants or, if there is no such report, the certificate of an authorized officer of the corporation that such statements were prepared without audit from the books and records of the corporation. When there are more than 100 stockholders of record of the corporation's shares, as determined by Section 605 of the CGCL, additional information as required by Section 1501(b) of the CGCL shall also be contained in such report, provided that if the corporation has a class of securities registered under Section 12 of the 1934 Act, the 1934 Act shall take precedence. Such report shall be sent to stockholders at least 15 days prior to the next annual meeting of stockholders after the end of the fiscal year to which it relates.

(b) If and so long as there are fewer than 100 holders of record of the corporation's shares, the requirement of sending of an annual report to the stockholders of the corporation is hereby expressly waived.

**Section 49. Forum.** Unless the corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the corporation; (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the corporation to the corporation or the corporation's stockholders; (iii) any action asserting a claim against the corporation or any director or officer or other employee of the corporation arising pursuant to any provision of the DGCL, the certificate of incorporation or the Bylaws of the corporation; or (iv) any action asserting a claim against the corporation or any director or officer or other employee of the corporation governed by the internal affairs doctrine.

THIS WARRANT AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS WARRANT HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"). THESE SECURITIES ARE SUBJECT TO RESTRICTIONS ON TRANSFERABILITY AND RESALE AND MAY NOT BE TRANSFERRED OR RESOLD EXCEPT AS PERMITTED UNDER THE ACT PURSUANT TO REGISTRATION OR EXEMPTION THEREFROM.

THE SALE OF THE SECURITIES WHICH ARE THE SUBJECT OF THIS WARRANT HAS NOT BEEN QUALIFIED WITH THE COMMISSIONER OF CORPORATIONS OF THE STATE OF CALIFORNIA OR ANY OTHER STATE AND THE ISSUANCE OF SUCH SECURITIES OR THE PAYMENT OR RECEIPT OF ANY PART OF THE CONSIDERATION FOR SUCH SECURITIES PRIOR TO SUCH QUALIFICATION IS UNLAWFUL, UNLESS THE SALE OF SUCH SECURITIES IS EXEMPT FROM QUALIFICATION BY SECTION 2511, 25102 OR 25105 OF THE CALIFORNIA CORPORATIONS CODE OR SUCH PROVISIONS OF THE CORPORATIONS CODE OF ANY SUCH OTHER STATE. THE RIGHTS OF THE HOLDER OF THIS WARRANT ARE EXPRESSLY CONDITIONED UPON SUCH QUALIFICATION BEING OBTAINED, UNLESS THE SALE IS SO EXEMPT.

Void after May 7, 2029

**PHATHOM PHARMACEUTICALS, INC.**

**WARRANT  
TO PURCHASE SHARES OF COMMON STOCK**

THIS CERTIFIES THAT, for value received, **Takeda Pharmaceutical Company Limited**, together with its permitted successors and assigns ("**Holder**") is entitled, subject to the terms set forth below, to subscribe for and purchase shares of common stock, par value \$0.0001 per share (the "**Common Stock**") of **PHATHOM PHARMACEUTICALS, INC.**, a Delaware corporation (the "**Company**"), subject to adjustment as provided herein. This warrant and any warrant subsequently issued upon exchange or transfer hereof are hereinafter referred to collectively as the "**Warrant**."

This Warrant is subject to the following terms and conditions:

1. **License Agreement.** This Warrant is issued in connection with that certain License Agreement dated as of May 7, 2019 by and between Recipient and the Company.

2. **Exercise of Warrant.** The terms and conditions upon which this Warrant may be exercised, and the shares covered hereby may be purchased, are as follows:

2.1 **Term.** Subject to the terms hereof and unless sooner terminated as provided below in Section 6.2, this Warrant may be exercised at any time after the date hereof, or from time to time, in whole or in part; provided, however, that in no event may this Warrant be exercised later than 5:00 p.m. (Pacific Time) on the close of business on May 7, 2029 (the "**Exercise Period**")

2.2 **Number of Common Stock Shares.** This Warrant may be exercised for Three Million Five Hundred Thousand (3,500,000) shares of Common Stock, subject to adjustment as provided herein.

2.3 **Exercise Price.** The "**Exercise Price**" shall be \$0.0001 per share, subject to adjustment as provided herein.

2.4 **Exercise Mechanics.** This Warrant shall only be exercisable (a) in connection with a consolidation or merger of the Company with or into another corporation (other than a merger solely to effect a reincorporation of the Company into another state), the sale or other disposition of all or substantially all the properties and assets of the Company in its entirety to any other person, or any other

sale or change in voting control of the Company by equity transfer or otherwise (collectively, a “**Change of Control**”), or (b) upon the consummation of, or at any time following the consummation of, an initial public offering of shares of the Company’s Common Stock (an “**IPO**”). Subject to the terms and conditions contained herein and while this Warrant remains outstanding and is exercisable, this Warrant is exercisable with respect to any or all of the shares of Common Stock, at the option of Holder, upon surrender of this Warrant to the Company together with either (x) a duly completed Notice of Exercise, in the form attached hereto as Exhibit A, payment of an amount equal to the Exercise Price multiplied by the number of shares of Common Stock with respect to which this Warrant is being exercised as provided in Section 2.5 below, or (y) a Net Issue Election Notice, in the form attached hereto as Exhibit B. If Holder exercises this Warrant with respect to less than all of the shares of Common Stock represented by this Warrant, the Company shall cancel this Warrant upon the surrender thereof and shall execute and deliver to Holder a new Warrant for the balance of such shares of Common Stock.

2.5 Payment. Payment of the Exercise Price for the shares of Common Stock with respect to which this Warrant is being exercised by Holder shall be made, at the option of Holder, (a) by delivery of cash payable by wire transfer of immediately available funds, (b) by the delivery of a cashier’s check or certified check, (c) by net issue election as set forth in Section 2.6 below, or (d) by any combination of (a) – (c).

2.6 Net Issue Election. Holder may elect to receive, without payment by Holder of any additional consideration, shares of Common Stock equal to the value of the “spread” on the shares of Common Stock or any portion thereof by the surrender of the Warrant to the Company, together with a duly completed Net Issue Election Notice, in the form attached hereto as Exhibit B, at the principal office of the Company, in which event the Company shall issue to Holder such number of shares of Common Stock as is computed using the following formula, rounded down to the nearest whole share:

$$X = \frac{Y(A - B)}{A}$$

Where:

X =	The number of shares of Common Stock to be issued to Holder pursuant to the net issue election;
Y =	The number of shares of Common Stock in respect of which the net issue election is made;
A =	The fair market value (as determined below) of one share of Common Stock at the time the net issue election is made; and
B =	The Exercise Price in effect under this Warrant as of the date of the net issue election.

For purposes of this Section 2.6, the fair market value of one share of Common Stock as of a particular date shall be as determined in good faith by the Board of Directors of the Company; provided that in connection with an IPO (including pursuant to Section 6.3 below), the fair market value shall equal the actual price to the public of the Common Stock sold in the IPO regardless of the subsequent trading price of the Common Stock after the initial pricing of the IPO.

3. Adjustment of Exercise Price and Number of Shares. The Exercise Price and the number of shares of Common Stock purchasable upon the exercise of this Warrant shall be subject to adjustment from time to time upon the happening of certain events as follows:

3.1 Split, Subdivision or Combination. If the Company should at any time or from time to time fix a record date for (a) the effectuation of a split or subdivision of the outstanding shares of Common Stock or (b) the determination of the holders of Common Stock entitled to receive a dividend or other distribution payable in additional shares of Common Stock or other securities or rights convertible into, or entitling the holder thereof to receive directly or indirectly, additional shares of Common Stock (hereinafter referred to as the “**Common Stock Equivalents**”), without payment of any consideration by such holder for the additional shares of Common Stock or Common Stock Equivalents, then, as of such record date (or the date of such distribution, split or subdivision if no record date is fixed), the Exercise Price shall be appropriately decreased and the number of shares of Common Stock which this Warrant is exercisable for, if any, shall be appropriately increased in proportion to such increase of outstanding shares. Notwithstanding the foregoing, in any such case, the aggregate purchase price payable by Holder for the total number of shares of Common Stock (as adjusted) shall remain the same.

3.2 Combination of Shares. If the number of shares of Common Stock outstanding at any time after the date hereof is decreased by a combination of the outstanding shares of Common Stock, the Exercise Price shall be appropriately increased and the number of shares of Common Stock for which this Warrant is exercisable, if any, shall be appropriately decreased in proportion to such decrease in outstanding shares. Notwithstanding the foregoing, in any such case, the aggregate purchase price payable by Holder for the total number of shares of Common Stock (as adjusted) shall remain the same.

3.3 Reclassification or Reorganization. If the shares of Common Stock shall be changed into the same or different number of shares of any class or classes of stock, whether by capital reorganization, reclassification or otherwise (other than a subdivision, conversion or combination of shares or stock dividend provided for in Sections 3.1 and 3.2 above), then and in each such event Holder shall be entitled to receive upon the exercise of this Warrant the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification or other change, to which a holder of the number of shares of Common Stock (or any shares of stock or other securities which may be) issuable upon the exercise of this Warrant would have received if this Warrant had been exercised immediately prior to such reorganization, reclassification or other change, all subject to further adjustment as provided herein. At the request of Holder, this Warrant will thereupon be cancelled and upon its surrender to the Company, the Company will execute and deliver at its expense a new Warrant reflecting the foregoing adjustment, but otherwise identical to the replaced Warrant.

3.4 Notice of Adjustments and Record Dates. The Company shall promptly notify Holder in writing of each adjustment or readjustment of the Exercise Price hereunder and the number of shares of Common Stock issuable upon the exercise of this Warrant. Such notice shall state the adjustment or readjustment and show in reasonable detail the facts on which that adjustment or readjustment is based. In the event of any taking by the Company of a record of holders of shares of Common Stock for the purpose of determining holders thereof who are entitled to receive any dividend or other distribution, the Company shall notify Holder in writing of such record date at least ten (10) days prior to the date specified therein.

3.5 Fractional Shares. No fractional shares shall be issued upon the exercise of this Warrant as a consequence of any adjustment pursuant hereto. All shares of Common Stock (including fractions) issuable upon exercise of this Warrant may be aggregated for purposes of determining whether the exercise would result in the issuance of a fractional share. If, after aggregation, the exercise would result in the issuance of a fractional share, the Company shall, in lieu of issuance of any fractional share, pay Holder otherwise entitled to such fraction a sum in cash equal to the product resulting from multiplying the then current fair market value of a share of Common Stock (as determined in good faith by the Board of Directors of the Company) by such fraction.



3.6 Issue Tax. The issuance of certificates for the shares of Common Stock upon exercise of this Warrant shall be made without charge to Holder for any issuance tax in respect thereof provided that the Company shall not be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of any certificate in a name other than that of Holder.

3.7 No Impairment. The Company shall not avoid or seek to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Company, but shall at all times in good faith assist in the carrying out of all the provisions of this Warrant. Without limiting the generality of the foregoing, the Company shall take all such action as may be necessary or appropriate in order that all shares of Common Stock as may be issued pursuant to the exercise of this Warrant shall, upon issuance, be duly and validly issued, fully paid and nonassessable and free from all taxes, liens and charges with respect to the issue thereof.

4. Replacement of Warrants. On receipt by the Company of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of any such loss, theft, destruction or mutilation of this Warrant, on delivery of an indemnity agreement reasonably satisfactory in form and amount to the Company or, in the case of any such mutilation, on surrender and cancellation of such Warrant, the Company at its expense shall execute and deliver to Holder, in lieu thereof, a new Warrant of like tenor.

5. No Rights or Liability as a Stockholder. This Warrant does not entitle Holder to any voting rights or other rights as a stockholder of the Company. No provisions hereof, in the absence of affirmative action by Holder to purchase shares of Common Stock, and no enumeration herein of the rights or privileges of Holder, shall give rise to any liability of Holder as a shareholder of the Company.

6. Miscellaneous.

6.1 Limitations on Disposition. Holder agrees not to make any disposition of this Warrant or any shares of Common Stock issued upon exercise of this Warrant, unless and until (i) the transferee has agreed in writing for the benefit of the Company to be bound by this Section 6.1 and the other provisions of this Warrant as if such transferee were the original Holder hereof, provided and to the extent such provisions are then applicable, and (ii) such transfer is in compliance with all applicable securities laws.

6.2 Early Termination. In the event of, at any time during the Exercise Period, the Company proposes to conduct a Change of Control, the Company shall provide to Holder ten (10) days advance written notice prior to the closing of such Change of Control and this Warrant shall terminate (subject to the provisions of Section 6.3) unless exercised prior to the occurrence of such Change of Control.

6.3 Automatic Conversion upon Expiration or Termination. In the event that, at the end of the Exercise Period or earlier termination of this Warrant pursuant to Section 6.2, the fair market value (as determined in good faith by the Board of Directors of the Company) of one share of Common Stock for which this Warrant is exercisable (or other security issuable upon the exercise hereof) is greater than the Exercise Price in effect on such date, then this Warrant shall automatically be deemed on and as of such date to be converted pursuant to Section 2.6 above as to all shares of Common Stock (or such other securities) for which it shall not previously have been exercised or converted, and the Company shall promptly deliver a certificate representing the shares of Common Stock (or such other securities) issued upon such conversion to the Holder.

6.4 Titles and Subtitles. The titles and subtitles used in this Warrant are for convenience only and are not to be considered in construing or interpreting this Warrant.

6.5 Notices. All notices and other communications under this Warrant shall be in writing and shall be deemed given upon receipt if delivered personally, or when sent if mailed by registered or certified mail (return receipt requested) or by reputable overnight express courier (charges prepaid) to the party to be notified at the address indicated for such party on the signature page hereof, or at such other address as such party may designate by advance written notice to the other parties.

6.6 Attorneys' Fees. If any action at law or in equity is necessary to enforce or interpret the terms of this Warrant, the prevailing party shall be entitled to reasonable attorneys' fees, costs and disbursements in addition to any other relief to which such party may be entitled.

6.7 Amendments and Waivers. This Warrant may be amended and the observance of any other term of this Warrant may be waived (either generally or in a particular instance and either retroactively or prospectively), with the written consent of the Company and Holder. Any amendment or waiver effected in accordance with this Section 6.7 shall be binding upon Holder of this Warrant (and of any shares of Common Stock into which this Warrant is exercisable), and each future holder of all such securities and the Company.

6.8 Severability. If one or more provisions of this Warrant are held to be unenforceable under applicable law, such provision shall be excluded from this Warrant and the balance of the Warrant shall be interpreted as if such provision were so excluded and shall be enforceable in accordance with its terms.

6.9 Governing Law. This Warrant shall be governed by and construed and enforced in accordance with the laws of the State of Delaware, without giving effect to its conflicts of laws principles.

[SIGNATURE PAGE FOLLOWS]

This Warrant may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

Date: May 7, 2019

PHATHOM PHARMACEUTICALS, INC.,  
a Delaware corporation

By: /s/ David Socks  
Name: David Socks  
Title: Chief Executive Officer

ACKNOWLEDGED AND AGREED:

**HOLDER:**

TAKEDA PHARMACEUTICAL COMPANY LIMITED

By: /s/ Fumihiko Sato  
Name: Fumihiko Sato  
Title: Head of Portfolio Strategic Relations

[SIGNATURE PAGE TO WARRANT TO PURCHASE  
SHARES OF COMMON STOCK]

EXHIBIT A

FORM OF NOTICE OF EXERCISE

The undersigned, the holder of the within Warrant, hereby irrevocably elects to exercise this Warrant for, and to purchase thereunder, \_\_\_\_\_ shares of Common Stock (as defined in the attached Warrant)\* of **PHATHOM PHARMACEUTICALS, INC.**, a Delaware corporation and herewith makes payment of \$\_\_\_\_\_ therefor and requests that the certificates for such shares be issued in the name of, and delivered to, \_\_\_\_\_, federal taxpayer identification number \_\_\_\_\_, whose address is \_\_\_\_\_.

In exercising this Warrant, the undersigned hereby confirms and acknowledges that the \_\_\_\_\_ shares of Common Stock (as defined in the attached Warrant) are being acquired solely for the account of the undersigned and not as a nominee for any other party, and for investment, and the undersigned will not offer, sell or otherwise dispose of any such shares of Common Stock except under circumstances that will not result in a violation of the Securities Act of 1933, as amended, or any state securities laws.

Please issue a new Warrant for the unexercised portion of the attached Warrant in the name of, and delivered to, \_\_\_\_\_, federal taxpayer identification number \_\_\_\_\_, whose address is \_\_\_\_\_.

Dated: \_\_\_\_\_

\_\_\_\_\_  
(Signature must conform to name of holder as specified on the face of the Warrant)

\* Insert here the number of shares as to which the Warrant is being exercised.

EXHIBIT B

FORM OF NET ISSUE ELECTION NOTICE

(To be signed only on net issue exercise of the Warrant)

The undersigned, the holder of the within Warrant, hereby irrevocably elects to exercise this Warrant with respect to \_\_\_\_\_ shares of Common Stock (as defined in the attached Warrant) of **PHATHOM PHARMACEUTICALS, INC.**, a Delaware corporation, pursuant to the net issue election provisions set forth in Section 2.6 of the Warrant and requests that the certificates for the number of shares of Common Stock issuable pursuant to said Section 2.6 after application of the net issue election formula to such shares of Common Stock be issued in the name of, and delivered to, \_\_\_\_\_, federal taxpayer identification number \_\_\_\_\_, whose address is \_\_\_\_\_.

In exercising this Warrant, the undersigned hereby confirms and acknowledges that the shares of Common Stock are being acquired solely for the account of the undersigned and not as a nominee for any other party, and for investment, and the undersigned will not offer, sell or otherwise dispose of any such shares of Common Stock except under circumstances that will not result in a violation of the Securities Act of 1933, as amended, or any state securities laws.

Please issue a new Warrant for the unexercised portion of the attached Warrant in the name of, and delivered to, \_\_\_\_\_, federal taxpayer identification number \_\_\_\_\_, whose address is \_\_\_\_\_.

Dated: \_\_\_\_\_

\_\_\_\_\_  
(Signature must conform to name of holder as specified on the face of the Warrant)

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE “**ACT**”), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN SECTIONS 5.3 AND 5.4 BELOW, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR, IN THE OPINION OF LEGAL COUNSEL IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

### WARRANT TO PURCHASE STOCK

**Company:** Phathom Pharmaceuticals, Inc., a Delaware corporation

**Number of Shares:** As set forth in Paragraph A below

**Type/Series of Stock:** As set forth in Paragraph A below

**Warrant Price:** As set forth in Paragraph A below

**Issue Date:** May 14, 2019

**Expiration Date:** As set forth in Section 5.1(a) below.

**Credit Facility:** This Warrant to Purchase Stock (“**Warrant**”) is issued in connection with that certain Loan and Security Agreement of even date herewith among Silicon Valley Bank, WestRiver Innovation Lending Fund VIII, L.P. and the Company (as amended and/or modified and in effect from time to time, the “**Loan Agreement**”).

THIS WARRANT CERTIFIES THAT, for good and valuable consideration, SILICON VALLEY BANK (together with any successor or permitted assignee or transferee of this Warrant or of any shares issued upon exercise hereof, “**Holder**”) is entitled to purchase up to the number of fully paid and non-assessable shares of the above-stated Type/Series of Stock (the “**Class**”) of the above-named company (the “**Company**”) determined pursuant to Paragraph A below, at a purchase price per share equal to the Warrant Price (as defined below), all as set forth above and as adjusted pursuant to Section 2 of this Warrant, subject to the provisions and upon the terms and conditions set forth in this Warrant. Reference is made to Section 5.4 of this Warrant whereby Silicon Valley Bank shall transfer this Warrant to its parent company, SVB Financial Group.

A. Number of Shares; Warrant Price; Class.

(1) Number of Shares. Upon the making (if any) of each Term B Loan Advance (as defined in the Loan Agreement), this Warrant automatically shall become exercisable for such number of shares of the Class (cumulatively and collectively, and as may be adjusted from time to time in accordance with the provisions of this Warrant, the “**Shares**”) as shall equal (a)(i) 0.01, multiplied by (ii) the amount of such Term B Loan Advance, divided by (b) the Warrant Price in effect on and as of the date of such Term B Loan Advance, subject to adjustment thereafter from time to time in accordance with the provisions of this Warrant.

(2) Warrant Price. The purchase price per Share hereunder (the “**Warrant Price**”) shall equal the Note Conversion Price (as defined below), subject to adjustment from time to time in accordance with the provisions of this Warrant.

(3) Certain Definitions. As used herein, the following capitalized terms have the respective meanings given below:

“Class” means Qualified Financing Securities.

“Note Conversion Price” means the “Conversion Price” (as defined in the Note Purchase Agreement) at which the Notes convert into shares or units of Qualified Financing Securities, or otherwise for which shares or units of Qualified Financing Securities are issued by the Company in exchange for, or in satisfaction of its obligations under, the Notes in the Qualified Financing.

“Note Purchase Agreement” means that certain Note Purchase Agreement of the Company dated May 7, 2019 among the Company and the several purchasers named therein, as amended and/or restated and in effect from time to time.

“Notes” means those certain convertible promissory notes of the Company issued from time to time under and pursuant to the Note Purchase Agreement, as any or all of such notes may be amended and/or restated and in effect from time to time, together with any convertible promissory notes of the Company issued in exchange for, or replacement or substitution of, such notes.

“Qualified Financing” means the first to occur of (a) a “Next Equity Financing,” (b) a “Non-Qualified Next Equity Financing” or (c) an “Initial Public Offering” (each as defined in the Note Purchase Agreement), in each case in which the Notes convert into, or are otherwise exchanged for or satisfied by the Company’s issuance of, Qualified Financing Securities.

“Qualified Financing Securities” means the class and/or series and/or other designation of Company capital stock and/or other equity securities sold and issued by the Company in the Qualified Financing.

#### SECTION 1. EXERCISE.

1.1 Method of Exercise. Holder may at any time and from time to time on or after the first date (if any) on which a Term B Loan Advance shall be made to the Company and on or before the Expiration Date, exercise this Warrant, in whole or in part, by delivering to the Company the original of this Warrant together with a duly executed Notice of Exercise in substantially the form attached hereto as Appendix 1 and, unless Holder is exercising this Warrant pursuant to a cashless exercise set forth in Section 1.2, a check, wire transfer of same-day funds (to an account designated by the Company), or other form of payment acceptable to the Company for the aggregate Warrant Price for the Shares being purchased.

1.2 Cashless Exercise. On any exercise of this Warrant, in lieu of payment of the aggregate Warrant Price in the manner as specified in Section 1.1 above, but otherwise in accordance with the requirements of Section 1.1, Holder may elect to receive Shares equal to the value of this Warrant, or portion hereof as to which this Warrant is being exercised. Thereupon, the Company shall issue to the Holder such number of fully paid and non-assessable Shares as are computed using the following formula:

$$X = Y(A-B)/A$$

where:

X = the number of Shares to be issued to the Holder;

Y = the number of Shares with respect to which this Warrant is being exercised (inclusive of the Shares surrendered to the Company in payment of the aggregate Warrant Price);

A = the fair market value (as determined pursuant to Section 1.3 below) of one Share; and

B = the Warrant Price.

1.3 Fair Market Value. If the Company's common stock is then traded or quoted on a nationally recognized securities exchange, inter-dealer quotation system or over-the-counter market (a "Trading Market") and the Class is common stock, the fair market value of a Share shall be the closing price or last sale price of a share of common stock reported for the Business Day immediately before the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company. If the Company's common stock is then traded in a Trading Market and the Class is a series of the Company's convertible preferred stock, the fair market value of a Share shall be the closing price or last sale price of a share of the Company's common stock reported for the Business Day immediately before the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company multiplied by the number of shares of the Company's common stock into which a Share is then convertible. If the Company's common stock is not traded in a Trading Market, the Board of Directors of the Company shall determine the fair market value of a Share in its reasonable good faith judgment.

1.4 Delivery of Book Entry Statement or Certificate and New Warrant. Within a reasonable time after Holder exercises this Warrant in the manner set forth in Section 1.1 or 1.2 above, the Company or its transfer agent shall deliver to Holder a book entry statement or certificate representing the Shares issued to Holder upon such exercise and, if this Warrant has not been fully exercised and has not expired, a new warrant of like tenor representing the Shares not so acquired.

1.5 Replacement of Warrant. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form, substance and amount to the Company or, in the case of mutilation, on surrender of this Warrant to the Company for cancellation, the Company shall, within a reasonable time, execute and deliver to Holder, in lieu of this Warrant, a new warrant of like tenor and amount.

1.6 Treatment of Warrant Upon Acquisition of Company.

(a) Acquisition. For the purpose of this Warrant, "Acquisition" means any transaction or series of related transactions involving: (i) the sale, lease, exclusive license, or other disposition of all or substantially all of the assets of the Company; (ii) any merger or consolidation of the Company into or with another person or entity (other than a merger or consolidation effected exclusively to change the Company's domicile), or any other corporate reorganization, in which the stockholders of the Company in their capacity as such immediately prior to such merger, consolidation or reorganization, own less than a majority of the Company's (or the surviving or successor entity's) outstanding voting power immediately after such merger, consolidation or reorganization); (iii) any merger or consolidation of the Company into or with another person or entity, or any other corporate reorganization, in which (A) the stockholders of the Company in their capacity as such immediately prior to such merger, consolidation or



reorganization, own a majority of the outstanding voting power of the surviving or successor entity as of immediately after such merger, consolidation or reorganization, and (B) such surviving or successor entity is not the Company; or (iv) any sale or other transfer by the stockholders of the Company of shares representing at least a majority of the Company's then-total outstanding combined voting power. For the avoidance of doubt, "Acquisition" shall not include any sale and issuance by the Company of shares of its capital stock or of securities or instruments exercisable for or convertible into, or otherwise representing the right to acquire, shares of its capital stock to one or more investors for cash and/or conversion or cancellation of indebtedness in a transaction or series of related transactions the primary purpose of which is a bona fide equity financing of the Company.

(b) Treatment of Warrant at Acquisition. In the event of an Acquisition in which the consideration to be received by the Company's stockholders consists solely of cash, solely of Marketable Securities or a combination of cash and Marketable Securities (a "**Cash/Public Acquisition**"), and the fair market value of one Share as determined in accordance with Section 1.3 above would be greater than the Warrant Price in effect on such date immediately prior to such Cash/Public Acquisition, and Holder has not exercised this Warrant pursuant to Section 1.1 above as to all Shares, then this Warrant shall automatically be deemed to be Cashless Exercised pursuant to Section 1.2 above as to all Shares effective immediately prior to and contingent upon the consummation of a Cash/Public Acquisition. In connection with such Cashless Exercise, Holder shall be deemed to have restated each of the representations and warranties in Section 4 of the Warrant as of the date thereof and the Company shall promptly notify the Holder of the number of Shares (or such other securities) issued upon exercise. In the event of a Cash/Public Acquisition where the fair market value of one Share as determined in accordance with Section 1.3 above would be less than the Warrant Price in effect immediately prior to such Cash/Public Acquisition, then this Warrant will expire immediately prior to the consummation of such Cash/Public Acquisition.

(c) Upon the closing of any Acquisition other than a Cash/Public Acquisition, the acquiring, surviving or successor entity shall assume the obligations of this Warrant, and this Warrant shall thereafter be exercisable for the same securities and/or other property as would have been paid for the Shares issuable upon exercise of the unexercised portion of this Warrant as if such Shares were outstanding on and as of the closing of such Acquisition, subject to further adjustment from time to time in accordance with the provisions of this Warrant.

(d) As used in this Warrant, "**Marketable Securities**" means securities meeting all of the following requirements: (i) the issuer thereof is then subject to the reporting requirements of Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), and is then current in its filing of all required reports and other information under the Act and the Exchange Act; (ii) the class and series of shares or other security of the issuer that would be received by Holder in connection with the Acquisition were Holder to exercise this Warrant on or prior to the closing thereof is then traded in a Trading Market, and (iii) following the closing of such Acquisition, Holder would not be restricted from publicly re-selling all of the issuer's shares and/or other securities that would be received by Holder in such Acquisition were Holder to exercise this Warrant in full on or prior to the closing of such Acquisition, except to the extent that any such restriction (x) arises solely under federal or state securities laws, rules or regulations, and (y) does not extend beyond six (6) months from the closing of such Acquisition.

1.7 Holder Put Right. Notwithstanding the provisions of Section 1.6 above or any other provision of this Warrant to the contrary, in the event that there shall be no Term B Loan Advance

made to the Company on or before March 31, 2020, for any reason or no reason (other than by default of any Lender party under the Loan Agreement), including, without limitation, the Company's failure or inability to consummate the Qualified Financing on or before such date, Holder shall have the one-time right (but not the obligation) (the "**Put Right**"), exercisable in its sole discretion upon written notice to the Company (the "**Put Notice**") given at any time within six (6) months after such date, to require the Company to repurchase from Holder all (but not less than all) of this Warrant (and the Company hereby agrees to repurchase this Warrant from Holder upon Holder's exercise of such Put Right) for a total aggregate purchase price of \$250,000 (the "**Repurchase Price**"), such Repurchase Price to be paid by the Company to Holder in cash in a single installment of immediately available funds at the Put Closing (as defined below), against surrender by Holder to the Company thereof of the original of this Warrant, duly endorsed for transfer on the books of the Company or accompanied by duly executed stock powers and/or other instruments of assignment or transfer. As used in this Section 1.7, "**Put Closing**" means the closing of the Company's repurchase of this Warrant pursuant to Holder's exercise of its Put Right, to be held at the principal office of the Company on such date as shall be set forth in Holder's Put Notice, which date shall be not less than ten (10) days following the date of such Put Notice.

Notwithstanding anything in this Warrant to the contrary, (1) upon Holder's delivery of the Put Notice, but subject to the consummation of the Company's repurchase of this Warrant at the Put Closing in accordance with the requirements of this Section 1.7, this Warrant shall cease to be exercisable for any Shares, and (2) upon the consummation of the Company's repurchase of this Warrant at the Put Closing in accordance with the requirements of this Section 1.7, this Warrant shall terminate and be of no further force or effect.

## SECTION 2. ADJUSTMENTS TO THE SHARES AND WARRANT PRICE.

2.1 Stock Dividends, Splits, Etc. If the Company declares or pays a dividend or distribution on the outstanding shares of the Class payable in additional shares of the Class or other securities or property (other than cash), then upon exercise of this Warrant, for each Share acquired, Holder shall receive, without additional cost to Holder, the total number and kind of securities and property which Holder would have received had Holder owned the Shares of record as of the date the dividend or distribution occurred. If the Company subdivides the outstanding shares of the Class by reclassification or otherwise into a greater number of shares, the number of Shares purchasable hereunder shall be proportionately increased and the Warrant Price shall be proportionately decreased. If the outstanding shares of the Class are combined or consolidated, by reclassification or otherwise, into a lesser number of shares, the Warrant Price shall be proportionately increased and the number of Shares shall be proportionately decreased.

2.2 Reclassification, Exchange, Combinations or Substitution. Upon any event whereby all of the outstanding shares of the Class are reclassified, exchanged, combined, substituted, or replaced for, into, with or by Company securities of a different class and/or series (including, without limitation, if the Class is a series of the Company's convertible preferred stock, the conversion of all outstanding shares of such Class into common stock in accordance with the Company's Amended and Restated Certificate of Incorporation, as amended and/or restated and in effect from time to time (the "**COI**")), then from and after the consummation of such event, this Warrant will be exercisable for the number, class and series of Company securities that Holder would have received had the Shares been outstanding on and as of the consummation of such event, and subject to further adjustment thereafter from time to time in accordance with the provisions of this Warrant. The provisions of this Section 2.2

shall similarly apply to successive reclassifications, exchanges, combinations, substitutions, replacements or other similar events.

2.3 No Fractional Share. No fractional Share shall be issuable upon exercise of this Warrant and the number of Shares to be issued shall be rounded down to the nearest whole Share. If a fractional Share interest arises upon any exercise of the Warrant, the Company shall eliminate such fractional Share interest by paying Holder in cash the amount computed by multiplying the fractional interest by (i) the fair market value (as determined in accordance with Section 1.3 above) of a full Share, less (ii) the then-effective Warrant Price.

2.4 Notice/Certificate as to Adjustments. Upon each adjustment of the Warrant Price, Class and/or number of Shares, the Company, at the Company's expense, shall notify Holder in writing within a reasonable time setting forth the adjustments to the Warrant Price, Class and/or number of Shares and facts upon which such adjustment is based. The Company shall, upon written request from Holder, furnish Holder with a certificate of its Chief Financial Officer, including computations of such adjustment and the Warrant Price, Class and number of Shares in effect upon the date of such adjustment.

2.5 Adjustments for Diluting Issuances. Without duplication of any adjustment otherwise provided for in this Section 2, if the Class is a series of the Company's convertible preferred stock, then the number of shares of common stock issuable upon conversion of the Shares shall be subject to anti-dilution adjustment from time to time in the manner applicable to the outstanding shares of the Class as set forth in the COI as if the Shares were issued and outstanding on and as of the date of any such required adjustment.

### SECTION 3. REPRESENTATIONS AND COVENANTS OF THE COMPANY.

3.1 Representations and Warranties. The Company represents and warrants to, and agrees with, the Holder as follows:

(a) [Reserved].

(b) All Shares which may be issued upon the exercise of this Warrant shall, upon issuance, be duly authorized, validly issued, fully paid and non-assessable, and free of any liens and encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws. The Company covenants that it shall at all times cause to be reserved and kept available out of its authorized and unissued capital stock such number of shares of the Class and other securities as will be sufficient to permit the exercise in full of this Warrant.

(c) The Company's capitalization table attached hereto as Schedule 1 is true and complete, in all material respects, as of the Issue Date.

3.2 Notice of Certain Events. At all times prior to the IPO while this Warrant shall then be exercisable for any Shares in accordance with its terms, if the Company proposes at any time to:

(a) declare any dividend or distribution upon the outstanding shares of the Class, whether in cash, property, stock, or other securities and whether or not a regular cash dividend;

- (b) offer for subscription or sale pro rata to the holders of the outstanding shares of the Class any additional shares of any class or series of the Company's stock (other than pursuant to contractual pre-emptive rights);
- (c) effect any reclassification, exchange, combination, substitution, reorganization or recapitalization of the outstanding shares of the Class;
- (d) effect an Acquisition or to liquidate, dissolve or wind up; or
- (e) effect its initial, underwritten offering and sale of its securities to the public pursuant to an effective registration statement under the Act (the "**IPO**");

then, in connection with each such event, the Company shall give Holder:

- (1) in the case of the matters referred to in (a) and (b) above, at least seven (7) Business Days prior written notice of the earlier to occur of the effective date thereof or the date on which a record will be taken for such dividend, distribution, or subscription rights (and specifying the date on which the holders of outstanding shares of the Class will be entitled thereto) or for determining rights to vote, if any;
- (2) in the case of the matters referred to in (c) and (d) above at least seven (7) Business Days prior written notice of the date when the same will take place (and specifying the date on which the holders of outstanding shares of the Class will be entitled to exchange their shares for the securities or other property deliverable upon the occurrence of such event and such reasonable information as Holder may reasonably require regarding the treatment of this Warrant in connection with such event giving rise to the notice); and
- (3) with respect to the IPO, at least seven (7) Business Days prior written notice of the date on which the Company proposes to file its registration statement in connection therewith.

The Company will also provide information requested by Holder from time to time, within a reasonable time following each such request, that is reasonably necessary to enable Holder to comply with Holder's accounting or reporting requirements. Prior to the IPO, such information may include, but shall not be limited to, the Company's then-current summary capitalization table, the price per share for which the Company most recently prior thereto sold or issued shares of its convertible preferred stock to investors for cash in a bona fide equity financing of the Company, and the Company's most recent valuation of a share of its common stock pursuant to Section 409A of the Internal Revenue Code of 1986, as amended. Holder agrees to treat and hold all information provided by the Company pursuant to this Warrant in confidence in accordance with the provisions of Section 12.9 of the Loan Agreement (regardless of whether the Loan Agreement shall then be in effect).

#### SECTION 4. REPRESENTATIONS, WARRANTIES OF THE HOLDER.

The Holder represents and warrants to the Company as follows:

4.1 Purchase for Own Account. This Warrant and the Shares to be acquired upon exercise of this Warrant by Holder are being acquired for investment for Holder's account, not as a nominee or agent, and not with a view to the public resale or distribution within the meaning of the Act.

Holder also represents that it has not been formed for the specific purpose of acquiring this Warrant or the Shares.

4.2 Disclosure of Information. Holder is aware of the Company's business affairs and financial condition and has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access.

4.3 Investment Experience. Holder understands that the purchase of this Warrant and its underlying securities involves substantial risk. Holder has experience as an investor in securities of companies in the development stage and acknowledges that Holder can bear the economic risk of such Holder's investment in this Warrant and its underlying securities and has such knowledge and experience in financial or business matters that Holder is capable of evaluating the merits and risks of its investment in this Warrant and its underlying securities and/or has a preexisting personal or business relationship with the Company and certain of its officers, directors or controlling persons of a nature and duration that enables Holder to be aware of the character, business acumen and financial circumstances of such persons.

4.4 Accredited Investor Status. Holder is an "accredited investor" within the meaning of Regulation D promulgated under the Act.

4.5 The Act. Holder understands that this Warrant and the Shares issuable upon exercise hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the Holder's investment intent as expressed herein. Holder understands that this Warrant and the Shares issued upon any exercise hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state securities laws, or unless exemption from such registration and qualification are otherwise available. Holder is aware of the provisions of Rule 144 promulgated under the Act.

4.6 No Voting Rights. Holder, as a Holder of this Warrant, will not have any voting rights until the exercise of this Warrant.

4.7 Market Stand Off. Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the IPO and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days) (a) lend, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any Shares held immediately prior to the effectiveness of the registration statement for such offering, or (b) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Shares, whether any such transaction described in clause (a) or (b) above is to be settled by delivery of the Shares or other securities, in cash or otherwise. The foregoing provisions of this Section 4.7 shall apply only to the Company's IPO, shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, and shall not apply unless all directors and officers of the Company, and all holders of one percent (1%) or more of the Company's outstanding common stock determined on a fully-

diluted, as-exercised, as-converted basis, are then bound by substantially similar written agreements with the Company and/or the underwriters in connection with the Company's IPO. The underwriters in connection with the Company's IPO are intended third-party beneficiaries of this Section 4.7 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto. Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in the Company's IPO that are consistent with this Section 4.7 or that are necessary to give further effect thereto. In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to the Shares (and the shares or securities of every other person subject to the foregoing restriction) until the end of such period.

## SECTION 5. MISCELLANEOUS.

### 5.1 Term; Automatic Cashless Exercise Upon Expiration.

(a) Term. Subject to the provisions of Section 1.6 above, this Warrant is exercisable in whole or in part at any time and from time to time commencing on the first date (if any) on which a Term B Loan Advance shall be made to the Company and ending on or before 6:00 PM, Pacific time, on the tenth (10th) anniversary of the Issue Date hereof (the "**Expiration Date**") and shall be void thereafter; provided, that if there shall have been no Term B Loan Advance made to the Company on or before March 31, 2020 for any reason or no reason (other than by default of any Lender party under the Loan Agreement), including, without limitation, the Company's failure or inability to consummate the Qualified Financing on or before such date, then, subject to the provisions of Section 1.7 above, this Warrant shall terminate on September 30, 2020 unless Holder shall have delivered a Put Notice on or before such date, in which case this Warrant shall terminate upon consummation of the Company's repurchase of this Warrant at the Put Closing in accordance with the requirements of Section 1.7 above.

(b) Automatic Cashless Exercise upon Expiration. In the event that, upon the Expiration Date, the fair market value of one Share as determined in accordance with Section 1.3 above is greater than the Warrant Price in effect on such date, then this Warrant shall automatically be deemed on and as of such date to be exercised pursuant to Section 1.2 above as to all Shares for which it shall not previously have been exercised, and the Company shall, within a reasonable time, deliver a certificate representing the Shares issued upon such exercise to Holder.

### 5.2 Legends. Each certificate evidencing Shares shall be imprinted with a legend in substantially the following form:

THE SHARES EVIDENCED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "**ACT**"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN THAT CERTAIN WARRANT TO PURCHASE STOCK ISSUED BY THE ISSUER TO SILICON VALLEY BANK DATED MAY 14, 2019, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR, IN THE OPINION OF LEGAL COUNSEL IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

And, if then applicable, a legend in substantially the following form:

THE SHARES EVIDENCED BY THIS CERTIFICATE ARE SUBJECT TO A LOCK-UP PERIOD AFTER THE EFFECTIVE DATE OF THE ISSUER'S REGISTRATION STATEMENT FILED UNDER THE SECURITIES ACT, AS AMENDED, AS SET FORTH IN AN AGREEMENT BETWEEN THE COMPANY AND THE ORIGINAL HOLDER OF THESE SECURITIES, A COPY OF WHICH MAY BE OBTAINED AT THE ISSUER'S PRINCIPAL OFFICE. SUCH LOCK-UP PERIOD IS BINDING ON TRANSFEREES OF THESE SHARES.

5.3 Compliance with Securities Laws on Transfer. This Warrant and the Shares issued upon exercise of this Warrant may not be transferred or assigned in whole or in part except in compliance with applicable federal and state securities laws by the transferor and the transferee (including, without limitation, the delivery of investment representation letters and legal opinions reasonably satisfactory to the Company, as reasonably requested by the Company). The Company shall not require Holder to provide an opinion of counsel if the transfer is to SVB Financial Group (Silicon Valley Bank's parent company) or any other affiliate of Holder, provided that any such transferee is an "accredited investor" as defined in Regulation D promulgated under the Act.

5.4 Transfer Procedure. After receipt by Silicon Valley Bank of the executed Warrant, Silicon Valley Bank will transfer all of this Warrant to its parent company, SVB Financial Group. By its acceptance of this Warrant, SVB Financial Group hereby makes to the Company each of the representations and warranties set forth in Section 4 hereof and agrees to be bound by all of the terms and conditions of this Warrant as if the original Holder hereof. Subject to the provisions of Section 5.3 and upon providing the Company with written notice, SVB Financial Group and any subsequent Holder may transfer all or part of this Warrant or the Shares issued upon exercise of this Warrant to any transferee, provided, however, in connection with any such transfer, SVB Financial Group or any subsequent Holder will give the Company notice of the portion of the Warrant and/or Shares being transferred with the name, address and taxpayer identification number of the transferee and Holder will surrender this Warrant to the Company for reissuance to the transferee(s) (and Holder if applicable); and provided further, that any subsequent transferee other than SVB Financial Group shall agree in writing with the Company to be bound by all of the terms and conditions of this Warrant. Notwithstanding any contrary provision herein, at all times prior to the IPO, Holder may not, without the Company's prior written consent, transfer this Warrant or any portion hereof, or any Shares issued upon any exercise hereof, to any person or entity who directly competes with the Company, except in connection with an Acquisition of the Company by such a direct competitor.

5.5 Notices. All notices and other communications hereunder from the Company to the Holder, or vice versa, shall be deemed delivered and effective (i) when given personally, (ii) on the third (3<sup>rd</sup>) Business Day after being mailed by first-class registered or certified mail, postage prepaid, (iii) upon actual receipt if given by facsimile or electronic mail and such receipt is confirmed in writing by the recipient, or (iv) on the first Business Day following delivery to a reliable overnight courier service, courier fee prepaid, in any case at such address as may have been furnished to the Company or Holder, as the case may be, in writing by the Company or such Holder from time to time in accordance with the provisions of this Section 5.5. All notices to Holder shall be addressed as follows until the Company receives notice of a change of address in connection with a transfer or otherwise:

SVB Financial Group  
Attn: Treasury Department  
3003 Tasman Drive, HC 215  
Santa Clara, CA 95054  
Telephone:  
Facsimile:  
Email address:

Notice to the Company shall be addressed as follows until Holder receives notice of a change in address:

Phathom Pharmaceuticals, Inc.  
Attn: Chief Financial Officer  
60 Willow Road, Suite 200  
Menlo Park, CA 940025  
Telephone:  
Facsimile:  
Email:

With a copy (which shall not constitute notice) to:

Latham & Watkins LLP  
12670 High Bluff Drive  
San Diego, CA 92103  
Attention: Cheston J. Larson  
Email: cheston.larson@lw.com  
Facsimile No.: (858) 523-5450

5.6 Waiver. This Warrant and any term hereof may be changed, waived, discharged or terminated (either generally or in a particular instance and either retroactively or prospectively) only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

5.7 Attorneys' Fees. In the event of any dispute between the parties concerning the terms and provisions of this Warrant, the party prevailing in such dispute shall be entitled to collect from the other party all costs incurred in such dispute, including reasonable attorneys' fees.

5.8 Counterparts; Facsimile/Electronic Signatures. This Warrant may be executed in counterparts, all of which together shall constitute one and the same agreement. Any signature page delivered electronically or by facsimile shall be binding to the same extent as an original signature page with regards to any agreement subject to the terms hereof or any amendment thereto.

5.9 Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of California, without giving effect to its principles regarding conflicts of law.

5.10 Headings. The headings in this Warrant are for purposes of reference only and shall not limit or otherwise affect the meaning of any provision of this Warrant.



5.11 Business Days. "**Business Day**" is any day that is not a Saturday, Sunday or a day on which Silicon Valley Bank is closed.

[Remainder of page left blank intentionally]  
[Signature page follows]

IN WITNESS WHEREOF, the parties have caused this Warrant to Purchase Stock to be executed by their duly authorized representatives effective as of the Issue Date written above.

“COMPANY”

PHATHOM PHARMACEUTICALS, INC.

By: /s/ David A. Socks  
Name: David A. Socks  
(Print)  
Title: President, Chief Executive Officer, Treasurer,  
Secretary

“HOLDER”

SILICON VALLEY BANK

By: /s/ Anthony Flores  
Name: Anthony Flores  
(Print)  
Title: Managing Director

APPENDIX 1

NOTICE OF EXERCISE

1. The undersigned Holder hereby exercises its right to purchase \_\_\_\_\_ shares of the Common/Series \_\_\_\_\_ Preferred [circle one] Stock of \_\_\_\_\_ (the "**Company**") in accordance with the attached Warrant To Purchase Stock, and tenders payment of the aggregate Warrant Price for such shares as follows:

- check in the amount of \$\_\_\_\_ payable to order of the Company enclosed herewith
- Wire transfer of immediately available funds to the Company's account
- Cashless Exercise pursuant to Section 1.2 of the Warrant
- Other [Describe] \_\_\_\_\_

2. Please issue a certificate or certificates representing the Shares in the name specified below:

\_\_\_\_\_  
Holder's Name

\_\_\_\_\_

\_\_\_\_\_  
(Address)

3. By its execution below and for the benefit of the Company, Holder hereby restates each of the representations and warranties in Section 4 of the Warrant to Purchase Stock as of the date hereof.

HOLDER:

\_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

(Date): \_\_\_\_\_

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE “**ACT**”), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN SECTIONS 5.3 AND 5.4 BELOW, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR, IN THE OPINION OF LEGAL COUNSEL IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

### WARRANT TO PURCHASE STOCK

**Company:** Phathom Pharmaceuticals, Inc., a Delaware corporation

**Number of Shares:** As set forth in Paragraph A below

**Type/Series of Stock:** As set forth in Paragraph A below

**Warrant Price:** As set forth in Paragraph A below

**Issue Date:** May 14, 2019

**Expiration Date:** As set forth in Section 5.1(a) below.

**Credit Facility:** This Warrant to Purchase Stock (“**Warrant**”) is issued in connection with that certain Loan and Security Agreement of even date herewith among Silicon Valley Bank, WestRiver Innovation Lending Fund VIII, L.P. and the Company (as amended and/or modified and in effect from time to time, the “**Loan Agreement**”).

THIS WARRANT CERTIFIES THAT, for good and valuable consideration, WESTRIVER INNOVATION LENDING FUND VIII, L.P. (together with any successor or permitted assignee or transferee of this Warrant or of any shares issued upon exercise hereof, “**Holder**”) is entitled to purchase up to the number of fully paid and non-assessable shares of the above-stated Type/Series of Stock (the “**Class**”) of the above-named company (the “**Company**”) determined pursuant to Paragraph A below, at a purchase price per share equal to the Warrant Price (as defined below), all as set forth above and as adjusted pursuant to Section 2 of this Warrant, subject to the provisions and upon the terms and conditions set forth in this Warrant.

A. Number of Shares; Warrant Price; Class.

(1) Number of Shares. Upon the making (if any) of each Term B Loan Advance (as defined in the Loan Agreement), this Warrant automatically shall become exercisable for such number of shares of the Class (cumulatively and collectively, and as may be adjusted from time to time in accordance with the provisions of this Warrant, the “**Shares**”) as shall equal (a)(i) 0.01, multiplied by (ii) the amount of such Term B Loan Advance, divided by (b) the Warrant Price in effect on and as of the date of such Term B Loan Advance, subject to adjustment thereafter from time to time in accordance with the provisions of this Warrant.

(2) Warrant Price. The purchase price per Share hereunder (the “**Warrant Price**”) shall equal the Note Conversion Price (as defined below), subject to adjustment from time to time in accordance with the provisions of this Warrant.

(3) Certain Definitions. As used herein, the following capitalized terms have the respective meanings given below:

“Class” means Qualified Financing Securities.

“Note Conversion Price” means the “Conversion Price” (as defined in the Note Purchase Agreement) at which the Notes convert into shares or units of Qualified Financing Securities, or otherwise for which shares or units of Qualified Financing Securities are issued by the Company in exchange for, or in satisfaction of its obligations under, the Notes in the Qualified Financing.

“Note Purchase Agreement” means that certain Note Purchase Agreement of the Company dated May 7, 2019 among the Company and the several purchasers named therein, as amended and/or restated and in effect from time to time.

“Notes” means those certain convertible promissory notes of the Company issued from time to time under and pursuant to the Note Purchase Agreement, as any or all of such notes may be amended and/or restated and in effect from time to time, together with any convertible promissory notes of the Company issued in exchange for, or replacement or substitution of, such notes.

“Qualified Financing” means the first to occur of (a) a “Next Equity Financing,” (b) a “Non-Qualified Next Equity Financing” or (c) an “Initial Public Offering” (each as defined in the Note Purchase Agreement), in each case in which the Notes convert into, or are otherwise exchanged for or satisfied by the Company’s issuance of, Qualified Financing Securities.

“Qualified Financing Securities” means the class and/or series and/or other designation of Company capital stock and/or other equity securities sold and issued by the Company in the Qualified Financing.

## SECTION 1. EXERCISE.

1.1 Method of Exercise. Holder may at any time and from time to time on or after the first date (if any) on which a Term B Loan Advance shall be made to the Company and on or before the Expiration Date, exercise this Warrant, in whole or in part, by delivering to the Company the original of this Warrant together with a duly executed Notice of Exercise in substantially the form attached hereto as Appendix 1 and, unless Holder is exercising this Warrant pursuant to a cashless exercise set forth in Section 1.2, a check, wire transfer of same-day funds (to an account designated by the Company), or other form of payment acceptable to the Company for the aggregate Warrant Price for the Shares being purchased.

1.2 Cashless Exercise. On any exercise of this Warrant, in lieu of payment of the aggregate Warrant Price in the manner as specified in Section 1.1 above, but otherwise in accordance with the requirements of Section 1.1, Holder may elect to receive Shares equal to the value of this Warrant, or portion hereof as to which this Warrant is being exercised. Thereupon, the Company shall issue to the Holder such number of fully paid and non-assessable Shares as are computed using the following formula:

$$X = Y(A-B)/A$$

where:

X = the number of Shares to be issued to the Holder;

- Y = the number of Shares with respect to which this Warrant is being exercised (inclusive of the Shares surrendered to the Company in payment of the aggregate Warrant Price);
- A = the fair market value (as determined pursuant to Section 1.3 below) of one Share; and
- B = the Warrant Price.

1.3 Fair Market Value. If the Company's common stock is then traded or quoted on a nationally recognized securities exchange, inter-dealer quotation system or over-the-counter market (a "Trading Market") and the Class is common stock, the fair market value of a Share shall be the closing price or last sale price of a share of common stock reported for the Business Day immediately before the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company. If the Company's common stock is then traded in a Trading Market and the Class is a series of the Company's convertible preferred stock, the fair market value of a Share shall be the closing price or last sale price of a share of the Company's common stock reported for the Business Day immediately before the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company multiplied by the number of shares of the Company's common stock into which a Share is then convertible. If the Company's common stock is not traded in a Trading Market, the Board of Directors of the Company shall determine the fair market value of a Share in its reasonable good faith judgment.

1.4 Delivery of Book Entry Statement or Certificate and New Warrant. Within a reasonable time after Holder exercises this Warrant in the manner set forth in Section 1.1 or 1.2 above, the Company or its transfer agent shall deliver to Holder a book entry statement or certificate representing the Shares issued to Holder upon such exercise and, if this Warrant has not been fully exercised and has not expired, a new warrant of like tenor representing the Shares not so acquired.

1.5 Replacement of Warrant. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form, substance and amount to the Company or, in the case of mutilation, on surrender of this Warrant to the Company for cancellation, the Company shall, within a reasonable time, execute and deliver to Holder, in lieu of this Warrant, a new warrant of like tenor and amount.

1.6 Treatment of Warrant Upon Acquisition of Company.

(a) Acquisition. For the purpose of this Warrant, "Acquisition" means any transaction or series of related transactions involving: (i) the sale, lease, exclusive license, or other disposition of all or substantially all of the assets of the Company; (ii) any merger or consolidation of the Company into or with another person or entity (other than a merger or consolidation effected exclusively to change the Company's domicile), or any other corporate reorganization, in which the stockholders of the Company in their capacity as such immediately prior to such merger, consolidation or reorganization, own less than a majority of the Company's (or the surviving or successor entity's) outstanding voting power immediately after such merger, consolidation or reorganization); (iii) any merger or consolidation of the Company into or with another person or entity, or any other corporate reorganization, in which (A) the stockholders of the Company in their capacity as such immediately prior to such merger, consolidation or

reorganization, own a majority of the outstanding voting power of the surviving or successor entity as of immediately after such merger, consolidation or reorganization, and (B) such surviving or successor entity is not the Company; or (iv) any sale or other transfer by the stockholders of the Company of shares representing at least a majority of the Company's then-total outstanding combined voting power. For the avoidance of doubt, "Acquisition" shall not include any sale and issuance by the Company of shares of its capital stock or of securities or instruments exercisable for or convertible into, or otherwise representing the right to acquire, shares of its capital stock to one or more investors for cash and/or conversion or cancellation of indebtedness in a transaction or series of related transactions the primary purpose of which is a bona fide equity financing of the Company.

(b) Treatment of Warrant at Acquisition. In the event of an Acquisition in which the consideration to be received by the Company's stockholders consists solely of cash, solely of Marketable Securities or a combination of cash and Marketable Securities (a "**Cash/Public Acquisition**"), and the fair market value of one Share as determined in accordance with Section 1.3 above would be greater than the Warrant Price in effect on such date immediately prior to such Cash/Public Acquisition, and Holder has not exercised this Warrant pursuant to Section 1.1 above as to all Shares, then this Warrant shall automatically be deemed to be Cashless Exercised pursuant to Section 1.2 above as to all Shares effective immediately prior to and contingent upon the consummation of a Cash/Public Acquisition. In connection with such Cashless Exercise, Holder shall be deemed to have restated each of the representations and warranties in Section 4 of the Warrant as of the date thereof and the Company shall promptly notify the Holder of the number of Shares (or such other securities) issued upon exercise. In the event of a Cash/Public Acquisition where the fair market value of one Share as determined in accordance with Section 1.3 above would be less than the Warrant Price in effect immediately prior to such Cash/Public Acquisition, then this Warrant will expire immediately prior to the consummation of such Cash/Public Acquisition.

(c) Upon the closing of any Acquisition other than a Cash/Public Acquisition, the acquiring, surviving or successor entity shall assume the obligations of this Warrant, and this Warrant shall thereafter be exercisable for the same securities and/or other property as would have been paid for the Shares issuable upon exercise of the unexercised portion of this Warrant as if such Shares were outstanding on and as of the closing of such Acquisition, subject to further adjustment from time to time in accordance with the provisions of this Warrant.

(d) As used in this Warrant, "**Marketable Securities**" means securities meeting all of the following requirements: (i) the issuer thereof is then subject to the reporting requirements of Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), and is then current in its filing of all required reports and other information under the Act and the Exchange Act; (ii) the class and series of shares or other security of the issuer that would be received by Holder in connection with the Acquisition were Holder to exercise this Warrant on or prior to the closing thereof is then traded in a Trading Market, and (iii) following the closing of such Acquisition, Holder would not be restricted from publicly re-selling all of the issuer's shares and/or other securities that would be received by Holder in such Acquisition were Holder to exercise this Warrant in full on or prior to the closing of such Acquisition, except to the extent that any such restriction (x) arises solely under federal or state securities laws, rules or regulations, and (y) does not extend beyond six (6) months from the closing of such Acquisition.

1.7 Holder Put Right. Notwithstanding the provisions of Section 1.6 above or any other provision of this Warrant to the contrary, in the event that there shall be no Term B Loan Advance

made to the Company on or before March 31, 2020, for any reason or no reason (other than by default of any Lender party under the Loan Agreement), including, without limitation, the Company's failure or inability to consummate the Qualified Financing on or before such date, Holder shall have the one-time right (but not the obligation) (the "**Put Right**"), exercisable in its sole discretion upon written notice to the Company (the "**Put Notice**") given at any time within six (6) months after such date, to require the Company to repurchase from Holder all (but not less than all) of this Warrant (and the Company hereby agrees to repurchase this Warrant from Holder upon Holder's exercise of such Put Right) for a total aggregate purchase price of \$250,000 (the "**Repurchase Price**"), such Repurchase Price to be paid by the Company to Holder in cash in a single installment of immediately available funds at the Put Closing (as defined below), against surrender by Holder to the Company thereof of the original of this Warrant, duly endorsed for transfer on the books of the Company or accompanied by duly executed stock powers and/or other instruments of assignment or transfer. As used in this Section 1.7, "**Put Closing**" means the closing of the Company's repurchase of this Warrant pursuant to Holder's exercise of its Put Right, to be held at the principal office of the Company on such date as shall be set forth in Holder's Put Notice, which date shall be not less than ten (10) days following the date of such Put Notice.

Notwithstanding anything in this Warrant to the contrary, (1) upon Holder's delivery of the Put Notice, but subject to the consummation of the Company's repurchase of this Warrant at the Put Closing in accordance with the requirements of this Section 1.7, this Warrant shall cease to be exercisable for any Shares, and (2) upon the consummation of the Company's repurchase of this Warrant at the Put Closing in accordance with the requirements of this Section 1.7, this Warrant shall terminate and be of no further force or effect.

## SECTION 2. ADJUSTMENTS TO THE SHARES AND WARRANT PRICE.

2.1 Stock Dividends, Splits, Etc. If the Company declares or pays a dividend or distribution on the outstanding shares of the Class payable in additional shares of the Class or other securities or property (other than cash), then upon exercise of this Warrant, for each Share acquired, Holder shall receive, without additional cost to Holder, the total number and kind of securities and property which Holder would have received had Holder owned the Shares of record as of the date the dividend or distribution occurred. If the Company subdivides the outstanding shares of the Class by reclassification or otherwise into a greater number of shares, the number of Shares purchasable hereunder shall be proportionately increased and the Warrant Price shall be proportionately decreased. If the outstanding shares of the Class are combined or consolidated, by reclassification or otherwise, into a lesser number of shares, the Warrant Price shall be proportionately increased and the number of Shares shall be proportionately decreased.

2.2 Reclassification, Exchange, Combinations or Substitution. Upon any event whereby all of the outstanding shares of the Class are reclassified, exchanged, combined, substituted, or replaced for, into, with or by Company securities of a different class and/or series (including, without limitation, if the Class is a series of the Company's convertible preferred stock, the conversion of all outstanding shares of such Class into common stock in accordance with the Company's Amended and Restated Certificate of Incorporation, as amended and/or restated and in effect from time to time (the "**COI**")), then from and after the consummation of such event, this Warrant will be exercisable for the number, class and series of Company securities that Holder would have received had the Shares been outstanding on and as of the consummation of such event, and subject to further adjustment thereafter from time to time in accordance with the provisions of this Warrant. The provisions of this Section 2.2



shall similarly apply to successive reclassifications, exchanges, combinations, substitutions, replacements or other similar events.

2.3 No Fractional Share. No fractional Share shall be issuable upon exercise of this Warrant and the number of Shares to be issued shall be rounded down to the nearest whole Share. If a fractional Share interest arises upon any exercise of the Warrant, the Company shall eliminate such fractional Share interest by paying Holder in cash the amount computed by multiplying the fractional interest by (i) the fair market value (as determined in accordance with Section 1.3 above) of a full Share, less (ii) the then-effective Warrant Price.

2.4 Notice/Certificate as to Adjustments. Upon each adjustment of the Warrant Price, Class and/or number of Shares, the Company, at the Company's expense, shall notify Holder in writing within a reasonable time setting forth the adjustments to the Warrant Price, Class and/or number of Shares and facts upon which such adjustment is based. The Company shall, upon written request from Holder, furnish Holder with a certificate of its Chief Financial Officer, including computations of such adjustment and the Warrant Price, Class and number of Shares in effect upon the date of such adjustment.

2.5 Adjustments for Diluting Issuances. Without duplication of any adjustment otherwise provided for in this Section 2, if the Class is a series of the Company's convertible preferred stock, then the number of shares of common stock issuable upon conversion of the Shares shall be subject to anti-dilution adjustment from time to time in the manner applicable to the outstanding shares of the Class as set forth in the COI as if the Shares were issued and outstanding on and as of the date of any such required adjustment.

### SECTION 3. REPRESENTATIONS AND COVENANTS OF THE COMPANY.

3.1 Representations and Warranties. The Company represents and warrants to, and agrees with, the Holder as follows:

(a) [Reserved].

(b) All Shares which may be issued upon the exercise of this Warrant shall, upon issuance, be duly authorized, validly issued, fully paid and non-assessable, and free of any liens and encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws. The Company covenants that it shall at all times cause to be reserved and kept available out of its authorized and unissued capital stock such number of shares of the Class and other securities as will be sufficient to permit the exercise in full of this Warrant.

(c) The Company's capitalization table attached hereto as Schedule 1 is true and complete, in all material respects, as of the Issue Date.

3.2 Notice of Certain Events. At all times prior to the IPO while this Warrant shall then be exercisable for any Shares in accordance with its terms, if the Company proposes at any time to:

(a) declare any dividend or distribution upon the outstanding shares of the Class, whether in cash, property, stock, or other securities and whether or not a regular cash dividend;

- (b) offer for subscription or sale pro rata to the holders of the outstanding shares of the Class any additional shares of any class or series of the Company's stock (other than pursuant to contractual pre-emptive rights);
- (c) effect any reclassification, exchange, combination, substitution, reorganization or recapitalization of the outstanding shares of the Class;
- (d) effect an Acquisition or to liquidate, dissolve or wind up; or
- (e) effect its initial, underwritten offering and sale of its securities to the public pursuant to an effective registration statement under the Act (the "**IPO**");

then, in connection with each such event, the Company shall give Holder:

- (1) in the case of the matters referred to in (a) and (b) above, at least seven (7) Business Days prior written notice of the earlier to occur of the effective date thereof or the date on which a record will be taken for such dividend, distribution, or subscription rights (and specifying the date on which the holders of outstanding shares of the Class will be entitled thereto) or for determining rights to vote, if any;
- (2) in the case of the matters referred to in (c) and (d) above at least seven (7) Business Days prior written notice of the date when the same will take place (and specifying the date on which the holders of outstanding shares of the Class will be entitled to exchange their shares for the securities or other property deliverable upon the occurrence of such event and such reasonable information as Holder may reasonably require regarding the treatment of this Warrant in connection with such event giving rise to the notice); and
- (3) with respect to the IPO, at least seven (7) Business Days prior written notice of the date on which the Company proposes to file its registration statement in connection therewith.

The Company will also provide information requested by Holder from time to time, within a reasonable time following each such request, that is reasonably necessary to enable Holder to comply with Holder's accounting or reporting requirements. Prior to the IPO, such information may include, but shall not be limited to, the Company's then-current summary capitalization table, the price per share for which the Company most recently prior thereto sold or issued shares of its convertible preferred stock to investors for cash in a bona fide equity financing of the Company, and the Company's most recent valuation of a share of its common stock pursuant to Section 409A of the Internal Revenue Code of 1986, as amended. Holder agrees to treat and hold all information provided by the Company pursuant to this Warrant in confidence in accordance with the provisions of Section 12.9 of the Loan Agreement (regardless of whether the Loan Agreement shall then be in effect).

#### SECTION 4. REPRESENTATIONS, WARRANTIES OF THE HOLDER.

The Holder represents and warrants to the Company as follows:

4.1 Purchase for Own Account. This Warrant and the Shares to be acquired upon exercise of this Warrant by Holder are being acquired for investment for Holder's account, not as a nominee or agent, and not with a view to the public resale or distribution within the meaning of the Act.

Holder also represents that it has not been formed for the specific purpose of acquiring this Warrant or the Shares.

4.2 Disclosure of Information. Holder is aware of the Company's business affairs and financial condition and has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access.

4.3 Investment Experience. Holder understands that the purchase of this Warrant and its underlying securities involves substantial risk. Holder has experience as an investor in securities of companies in the development stage and acknowledges that Holder can bear the economic risk of such Holder's investment in this Warrant and its underlying securities and has such knowledge and experience in financial or business matters that Holder is capable of evaluating the merits and risks of its investment in this Warrant and its underlying securities and/or has a preexisting personal or business relationship with the Company and certain of its officers, directors or controlling persons of a nature and duration that enables Holder to be aware of the character, business acumen and financial circumstances of such persons.

4.4 Accredited Investor Status. Holder is an "accredited investor" within the meaning of Regulation D promulgated under the Act.

4.5 The Act. Holder understands that this Warrant and the Shares issuable upon exercise hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the Holder's investment intent as expressed herein. Holder understands that this Warrant and the Shares issued upon any exercise hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state securities laws, or unless exemption from such registration and qualification are otherwise available. Holder is aware of the provisions of Rule 144 promulgated under the Act.

4.6 No Voting Rights. Holder, as a Holder of this Warrant, will not have any voting rights until the exercise of this Warrant.

4.7 Market Stand Off. Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the IPO and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days) (a) lend, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any Shares held immediately prior to the effectiveness of the registration statement for such offering, or (b) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Shares, whether any such transaction described in clause (a) or (b) above is to be settled by delivery of the Shares or other securities, in cash or otherwise. The foregoing provisions of this Section 4.7 shall apply only to the Company's IPO, shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, and shall not apply unless all directors and officers of the Company, and all holders of one percent (1%) or more of the Company's outstanding common stock determined on a fully-

diluted, as-exercised, as-converted basis, are then bound by substantially similar written agreements with the Company and/or the underwriters in connection with the Company's IPO. The underwriters in connection with the Company's IPO are intended third-party beneficiaries of this Section 4.7 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto. Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in the Company's IPO that are consistent with this Section 4.7 or that are necessary to give further effect thereto. In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to the Shares (and the shares or securities of every other person subject to the foregoing restriction) until the end of such period.

## SECTION 5. MISCELLANEOUS.

### 5.1 Term; Automatic Cashless Exercise Upon Expiration.

(a) Term. Subject to the provisions of Section 1.6 above, this Warrant is exercisable in whole or in part at any time and from time to time commencing on the first date (if any) on which a Term B Loan Advance shall be made to the Company and ending on or before 6:00 PM, Pacific time, on the tenth (10th) anniversary of the Issue Date hereof (the "**Expiration Date**") and shall be void thereafter; provided, that if there shall have been no Term B Loan Advance made to the Company on or before March 31, 2020 for any reason or no reason (other than by default of any Lender party under the Loan Agreement), including, without limitation, the Company's failure or inability to consummate the Qualified Financing on or before such date, then, subject to the provisions of Section 1.7 above, this Warrant shall terminate on September 30, 2020 unless Holder shall have delivered a Put Notice on or before such date, in which case this Warrant shall terminate upon consummation of the Company's repurchase of this Warrant at the Put Closing in accordance with the requirements of Section 1.7 above.

(b) Automatic Cashless Exercise upon Expiration. In the event that, upon the Expiration Date, the fair market value of one Share as determined in accordance with Section 1.3 above is greater than the Warrant Price in effect on such date, then this Warrant shall automatically be deemed on and as of such date to be exercised pursuant to Section 1.2 above as to all Shares for which it shall not previously have been exercised, and the Company shall, within a reasonable time, deliver a certificate representing the Shares issued upon such exercise to Holder.

### 5.2 Legends. Each certificate evidencing Shares shall be imprinted with a legend in substantially the following form:

THE SHARES EVIDENCED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "**ACT**"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN THAT CERTAIN WARRANT TO PURCHASE STOCK ISSUED BY THE ISSUER TO WESTRIVER INNOVATION LENDING FUND VIII, L.P. DATED MAY 14, 2019, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR, IN THE OPINION OF LEGAL COUNSEL IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

And, if then applicable, a legend in substantially the following form:

THE SHARES EVIDENCED BY THIS CERTIFICATE ARE SUBJECT TO A LOCK-UP PERIOD AFTER THE EFFECTIVE DATE OF THE ISSUER'S REGISTRATION STATEMENT FILED UNDER THE SECURITIES ACT, AS AMENDED, AS SET FORTH IN AN AGREEMENT BETWEEN THE COMPANY AND THE ORIGINAL HOLDER OF THESE SECURITIES, A COPY OF WHICH MAY BE OBTAINED AT THE ISSUER'S PRINCIPAL OFFICE. SUCH LOCK-UP PERIOD IS BINDING ON TRANSFEREES OF THESE SHARES.

5.3 Compliance with Securities Laws on Transfer. This Warrant and the Shares issued upon exercise of this Warrant may not be transferred or assigned in whole or in part except in compliance with applicable federal and state securities laws by the transferor and the transferee (including, without limitation, the delivery of investment representation letters and legal opinions reasonably satisfactory to the Company, as reasonably requested by the Company). The Company shall not require Holder to provide an opinion of counsel if the transfer is to an affiliate of Holder, provided that such affiliate is an "accredited investor" as defined in Regulation D promulgated under the Act.

5.4 Transfer Procedure. Subject to the provisions of Section 5.3 and upon providing the Company with written notice, Holder may transfer all or part of this Warrant or the Shares issued upon exercise of this Warrant to any transferee, provided, however, in connection with any such transfer, Holder will give the Company notice of the portion of the Warrant and/or Shares being transferred with the name, address and taxpayer identification number of the transferee and Holder will surrender this Warrant to the Company for reissuance to the transferee(s) (and Holder if applicable); and provided further, that any transferee shall agree in writing with the Company to be bound by all of the terms and conditions of this Warrant. Notwithstanding any contrary provision herein, at all times prior to the IPO, Holder may not, without the Company's prior written consent, transfer this Warrant or any portion hereof, or any Shares issued upon any exercise hereof, to any person or entity who directly competes with the Company, except in connection with an Acquisition of the Company by such a direct competitor.

5.5 Notices. All notices and other communications hereunder from the Company to the Holder, or vice versa, shall be deemed delivered and effective (i) when given personally, (ii) on the third (3<sup>rd</sup>) Business Day after being mailed by first-class registered or certified mail, postage prepaid, (iii) upon actual receipt if given by facsimile or electronic mail and such receipt is confirmed in writing by the recipient, or (iv) on the first Business Day following delivery to a reliable overnight courier service, courier fee prepaid, in any case at such address as may have been furnished to the Company or Holder, as the case may be, in writing by the Company or such Holder from time to time in accordance with the provisions of this Section 5.5. All notices to Holder shall be addressed as follows until the Company receives notice of a change of address in connection with a transfer or otherwise:

WestRiver Innovation Lending Fund VIII, L.P.  
c/o Chief Financial Officer  
3720 Carillon Point  
Kirkland, Washington 98033-7455  
Attention: Trent Dawson  
Telephone:  
Email:

With a copy (which shall not constitute notice) to:

Perkins Coie LLP  
1201 Third Avenue, Suite 4800  
Seattle, Washington 98101-3099  
Attention: David C. Clarke  
Telephone: (206) 359-8612  
Email: [dclarke@perkinscoie.com](mailto:dclarke@perkinscoie.com)

Notice to the Company shall be addressed as follows until Holder receives notice of a change in address:

Phathom Pharmaceuticals, Inc.  
Attn: Chief Financial Officer  
60 Willow Road, Suite 200  
Menlo Park, CA 940025  
Telephone:  
Facsimile:  
Email:

With a copy (which shall not constitute notice) to:

Latham & Watkins LLP  
12670 High Bluff Drive  
San Diego, CA 92103  
Attention: Cheston J. Larson  
Email: [cheston.larson@lw.com](mailto:cheston.larson@lw.com)  
Facsimile No.: (858) 523-5450

5.6 Waiver. This Warrant and any term hereof may be changed, waived, discharged or terminated (either generally or in a particular instance and either retroactively or prospectively) only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

5.7 Attorneys' Fees. In the event of any dispute between the parties concerning the terms and provisions of this Warrant, the party prevailing in such dispute shall be entitled to collect from the other party all costs incurred in such dispute, including reasonable attorneys' fees.

5.8 Counterparts; Facsimile/Electronic Signatures. This Warrant may be executed in counterparts, all of which together shall constitute one and the same agreement. Any signature page delivered electronically or by facsimile shall be binding to the same extent as an original signature page with regards to any agreement subject to the terms hereof or any amendment thereto.

5.9 Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of California, without giving effect to its principles regarding conflicts of law.

5.10 Headings. The headings in this Warrant are for purposes of reference only and shall not limit or otherwise affect the meaning of any provision of this Warrant.

5.11 Business Days. "**Business Day**" is any day that is not a Saturday, Sunday or a day on which banks in Washington are closed.

[Remainder of page left blank intentionally]

[Signature page follows]

IN WITNESS WHEREOF, the parties have caused this Warrant to Purchase Stock to be executed by their duly authorized representatives effective as of the Issue Date written above.

“COMPANY”

PHATHOM PHARMACEUTICALS, INC.

By: /s/ David A. Socks  
Name: David A. Socks  
(Print)  
Title: President, Chief Executive Officer, Treasurer,  
Secretary

“HOLDER”

WESTRIVER INNOVATION LENDING FUND VIII, L.P.

By: Loan Manager II, LLC, its general partner  
By: /s/ Trent Dawson  
Name: Trent Dawson  
Title: Chief Financial Officer



APPENDIX 1

NOTICE OF EXERCISE

1. The undersigned Holder hereby exercises its right to purchase \_\_\_\_\_ shares of the Common/Series \_\_\_\_\_ Preferred [circle one] Stock of \_\_\_\_\_ (the "Company") in accordance with the attached Warrant To Purchase Stock, and tenders payment of the aggregate Warrant Price for such shares as follows:

- check in the amount of \$\_\_\_\_ payable to order of the Company enclosed herewith
- Wire transfer of immediately available funds to the Company's account
- Cashless Exercise pursuant to Section 1.2 of the Warrant
- Other [Describe] \_\_\_\_\_

2. Please issue a certificate or certificates representing the Shares in the name specified below:

\_\_\_\_\_  
Holder's Name

\_\_\_\_\_

\_\_\_\_\_  
(Address)

3. By its execution below and for the benefit of the Company, Holder hereby restates each of the representations and warranties in Section 4 of the Warrant to Purchase Stock as of the date hereof.

HOLDER:

\_\_\_\_\_

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
(Date): \_\_\_\_\_

PHATHOM PHARMACEUTICALS, INC.

NOTE PURCHASE AGREEMENT

May 7, 2019

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#### Exhibits

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Exhibit H	–	Form of Spousal Consent

## NOTE PURCHASE AGREEMENT

**THIS NOTE PURCHASE AGREEMENT** (“Agreement”) is made as of May 7, 2019, by and among Phathom Pharmaceuticals, Inc., a Delaware corporation (the “Company”), and the lenders (each, a “Lender” and collectively, the “Lenders”) named on the Schedule of Lenders attached hereto (the “Schedule of Lenders”), and the Common Holders (as defined herein) (collectively, the “Parties”). Capitalized terms not otherwise defined in this Agreement shall have the meanings ascribed to them in Section 1 below.

**WHEREAS**, each of the Lenders intends to provide certain Consideration to the Company as described for each Lender on the Schedule of Lenders;

**WHEREAS**, the parties wish to provide for the sale and issuance of certain Notes in return for the provision by the Lenders of the Consideration to the Company; and

**WHEREAS**, the parties intend for the Company to issue in return for the Consideration one or more Notes that are convertible into shares of the Company’s Equity Securities.

### **NOW, THEREFORE, THE PARTIES HEREBY AGREE AS FOLLOWS:**

#### 1. Definitions.

(a) “Affiliate” shall mean, with respect to any Person, any other Person who, directly or indirectly, controls, is controlled by, or is under common control with such Person, including, without limitation, any general partner, managing member, officer or director of such Person or any venture capital fund or other investment fund now or hereafter existing that is controlled by one or more general partners or managing members of, or shares the same management or advisory company with, such Person.

(b) “Board” means the Board of Directors of the Company.

(c) “Common Holder” shall mean the holders of Common Stock listed on Exhibit C attached hereto (collectively, the “Common Holders”).

(d) “Common Stock” means shares of common stock, par value \$0.0001, of the Company.

(e) “Company Intellectual Property” means all patents, patent applications, registered and unregistered trademarks, trademark applications, registered and unregistered service marks, service mark applications, tradenames, copyrights, trade secrets, domain names, mask works, information and proprietary rights and processes, similar or other intellectual property rights, subject matter of any of the foregoing, tangible embodiments of any of the foregoing, licenses in, to and under any of the foregoing, and any and all such cases that are owned or used by or are necessary to the Company in the conduct of the Company’s business as now conducted and as presently proposed to be conducted.

(f) “Consideration” shall mean the amount of money paid by each Lender pursuant to this Agreement as shown on the Schedule of Lenders in the form of a check, wire transfer, cancellation or exchange of indebtedness, or any combination thereof.

(g) “Conversion Cap Price Per Share” shall mean the quotient obtained by dividing the following:

- (i) the Valuation Cap less the aggregate principal amount and accrued interest under the Notes, by
- (ii) the Pre-closing Capitalization.

(h) “Conversion Price” shall mean:

(i) with respect to a conversion pursuant to Section 2.2(a) below, the lesser of (A) the Discounted Conversion Price or (B) the Conversion Cap Price Per Share;

(ii) with respect to a conversion pursuant to Section 2.2(b) below, the Non-Qualified Discounted Conversion Price;

(iii) with respect to a conversion pursuant to Section 2.2(c) below, the Conversion Cap Price Per Share;

(iv) with respect to a conversion pursuant to Section 2.2(d) below, the lesser of (A) the Discounted Conversion Price or (B) the Conversion Cap Price Per Share; and

(v) with respect to a conversion pursuant to Section 2.2(e) below, the Conversion Cap Price Per Share.

(i) “Conversion Shares” shall, for purposes of determining the type of Equity Securities issuable upon conversion of the Notes, mean:

(i) if the Notes are converted to equity pursuant to Section 2.2(a) below, the Equity Securities issued in the Next Equity Financing;

(ii) if the Notes are converted to equity pursuant to Section 2.2(b) below, the Equity Securities issued in the Non-Qualified Next Equity Financing;

(iii) if the Notes are converted to equity pursuant to Section 2.2(c) below, shares of Common Stock;

(iv) if the Notes are converted to equity pursuant to Section 2.2(d) below, shares of Common Stock; and

(v) if the Notes are converted to equity pursuant to Section 2.2(e) below, shares of Common Stock.

(j) “Corporate Transaction” shall mean (A) the closing of the sale, transfer or other disposition of all or substantially all of this Company’s assets, (B) the consummation of the

merger or consolidation of this Company with or into another entity (except a merger or consolidation in which the holders of capital stock of this Company immediately prior to such merger or consolidation continue to hold at least 50% of the voting power of the capital stock of this Company or the surviving or acquiring entity in substantially identical proportions and with substantially identical rights, preferences, privileges and restrictions as existed immediately prior to such transaction), (C) the closing of the transfer (whether by merger, consolidation or otherwise), in one transaction or a series of related transactions, to a person or group of affiliated persons (other than an underwriter of this corporation's securities), of this Company's securities if, after such closing, such person or group of affiliated persons would hold 50% or more of the outstanding voting stock of this Company (or the surviving or acquiring entity) or (D) a liquidation, dissolution or winding up of this Company; provided, however, that a transaction shall not constitute a Corporate Transaction if its sole purpose is to change the state of this Company's incorporation or to create a holding company that will be owned in substantially the same proportions by the persons who held this Company's securities immediately prior to such transaction. Notwithstanding the prior sentence, the sale of shares of Preferred Stock in a bona fide financing transaction for the purposes of raising operating capital to bona fide institutional, venture capital, private equity and similar investors shall not be deemed a "Corporate Transaction."

(k) "Discounted Conversion Price" shall equal 80% of the New Purchase Price.

(l) "Equity Securities" shall mean the Company's Common Stock or Preferred Stock or any securities conferring the right to purchase the Company's Common Stock or Preferred Stock or securities directly or indirectly convertible into, or exchangeable for (with or without additional consideration), the Company's Common Stock or Preferred Stock.

(m) "Exchange Act" shall mean the Securities Exchange Act of 1934, as amended.

(n) "Form S-3" shall mean such form under the Securities Act as in effect on the date hereof or any registration form under the Securities Act subsequently adopted by the SEC that permits inclusion or incorporation of substantial information by reference to other documents filed by the Company with the SEC.

(o) "Frazier" shall mean Frazier Life Sciences IX, L.P.

(p) "Free Writing Prospectus" shall mean a free-writing prospectus, as defined in Rule 405.

(q) "Fully Diluted Capital Stock" shall mean the fully-diluted outstanding capital stock of the Company, including (i) outstanding shares of Common Stock (i) outstanding shares of Preferred Stock (on an as-converted basis), (ii) outstanding vested and unvested stock options and all shares of Common Stock held in reserve in any of the Company's equity incentive plans that are not then yet allocated for outstanding and unexercised stock options, (iii) outstanding warrants (on an as-exercised basis), and (iv) other outstanding convertible securities (on an as-converted basis), including the Notes.

(r) “Holder” shall mean any Person owning or having the right to acquire Registrable Securities or any assignee thereof in accordance with Section 7.5(j) of this Agreement.

(s) “Initial Public Offering” shall mean the closing of the issuance and sale of shares of Equity Securities of the Company in the Company’s first firm-commitment underwritten public offering pursuant to an effective registration statement under the Securities Act in which the gross cash proceeds to the Company (before underwriting discounts, commissions and fees) are at least \$75,000,000 (excluding the aggregate amount of debt securities converted into Equity Securities upon conversion of convertible indebtedness, including, without limitation, the Notes converted pursuant to Section 2.2 below) or such lesser amount as may be approved by the Requisite Noteholders.

(t) “Key Employee” means any executive-level employee (including division director and vice president-level positions) as well as any employee or consultant who either alone or in concert with others develops, invents, programs or designs any Company Intellectual Property.

(u) “Material Adverse Effect” means a material adverse effect on the business, assets (including intangible assets), liabilities, financial condition, property, prospects or results of operations of the Company.

(v) “Maturity Date” shall mean May 7, 2020.

(w) “New Purchase Price” shall mean the price paid per share in cash for Equity Securities by the investors in the Initial Public Offering, Next Equity Financing or the Non-Qualified Next Equity Financing, as applicable, other than as a result of conversion of indebtedness.

(x) “Next Equity Financing” shall mean the next sale (or series of related sales) by the Company of its Equity Securities following the date of this Agreement primarily for bona fide equity financing purposes from which the Company receives gross proceeds of not less than \$75,000,000 (excluding the aggregate amount of debt securities converted into Equity Securities upon conversion of convertible indebtedness, including, without limitation, the Notes converted pursuant to Section 2.2 below).

(y) “Non-Qualified Discounted Conversion Price” shall equal the Discounted Conversion Price unless otherwise agreed between the Company and Requisite Noteholders.

(z) “Non-Qualified Next Equity Financing” shall mean the next sale (or series of related sales) by the Company of its Equity Securities following the date of this Agreement primarily for bona fide equity financing purposes from which the Company receives gross proceeds of less than \$75,000,000 (excluding the aggregate amount of debt securities converted into Equity Securities upon conversion of convertible indebtedness, including, without limitation, the Notes converted pursuant to Section 2.2 below).

(aa) “Notes” shall mean the one or more promissory notes issued to each Lender pursuant to Section 2.1 below, the form of which is attached hereto as Exhibit A.



(bb) “Person” shall mean any individual, corporation, partnership, trust, limited liability company, association or other entity.

(cc) “Pre-closing Capitalization” shall mean the sum determined immediately prior to the applicable conversion of the Notes of:

(i) the number of shares of Common Stock of the Company then outstanding immediately prior to the closing of the applicable conversion event, plus

(ii) the number of shares of Common Stock issuable, directly or indirectly, upon the exercise or conversion of exercisable or convertible securities then outstanding immediately prior to the closing of the applicable conversion event, plus

(iii) the number of shares of capital stock (determined on an as-converted to Common Stock basis) reserved for issuance under the Company’s equity incentive plans (net of any such shares underlying securities included in clause (ii) of this definition) including, in the event of a conversion of the Notes in the Next Equity Financing, any increase in the number of such reserved shares expressly required by the terms and conditions of such Next Equity Financing.

(dd) “Preferred Stock” means shares of preferred stock of the Company.

(ee) “register,” “registered,” and “registration” shall refer to a registration effected by preparing and filing a registration statement or similar document in compliance with the Securities Act, and the declaration or ordering of effectiveness of such registration statement or document.

(ff) “Registrable Securities” shall mean (i) the Equity Securities issued or issuable, directly or indirectly, upon conversion of the Notes in accordance with the terms of this Agreement, excluding in all cases, however, any Registrable Securities sold by a Person in a transaction in which his, her or its rights under Section 7.5 of this Agreement are not assigned, (ii) any shares of Common Stock held by Frazier and (iii) any shares of Common Stock (including shares of Common Stock issuable upon the exercise or conversion of any securities exercisable or convertible into shares of Common Stock) held by Takeda. In addition, the number of shares of Registrable Securities outstanding shall equal the aggregate of the number of shares of Common Stock outstanding that are, and the number of shares of Common Stock issuable, directly or indirectly, pursuant to then exercisable or convertible securities that are, Registrable Securities.

(gg) “Requisite Noteholders” shall mean the holders of not less than sixty percent (60%) in interest of the aggregate outstanding principal amount of the Notes, including Frazier.

(hh) “Rule 144” shall mean Rule 144 under the Securities Act.

(ii) “Rule 144(b)(1)(i)” shall mean subsection (b)(1)(i) of Rule 144 under the Securities Act as it applies to Persons who have held shares for more than one (1) year.

(jj) “Rule 405” shall mean Rule 405 under the Securities Act.

(kk) “Sale of the Company” shall mean either: (a) a transaction or series of related transactions in which a person, or a group of related persons, acquires from stockholders of the Company shares representing more than fifty percent (50%) of the outstanding voting power of the Company (a “Stock Sale”) or (b) a Corporate Transaction.

(ll) “SEC” shall mean the Securities and Exchange Commission.

(mm) “Securities Act” shall mean the Securities Act of 1933, as amended.

(nn) “Shares” shall mean and include any securities of the Company the holders of which are entitled to vote for one or more members of the Board, including without limitation, all shares of Common Stock, by whatever name called, now owned or subsequently acquired by a stockholder, however acquired, whether through stock splits, stock dividends, reclassifications, recapitalizations, similar events or otherwise.

(oo) “Takeda” shall mean Takeda Pharmaceutical Company Limited.

(pp) “Takeda Agreements” shall mean the Takeda License, Takeda Supply Agreement and Takeda Equity Documents.

(qq) “Takeda License” shall mean that certain License Agreement by and between the Company and Takeda dated May 7, 2019.

(rr) “Takeda Equity Documents” shall mean that certain Stock Issuance Agreement and Warrant to Purchase Shares of Common Stock by and between the Company and Takeda and the other requisite parties thereto.

(ss) “Takeda Supply Agreement” shall mean that certain Clinical Supply Agreement by and between the Company and Takeda dated May 7, 2019.

(tt) “Transfer” shall mean any sale, assignment, encumbrance, hypothecation, pledge, conveyance in trust, gift, transfer by bequest, devise or descent, or other transfer or disposition of any kind, including, without limitation, transfers pursuant to divorce or legal separation, transfers to receivers, levying creditors, trustees or receivers in bankruptcy proceedings or general assignees for the benefit of creditors, whether voluntary, involuntarily or by operation of law, directly or indirectly, of any of the Equity Securities.

(uu) “Valuation Cap” shall mean \$500,000,000.

## 2. Terms of the Convertible Notes.

2.1 Issuance of Convertible Notes. In return for the Consideration paid by each Lender, the Company shall sell and issue to such Lender one or more Notes. Each Note shall have a principal balance equal to the Consideration paid by such Lender for the Note, as set forth in the Schedule of Lenders. Each Note shall be convertible into Conversion Shares pursuant to Section 2.2 below.

## 2.2 Right to Convert Notes.

(a) Next Equity Financing. The then outstanding principal and unpaid accrued interest of each Note shall be automatically converted into Conversion Shares upon the closing of the Next Equity Financing. Notwithstanding the foregoing, accrued interest on each Note may be paid in cash upon mutual agreement of the Company and the applicable Lender. The number of Conversion Shares to be issued upon such conversion shall be equal to the quotient obtained by dividing (i) the outstanding principal and unpaid accrued interest on a Note to be converted on the date of conversion by (ii) the Conversion Price. At least twenty (20) calendar days prior to the closing of the Next Equity Financing, the Company shall notify the holder of each Note in writing of the terms (in reasonable summary detail) under which the Equity Securities will be sold in such financing. Subject to Section 8.12 below, the issuance of Conversion Shares pursuant to the conversion of each Note shall otherwise be upon and subject to the same terms and conditions applicable to the Equity Securities sold in the Next Equity Financing.

(b) Non-Qualified Next Equity Financing. The then outstanding principal and unpaid accrued interest of each Note may be converted, at the option of the holder thereof into Conversion Shares upon the closing of the Non-Qualified Next Equity Financing. Notwithstanding the foregoing, accrued interest on each Note may be paid in cash upon mutual agreement of the Company and the applicable Lender. The number of Conversion Shares to be issued upon such conversion shall be equal to the quotient obtained by dividing (i) the outstanding principal and unpaid accrued interest on a Note to be converted on the date of conversion by (ii) the Conversion Price. At least twenty (20) calendar days prior to the closing of the Non-Qualified Next Equity Financing, the Company shall notify the holder of each Note in writing of the terms (in reasonable summary detail) under which the Equity Securities will be sold in such financing. Subject to Section 8.12 below, the issuance of Conversion Shares pursuant to the conversion of each Note shall otherwise be upon and subject to the same terms and conditions applicable to the Equity Securities sold in the Non-Qualified Next Equity Financing. If a holder elects to convert its Note into Conversion Shares in connection with the Non-Qualified Next Equity Financing, such holder shall inform the Company of its election within twenty (20) calendar days after such notice is effectively given by the Company pursuant to Section 8.5 hereof. In the event that a holder fails to inform the Company of its election within such twenty (20) calendar day period, such holder's Note shall thereafter cease to be convertible into Conversion Shares to be issued pursuant to the Non-Qualified Next Equity Financing; provided, however, such Note shall continue to accrue interest at the interest rate applicable to such Note until the redemption thereof.

(c) Treatment upon Maturity. If the Next Equity Financing, Non-Qualified Next Equity Financing pursuant to which such Note has converted, Corporate Transaction or Initial Public Offering has not occurred on or before the Maturity Date, the principal and unpaid accrued interest of each Note may be converted, at any time following the Maturity Date, at the option of the holder thereof, into Conversion Shares; provided that each Note, to the extent such Note has not already been converted into Conversion Shares at the option of the holder thereof, shall be due and payable in cash following the Maturity Date solely upon demand of the Requisite Noteholders. The number of Conversion Shares to be issued upon conversion shall be equal to the quotient obtained by dividing (i) the outstanding principal and

unpaid accrued interest due on a Note to be converted on the date of the conversion by (ii) the Conversion Price. Notwithstanding anything to contrary in this Section 2.2(c), in the event that a Note is not converted pursuant to this Section 2.2(c) and a Next Equity Financing, Non-Qualified Next Equity Financing pursuant to which such Note has converted, Corporate Transaction or Initial Public Offering has not occurred on or before the third anniversary of the Initial Closing, then on such third anniversary, the outstanding principal and accrued interest shall become immediately due and payable.

(d) Initial Public Offering. Notwithstanding subsections (a), (b) or (c) above, in the event of an Initial Public Offering prior to full payment of a Note or the prior conversion of a Note (as provided herein), all outstanding principal and unpaid accrued interest due on such Note shall be converted into Conversion Shares immediately prior to the closing of the Initial Public Offering. The number of Conversion Shares to be issued upon conversion shall be equal to the quotient, obtained by dividing (x) the outstanding principal and unpaid accrued interest due on a Note to be converted on the date of the conversion by (y) the Conversion Price.

(e) Corporate Transaction. In the event of a Corporate Transaction prior to full payment of a Note or the prior conversion of a Note (as provided herein), the greater of (i) an amount equal to two times (2x) the then outstanding principal and accrued interest due on such Note or (ii) an amount equal to the proceeds (including, for the avoidance of doubt, any escrowed or contingent consideration payable to stockholders in such Corporate Transaction) which would be payable assuming all outstanding principal and unpaid accrued interest due on such Note were converted into Conversion Shares immediately prior to the closing of the Corporate Transaction shall be due and payable in full prior to the closing of the Corporate Transaction. The number of Conversion Shares which would be issued upon conversion shall be equal to the quotient, obtained by dividing (x) the outstanding principal and unpaid accrued interest due on a Note to be converted on the date of the conversion by (y) the Conversion Price.

(f) No Fractional Shares. Upon the conversion of a Note into Conversion Shares, in lieu of any fractional shares to which the holder of the Note would otherwise be entitled, the Company shall pay the Note holder cash equal to such fraction multiplied by the Conversion Price.

(g) Mechanics of Conversion. The Company shall not be required to issue or deliver the Conversion Shares with respect to any Note until (i) the holder of such Note has (A) surrendered such Note to the Company or (B) provided the Company evidence reasonably satisfactory to the Company of the ownership of and the loss, theft, destruction or mutilation of such Note, including but not limited to an indemnity agreement reasonably satisfactory in form and amount to the Company, and (ii) (A) the closing of the applicable Next Equity Financing, Non-Qualified Next Equity Financing pursuant to which such Note is converted, Initial Public Offering or Corporate Transaction, or (B) the Maturity Date in the event such Note converts pursuant to Section 2.2(c). Additionally, before any Note holder shall be entitled to convert such holder's Note into Conversion Shares pursuant to Section 2.2(b), such holder shall give written notice to the Company of the election to convert such Note into Conversion Shares.

### 3. Closing Mechanics.

3.1 Initial Closing. The closing (the “Initial Closing”) of the purchase of the Notes in return for the Consideration paid by each Lender (as set forth on the Schedule of Lenders) shall take place remotely via teleconference, e-mail or likewise at 10 a.m., on May 7, 2019, or at such other time and place as the Company and Lenders purchasing a majority in interest of the aggregate principal amount of the Notes to be sold at the Initial Closing agree upon orally or in writing. At the Initial Closing, each Lender shall deliver the Consideration to the Company set forth opposite such Lender’s name on the Schedule of Lenders and the Company shall deliver to each Lender one or more executed Notes in return for the respective Consideration provided to the Company. In the event that payment by a Lender is made, in whole or in part, by cancellation or exchange of indebtedness, then such Lender shall surrender to the Company for cancellation or exchange at the Initial Closing any evidence of such indebtedness.

3.2 Second Closing. The second closing (the “Second Closing”) of the purchase of the Notes in return for the Consideration paid by each Lender (as set forth on the Schedule of Lenders) shall take place remotely via teleconference, e-mail or likewise at any time on or before the 20<sup>th</sup> day following the Initial Closing, or at such other time and place as the Company and Lenders purchasing a majority in interest of the aggregate principal amount of the Notes to be sold at the Second Closing agree upon orally or in writing; provided, that such sale shall not take place later than the earlier to occur of the date of a Next Equity Financing, Non-Qualified Next Equity Financing, Initial Public Offering or Corporate Transaction (whichever occurs earliest) is consummated. At the Second Closing, each Lender shall deliver the Consideration to the Company set forth opposite such Lender’s name on the Schedule of Lenders and the Company shall deliver to each Lender one or more executed Notes in return for the respective Consideration provided to the Company. Each of the Initial Closing and the Second Closing shall be referred to herein as the “Closing.”

3.3 Conditions of Lenders’ Obligations at Closing. The obligations of each Lender under Section 3.1 or Section 3.2 of this Agreement are subject to the fulfillment on or before such Closing of each of the following conditions, the waiver of which shall not be effective against any Lender who does not consent thereto:

(a) Representations and Warranties. The representations and warranties of the Company contained in Section 4 shall be true on and as of the Initial Closing.

(b) Proceedings and Documents. All corporate and other proceedings in connection with the transactions contemplated at the Closing and all documents incident thereto shall be reasonably satisfactory in form and substance to the special counsel for the Lenders, and they shall have received all such counterpart original and certified or other copies of such documents as they may reasonably request.

(c) Board of Directors. On or prior to the Initial Closing, the directors of the Company shall be Messrs. David Socks, James Topper, Tadataka Yamada, M.D. and Jon Edwards and there shall be three vacancies on the Board.

(d) Management Rights Letter. On or prior to the Initial Closing, the Company and each Lender that has requested one shall have entered into a Management Rights Letter in the form attached hereto as Exhibit D.

(e) Indemnification Agreement. The Company and each member of the Board shall have entered into an Indemnification Agreement in the form attached hereto as Exhibit E.

(f) Absence of Defaults. No Event of Default shall have occurred and be continuing.

(g) Issuance of Notes. Such Lender shall have received from the Company a duly executed Note as required by this Agreement.

(h) Takeda License. The Takeda License (and related Takeda Equity Documents and the Takeda Supply Agreement) in form reasonably acceptable to Frazier shall have been executed, and an executed copy shall have been delivered to each Lender.

3.4 Conditions of the Company's Obligations at Closing. The obligations of the Company to each Lender under this Agreement are subject to the fulfillment on or before the Closing of each of the following conditions by that Lender:

(a) Representations and Warranties. The representations and warranties of the Lenders contained in Section 5 shall be true on and as of the Closing.

(b) Payment of Consideration. The Lender shall have delivered the Consideration specified in Section 3.1 or Section 3.2, as applicable.

4. Representations and Warranties of the Company. The Company hereby represents and warrants to each Lender that, except as set forth on the Disclosure Schedule attached as Exhibit F to this Agreement, which exceptions shall be deemed to be part of the representations and warranties made hereunder, the following representations are true and complete as of the date of the Initial Closing, except as otherwise indicated. The Disclosure Schedule shall be arranged in sections corresponding to the numbered and lettered sections and subsections contained in this Section 4, and the disclosures in any section or subsection of the Disclosure Schedule shall qualify other sections and subsections in this Section 4 only to the extent it is readily apparent from a reading of the disclosure that such disclosure is applicable to such other sections and subsections.

4.1 Organization, Good Standing and Qualification. The Company is a corporation duly incorporated and organized, validly existing, and in good standing under the laws of the State of Delaware and has all requisite corporate power and authority to own and operate its properties and assets and to carry on its business as now conducted. The Company is duly qualified to transact business and is in good standing in each jurisdiction in which the failure to so qualify would have a Material Adverse Effect.

4.2 Capitalization.

(a) The authorized capital of the Company consists, immediately prior to the Initial Closing, of 10,000,000 shares of Common Stock, 5,470,600 of which are issued and outstanding immediately prior to the Initial Closing. All of the outstanding shares of Common Stock have been duly authorized, are fully paid and nonassessable and were issued in compliance with all applicable federal and state securities laws.

(b) The Company has not authorized any shares of Preferred Stock.

(c) 1,029,400 shares of Common Stock are authorized for issuance to employees, consultants and directors pursuant to the Company's 2019 Equity Incentive Plan, none of which are subject to outstanding option awards.

(d) Section 4.2(d) of the Disclosure Schedule sets forth the capitalization of the Company immediately following the Initial Closing including the number of shares of the following: (i) issued and outstanding Common Stock, including, with respect to restricted Common Stock, vesting schedule and repurchase price; and (ii) warrants or stock purchase rights, if any. Except for (A) the conversion privileges of the Notes to be issued under this Agreement, (B) the rights provided in Section 7.2 of this Agreement, and (C) the securities and rights described in Section 4.2(d) of the Disclosure Schedule, there are no outstanding options, warrants, rights (including conversion or preemptive rights and rights of first refusal or similar rights) or agreements, orally or in writing, to purchase or acquire from the Company any shares of Common Stock, or any securities convertible into or exchangeable for shares of Common Stock. All outstanding shares of the Company's Common Stock and all shares of the Company's Common Stock underlying outstanding options are subject to (i) a right of first refusal in favor of the Company upon any proposed transfer (other than transfers for estate planning purposes); and (ii) a lock-up or market standoff agreement of not less than one hundred eighty (180) days following the Initial Public Offering pursuant to a registration statement filed with the SEC under the Securities Act.

(e) Unless otherwise set forth in Section 4.2(d) of the Disclosure Schedule, none of the Company's stock purchase agreements contains a provision for acceleration of vesting (or lapse of a repurchase right) or other changes in the vesting provisions or other terms of such agreement or understanding upon the occurrence of any event or combination of events. The Company has never adjusted or amended the exercise price of any stock options previously awarded, whether through amendment, cancellation, replacement grant, repricing, or any other means. The Company has no obligation (contingent or otherwise) to purchase or redeem any of its capital stock.

4.3 Subsidiaries. The Company does not currently own or control, directly or indirectly, any interest in any other corporation, partnership, trust, joint venture, limited liability company, association, or other business entity. The Company is not a participant in any joint venture, partnership or similar arrangement.

4.4 Authorization. Except for the authorization and issuance of the shares issuable, directly or indirectly, in connection with the conversion of the Notes, all corporate action has been taken on the part of the Company, its officers, directors and stockholders necessary for the authorization, execution, delivery and performance of this

Agreement and the Notes. Except as may be limited by applicable bankruptcy, insolvency, reorganization, or similar laws relating to or affecting the enforcement of creditors' rights, the Company has taken all corporate action required to make all of the obligations of the Company reflected in the provisions of this Agreement and the Notes, the valid and enforceable obligations they purport to be.

4.5 Compliance with Other Instruments. The Company is not in violation or default (i) of any provisions of its Certificate of Incorporation or Bylaws, (ii) of any instrument, judgment, order, writ or decree, (iii) under any note, indenture or mortgage, or (iv) under any lease, agreement, contract or purchase order to which it is a party or by which it is bound that is required to be listed on the Disclosure Schedule, or (v) to its knowledge, of any provision of federal or state statute, rule or regulation applicable to the Company, the violation of which would have a Material Adverse Effect. The execution, delivery and performance of this Agreement and the issuance and delivery of the Notes and the Conversion Shares, and any shares of Common Stock directly or indirectly issued in respect thereof, and the consummation of the transactions contemplated hereby and thereby will not result in any such violation or be in conflict with or constitute, with or without the passage of time and giving of notice, either (i) a default under any such provision, instrument, judgment, order, writ, decree, contract or agreement; or (ii) an event which results in the creation of any lien, charge or encumbrance upon any assets of the Company or the suspension, revocation, forfeiture, or nonrenewal of any material permit or license applicable to the Company.

4.6 Governmental Consents and Filings. Assuming the accuracy of the representations made by the Lenders in Section 5 of this Agreement, no consent, approval, order or authorization of, or registration, qualification, designation, declaration or filing with, any federal, state or local governmental authority is required on the part of the Company in connection with the consummation of the transactions contemplated by this Agreement, other than a Form D or other qualifications or filings under applicable federal and state securities laws, which qualification or filings will be made on a timely basis.

4.7 Litigation. There is no claim, action, suit, proceeding, arbitration, complaint, charge or investigation pending or to the Company's knowledge, currently threatened in writing (i) against the Company or any officer, director or Key Employee of the Company arising out of their employment or board relationship with the Company; (ii) that questions the validity of this Agreement or the Notes or the right of the Company to enter into them, or to consummate the transactions contemplated hereby or thereby; or (iii) to the Company's knowledge, that would reasonably be expected to have, either individually or in the aggregate, a Material Adverse Effect. Neither the Company nor, to the Company's knowledge, any of its officers, directors or Key Employees is a party or is named as subject to the provisions of any order, writ, injunction, judgment or decree of any court or government agency or instrumentality (in the case of officers, directors or Key Employees, such as would affect the Company). There is no action, suit, proceeding or investigation by the Company pending or which the Company intends to initiate. The foregoing includes, without limitation, actions, suits, proceedings or investigations pending or threatened in writing (or any basis therefor known to the Company) involving the prior employment of any of the Company's employees, their services provided in connection with the Company's business, any information or techniques allegedly proprietary to any of their former employers or their obligations under any agreements with prior employers.



**4.8 Intellectual Property.** The Company owns or possesses or can acquire on commercially reasonable terms sufficient legal rights to all Company Intellectual Property without any known conflict with, or infringement of, the rights of others, including prior employees or consultants, or academic or medical institutions with which any of them may be affiliated now or may have been affiliated in the past. To the Company's knowledge, no product or service marketed or sold (or proposed to be marketed or sold) by the Company violates or will violate any license or infringes or will infringe any intellectual property rights of any other party in the absence of a license to such intellectual property rights. Other than with respect to the Takeda Agreements or commercially available software products under standard end-user object code license agreements, there are no outstanding options, licenses, agreements, claims, encumbrances or shared ownership interests of any kind relating to the Company Intellectual Property, nor is the Company bound by or a party to any options, licenses or agreements of any kind with respect to the patents, trademarks, service marks, trade names, copyrights, trade secrets, licenses, information, proprietary rights and processes of any other Person. The Company has not received any communications alleging that the Company has infringed, or by conducting its business, would infringe any of the patents, trademarks, service marks, tradenames, copyrights, trade secrets, mask works or other proprietary rights or processes of any other Person. To the Company's knowledge, no third party is infringing any of the Company Intellectual Property. The Company has obtained and possesses valid licenses to use all of the software programs present on the computers and other software-enabled electronic devices that it owns or leases or that it has otherwise provided to its employees for their use in connection with the Company's business. To the Company's knowledge, it will not be necessary to use any inventions of any of its employees or consultants (or Persons it currently intends to hire) made prior to their employment by the Company that are not otherwise the subject of the Takeda Agreements, including prior employees or consultants, or academic or medical institutions with which any of them may be affiliated now or may have been affiliated in the past. Each employee and consultant has assigned to the Company all intellectual property rights that he, she or it solely or jointly conceived, reduced to practice, developed or made during the period of his, her or its employment or consulting relationship with the Company that (a) relate, at the time of conception, reduction to practice, development, or making of such intellectual property right, to the Company's business as then conducted or as then proposed to be conducted, (b) were developed on any amount of the Company's time or with the use of any of the Company's equipment, supplies, facilities or information or (c) resulted from the performance of services for the Company. Section 4.8 of the Disclosure Schedule lists all patents, patent applications, registered trademarks, trademark applications, service marks, service mark applications, tradenames, registered copyrights, and licenses to and under any of the foregoing, in each case owned by the Company. The Company has not embedded any open source, copyleft or community source code in any of its products generally available or in development, including but not limited to any libraries or code licensed under any General Public License, Lesser General Public License or similar license arrangement. For purposes of this Section 4.8, the Company shall be deemed to have knowledge of a patent right if the Company has actual knowledge of the patent right or would be found to be on notice of such patent right as determined by reference to United States patent laws. No government funding, facilities of a university, college, other educational institution or research center, was used in the development

of any Company Intellectual Property that is owned by the Company. To the Company's knowledge, no Person who was involved in, or who contributed to, the creation or development of any Company Intellectual Property, has performed services for the government, university, college, or other educational institution or research center in a manner that would adversely affect the Company's rights in the Company Intellectual Property.

4.9 Property. The property and assets that the Company owns are free and clear of all mortgages, deeds of trust, liens, loans and encumbrances, except for statutory liens for the payment of current taxes that are not yet delinquent and encumbrances and liens that arise in the ordinary course of business and do not materially impair the Company's ownership or use of such property or assets. With respect to the property and assets it leases, the Company is in compliance with such leases and holds a valid leasehold interest free of any liens, claims or encumbrances other than those of the lessors of such property or assets. The Company does not own any real property.

4.10 Absence of Undisclosed Liabilities. The Company does not have any liability or obligation of any nature, whether accrued, absolute, contingent or otherwise, asserted or unasserted, known or unknown, in any case which has, or is reasonably likely to have, a Material Adverse Effect. The Company has not assumed, guaranteed, endorsed or otherwise become directly or contingently liable on or for any indebtedness of any other Person.

4.11 Valid Issuance of Conversion Shares. The Conversion Shares to be issued, sold and delivered upon conversion of the Notes and any shares of Common Stock issued or issuable in respect thereof, will be duly and validly issued, fully paid and nonassessable and, based in part upon the representations and warranties of the Lenders in this Agreement, will be issued in compliance with all applicable federal and state securities laws.

4.12 Committee on Foreign Investment. The Company is not currently a U.S. business that produces, designs, tests, manufactures, fabricates, or develops a critical technology that is (a) utilized in connection with the U.S. business's activity in one or more pilot program industries, or (b) designed by the U.S. business specifically for use in one or more pilot program industries, as these terms are defined at 31 C.F.R. Parts 800 and 801.

4.13 Disclosure. The Company has made available to the Lenders all the information reasonably available to the Company that the Lenders have requested for deciding whether to purchase the Notes. No representation or warranty of the Company contained in this Agreement, as qualified by the Disclosure Schedule, and no certificate furnished or to be furnished to the Lenders at the Initial Closing contains any untrue statement of a material fact or, to the Company's knowledge, omits to state a material fact necessary in order to make the statements contained herein or therein not misleading in light of the circumstances under which they were made. It is understood that this representation is qualified by the fact that the Company has not delivered to the Lenders, and has not been requested to deliver, a private placement or similar memorandum or any written disclosure of the types of information customarily furnished to purchasers of securities.

5. Representations, Warranties and Additional Agreements of the Lenders.

5.1 Representations and Warranties of the Lenders. In connection with the transactions provided for herein, each Lender hereby represents and warrants to the Company that:

(a) Authorization. This Agreement constitutes such Lender's valid and legally binding obligation, enforceable in accordance with its terms, except as may be limited by (i) applicable bankruptcy, insolvency, reorganization, or similar laws relating to or affecting the enforcement of creditors' rights and (ii) laws relating to the availability of specific performance, injunctive relief or other equitable remedies. Each Lender represents that it has full power and authority to enter into this Agreement.

(b) Purchase Entirely for Own Account. Each Lender acknowledges that this Agreement is made with Lender in reliance upon such Lender's representation to the Company that the Notes, the Conversion Shares, and any Common Stock issuable, directly or indirectly, upon conversion of the Conversion Shares (collectively, the "Securities") will be acquired for investment for Lender's own account, not as a nominee or agent, and not with a view to the resale or distribution of any part thereof, and that such Lender has no present intention of selling, granting any participation in, or otherwise distributing the same. By executing this Agreement, each Lender further represents that such Lender does not have any contract, undertaking, agreement or arrangement with any person to sell, transfer or grant participations to such person or to any third person, with respect to the Securities.

(c) Disclosure of Information. Each Lender acknowledges that it has received all the information it considers necessary or appropriate for deciding whether to acquire the Securities. Each Lender further represents that it has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of the Securities.

(d) Investment Experience. Each Lender is an investor in securities of companies in the development stage and acknowledges that it is able to fend for itself, can bear the economic risk of its investment and has such knowledge and experience in financial or business matters that it is capable of evaluating the merits and risks of the investment in the Securities. If other than an individual, each Lender also represents it has not been organized solely for the purpose of acquiring the Securities.

(e) Accredited Investor. Each Lender is an "accredited investor" within the meaning of Rule 501 of Regulation D promulgated under the Securities Act, as presently in effect ("Rule 501"). If such Lender has been organized for the purpose of acquiring the Securities, each holder of securities of such Lender, or holder of any right to acquire such securities or any of the Securities, is an "accredited investor" pursuant to Rule 501.

(f) Restricted Securities. Each Lender understands that the Securities are characterized as "restricted securities" under the federal securities laws inasmuch as they are being acquired from the Company in a transaction not involving a public offering and that under such laws and applicable regulations such securities may be resold without registration under the

Securities Act only in certain limited circumstances. Each Lender represents that it is familiar with Rule 144 and understands the resale limitations imposed thereby and by the Securities Act.

5.2 Further Limitations on Disposition. Without in any way limiting the representations and warranties set forth above, each Lender further agrees not to make any disposition of all or any portion of the Securities unless and until the transferee has agreed in writing for the benefit of the Company to be bound by this Section 5 and Section 8.11 and the transferring Lender has notified the Company of the proposed disposition and has furnished the Company with a detailed statement of the circumstances surrounding the proposed disposition. It is agreed that the Company will not require opinions of counsel for transactions made pursuant to Rule 144.

Lender shall not make any disposition of any of the Securities to any person that would result in the Company being ineligible to rely on Rule 506 of Regulation D in regards to the issuance of the Securities or any subsequent issuance of securities of the Company, as such in either case is in good faith determined by the Company.

Notwithstanding anything herein to the contrary, each Lender may freely transfer the Securities to its Affiliates without restriction.

5.3 Legends. It is understood that the Securities may bear the following legend:

“THESE SECURITIES HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE “ACT”). THEY MAY NOT BE SOLD, OFFERED FOR SALE, PLEDGED, HYPOTHECATED, OR OTHERWISE TRANSFERRED EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE ACT OF 1933 OR SUCH TRANSFER IS EXEMPT FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.”

5.4 Bad Actor Representations and Covenants. Each Lender that is among the Persons identified in Rule 506(d)(1) of Regulation D (a “**Covered Person**”) hereby represents and warrants to the Company that such Lender has not been convicted of any of the felonies or misdemeanors or has been subject to any of the orders, judgments, decrees or other conditions set forth in Rule 506(d) of Regulation D promulgated by the SEC, which are excerpted in their current form on Exhibit B. Each Lender covenants that if it is then a Covered Person to provide immediate written notice to the Company in the event such Lender is convicted of any felony or misdemeanor or becomes subject to any order, judgment, decree or other condition set forth in Rule 506(d) of Regulation D promulgated by the SEC, as may be amended from time to time. Each Lender covenants to provide such information to the Company as the Company may reasonably request in order to comply with the disclosure obligations set forth in Rule 506(e) of Regulation D promulgated by the SEC, as may be amended from time to time.

5.5 Exculpation Among Lenders. Each Lender acknowledges that it is not relying upon any person, firm or corporation, other than the Company, in making its

investment or decision to invest in the Company. Each Lender agrees that no Lender nor the respective controlling persons, officers, directors, partners, agents, or employees of any Lender shall be liable to any other Lender for any action heretofore or hereafter taken or omitted to be taken by any of them in connection with the purchase of the Securities.

6. Defaults and Remedies.

6.1 Events of Default. Any of the following events shall be considered an “Event of Default” with respect to each Note:

(a) The Company shall default in the payment of any part of the principal or unpaid accrued interest on the Note, (i) for more than two (2) days after demand for payment therefor by the Requisite Noteholders following the Note becoming due and payable pursuant to the terms and conditions of the Notes, or (ii) after a date fixed by acceleration or otherwise;

(b) The Company shall make an assignment for the benefit of creditors, or shall admit in writing its inability to pay its debts as they become due, or shall file a voluntary petition for bankruptcy, or shall file any petition or answer seeking for itself any reorganization, arrangement, composition, readjustment, dissolution or similar relief under any present or future statute, law or regulation, or shall file any answer admitting the material allegations of a petition filed against the Company in any such proceeding, or shall seek or consent to or acquiesce in the appointment of any trustee, receiver or liquidator of the Company, or of all or any substantial part of the properties of the Company, or the Company or its respective directors or majority stockholders shall take any action looking to the dissolution or liquidation of the Company;

(c) Within thirty (30) days after the commencement of any proceeding against the Company seeking any bankruptcy reorganization, arrangement, composition, readjustment, liquidation, dissolution or similar relief under any present or future statute, law or regulation, such proceeding shall not have been dismissed, or within thirty (30) days after the appointment without the consent or acquiescence of the Company of any trustee, receiver or liquidator of the Company or of all or any substantial part of the properties of the Company, such appointment shall not have been vacated;

(d) Within thirty (30) days after the Company becomes involved in litigation that threatens to materially and adversely affect the Company’s business, operations, assets, results of operations or prospects, if the Company’s involvement has not terminated by such date in a manner that does not and could not reasonably be expected to materially and adversely affect the Company’s business, operations, assets, results of operations or prospects;

(e) Any default or defined event of default that has not otherwise been cured or forgiven within fifteen (15) days after written notice to the Company from the applicable lender of such default or defined event of default shall occur under any agreement to which the Company is a party that evidences indebtedness for borrowed money by the Company (excluding trade payables) of \$50,000 or more; or

(f) The Company shall fail to observe or perform any other obligation to be observed or performed by it under this Agreement or the Notes within fifteen (15) days after written notice from the Requisite Noteholders to perform or observe such obligation.

6.2 Remedies. Upon the occurrence of an Event of Default under Section 6.1 hereof, at the option and upon the declaration of the majority in interest of the aggregate outstanding principal amount of the Notes, the entire unpaid principal and accrued and unpaid interest on the Notes shall, without presentment, demand, protest, or notice of any kind, all of which are hereby expressly waived, be forthwith due and payable, and such Requisite Noteholders may, immediately and without expiration of any period of grace, enforce payment of all amounts due and owing under such Notes and exercise any and all other remedies granted to them at law, in equity or otherwise.

7. Covenants of the Company; Rights of the Holders of the Notes.

7.1 Delivery of Financial Statements; Inspection Rights.

(a) The Company shall deliver to each Lender:

(i) as soon as practicable, but in any event within one hundred twenty (120) days after the end of each fiscal year of the Company, an income statement for such fiscal year and a balance sheet of the Company, and a statement of cash flows for such year, such year-end financial reports to be in reasonable detail, prepared in accordance with generally accepted accounting principles (“GAAP”), and audited and certified by independent public accountants of nationally recognized standing selected by the Company;

(ii) as soon as practicable, but in any event within forty-five (45) days after the end of each of the first three (3) quarters of each fiscal year of the Company, an unaudited income statement and statement of cash flows for such fiscal quarter and an unaudited balance sheet as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that such financial statements may (A) be subject to normal year-end audit adjustments and (B) not contain all notes thereto that may be required in accordance with GAAP);

(iii) as soon as practicable, but in any event at least thirty (30) days prior to the end of each fiscal year, a budget and business plan for the next fiscal year, prepared on a monthly basis, including balance sheets, income statements and statements of cash flows for such months and, as soon as prepared, any other budgets or revised budgets prepared by the Company;

(iv) as soon as practicable, but in any event within thirty (30) days after the end of each fiscal year of the Company, a statement showing the number of shares of each class and series of capital stock and securities convertible into or exercisable for shares of capital stock outstanding at the end of the period, the Common Stock issuable upon conversion or exercise of any outstanding securities convertible or exercisable for Common Stock and the exchange ratio or exercise price applicable thereto, and the number of shares of issued stock options and stock options not yet issued but reserved for issuance, if any, all in

sufficient detail as to permit the Lenders to calculate their respective percentage ownership in the Company;

(v) such other information relating to the financial condition, business or corporate affairs of the Company as the Requisite Noteholders may from time to time reasonably request; provided, however, that the Company shall not be obligated under this subsection (iv) or any other subsection of Section 7.1 to provide information that (A) it deems in good faith to be a trade secret or similar highly sensitive confidential information or (B) the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel; and

(b) Notwithstanding anything else in this Section 7.1 to the contrary, the Company may cease providing the information set forth in this Section 7.1 during the period starting with the date thirty (30) days before the Company's good-faith estimate of the date of filing of a registration statement if it reasonably concludes it must do so to comply with the SEC rules applicable to such registration statement and related offering; provided that the Company's covenants under this Section 7.1 shall be reinstated at such time as the Company is no longer actively employing its commercially reasonable efforts to cause such registration statement to become effective.

(c) Inspection. The Company shall permit each Lender, at such Lender's expense, to visit and inspect the Company's properties, to examine its books of account and records and to discuss the Company's affairs, finances and accounts with its officers, all at such reasonable times as may be requested by the Lender; provided, however, that the Company shall not be obligated pursuant to this Section 7.1 to provide access to any information that (A) it deems in good faith to be a trade secret or similar confidential information or (B) the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

(d) Termination of Information and Inspection Covenants. The covenants set forth in Sections 7.1(a) and 7.1(c) shall terminate and be of no further force or effect upon the earlier to occur of (i) the consummation of the Initial Public Offering, (ii) when the Company first becomes subject to the periodic reporting requirements of Sections 12(g) or 15(d) of the Exchange Act, whichever event shall first occur, (iii) the Next Equity Financing, (iv) a Non-Qualified Next Equity Financing into which such Lender's Note converts and (v) the consummation of a Corporate Transaction; provided in the case of (iii) or (iv), the Lender receives similar rights under the applicable financing documents for such transaction, and in the case of (v), that the consideration received is either (A) cash or (B) securities of a company registered under, and in compliance with its obligations under the Exchange Act.

7.2 Right of First Offer. Subject to the terms and conditions specified in this Section 7.2, the Company hereby grants to Takeda and each Lender a right of first offer with respect to future sales by the Company of its Shares (as hereinafter defined). For purposes of this Section 7.2, the term "Lender" includes any general partners and Affiliates of a Lender. Takeda and each Lender shall be entitled to apportion the right of first offer hereby granted it among itself and its partners and Affiliates in such proportions as it deems appropriate.

Each time the Company proposes to offer any shares of, or securities convertible into or exchangeable or exercisable for any shares of, its capital stock (including, without limitation, any such shares or securities issued in connection with debt securities) ("Shares"), the Company shall first make an offering of such Shares to Takeda and each Lender in accordance with the following provisions:

(a) The Company shall deliver a notice in accordance with Section 8.5 ("Notice") to Takeda and the Lenders stating (i) its bona fide intention to offer such Shares, (ii) the number of such Shares to be offered and (iii) the price and terms upon which it proposes to offer such Shares.

(b) By written notification received by the Company within ten (10) calendar days after the giving of Notice, Takeda and each Lender may elect to purchase, at the price and on the terms specified in the Notice, up to that portion of such Shares that equals the following: (i) with respect to Takeda, fifteen percent (15%) of such Shares; and (ii) with respect to each Lender, such Lender's respective pro rata portion of eighty five (85%) of such Shares determined in the proportion that the principal outstanding under the Note(s) held by such Lender bears to the total principal outstanding under the Notes held by all the Lenders; provided, that if Takeda does not elect to purchase the full amount of Shares to which it is entitled to purchase under this Section 7.2(b)(i), then each Lender shall have a right to elect to purchase its pro rata portion of any such remaining Shares not purchased by Takeda pursuant to the provisions of this Section 7.2(b)(ii).

(c) If all Shares that Takeda and the Lenders are entitled to obtain pursuant to Section 7.2(b) of this Agreement are not elected to be obtained as provided in Section 7.2(b) of this Agreement, the Company may, during the ninety (90) day period following the expiration of the period provided in Section 7.2(b) of this Agreement, offer the remaining unsubscribed portion of such Shares to any Person or Persons at a price not less than that, and upon terms no more favorable to the offeree than those, specified in the Notice. If the Company does not enter into an agreement for the sale of the Shares within such period, or if such agreement is not consummated within sixty (60) days of the execution thereof, the right provided hereunder shall be deemed to be revived and such Shares shall not be offered unless first reoffered to Takeda and the Lenders in accordance herewith.

(d) The right of first offer in this Section 7.2 shall not be applicable to (i) the issuance or sale of shares of Common Stock (or options therefor) (appropriately adjusted for any stock split, dividend, combination or other recapitalization) to employees, directors, consultants and other service providers for the primary purpose of soliciting or retaining their services pursuant to plans or agreements approved by the Board; (ii) the issuance of securities in the Initial Public Offering; (iii) the issuance of securities pursuant to the conversion or exercise of convertible or exercisable securities; (iv) the issuance of securities in connection with a bona fide business acquisition by the Company, whether by merger, consolidation, sale of assets, sale or exchange of stock or otherwise; (v) the issuance and sale of Conversion Shares; or (vi) the issuance of stock, warrants or other securities or rights pursuant to any equipment leasing arrangement or debt financing arrangement; provided such issuances are approved by the Board and (except for the Initial Public Offering) are primarily for non-equity financing purposes. In addition to the foregoing, the right of first offer in this Section 7.2 shall not be applicable with



respect to any Lender in any subsequent offering of Shares if (i) at the time of such offering, the Lender is not an “accredited investor,” as that term is then defined in Rule 501(a) of the Securities Act and (ii) such offering of Shares is otherwise being offered only to accredited investors.

(e) The rights provided in this Section 7.2 may not be assigned or transferred by any Lender; provided, however, that a Lender that is a venture capital fund, private equity investor or investment advisor may assign or transfer such rights to its Affiliates.

(f) The right of first offer in this Section 7.2, including notice with respect thereto, may be waived by Takeda with the written consent of Takeda. The right of first offer in this Section 7.2, including notice with respect thereto, may be waived by all Lenders with the written consent of the Requisite Noteholders. Takeda’s and the Requisite Noteholders’ right to waive the provisions of this Section 7.2 shall be independent of one another.

(g) The covenants set forth in this Section 7.2 shall terminate and be of no further force or effect upon (i) the consummation of the Initial Public Offering, (ii) when the Company first becomes subject to the periodic reporting requirements of Sections 12(g) or 15(d) of the Exchange Act and (iii) upon the consummation of a Corporate Transaction, whichever event shall first occur.

### 7.3 Rights of Refusal.

(a) Transfer Notice. If at any time a Common Holder proposes to Transfer Equity Securities (a “Selling Common Holder”), then the Selling Common Holder shall promptly give the Company and each Lender written notice of the Selling Common Holder’s intention to make the Transfer (the “Transfer Notice”). The Transfer Notice shall include (i) a description of the Equity Securities to be transferred (the “Offered Shares”), (ii) the name(s) and address(es) of the prospective transferee(s), (iii) the purchase price and form of consideration proposed to be paid for the Offered Shares and (iv) the other material terms and conditions upon which the proposed Transfer is to be made. The Transfer Notice shall certify that the Selling Common Holder has received a firm offer from the prospective transferee(s) and in good faith believes a binding agreement for the Transfer is obtainable on the terms set forth in the Transfer Notice. The Transfer Notice shall also include a copy of any written proposal, term sheet or letter of intent or other agreement relating to the proposed Transfer. In the event that the transfer is being made pursuant to the provisions of Section 7.3, the Transfer Notice shall state under which specific clause of Section 7.3 the Transfer is being made.

(b) Company’s Right of First Refusal. The Company shall have an option for a period of ten (10) days from delivery of the Transfer Notice in accordance with Section 8.5 to elect to purchase the Offered Shares at the same price and subject to the same material terms and conditions as described in the Transfer Notice. The Company may exercise such purchase option and purchase all or any portion of the Offered Shares by notifying the Selling Common Holder in writing before expiration of such ten (10) day period as to the number of such shares that it wishes to purchase. If the Company gives the Selling Common Holder notice that it desires to purchase such shares, then payment for the Offered Shares shall be made by check or wire transfer against delivery of the Offered Shares to be purchased at a

time and place agreed upon between the parties, which time shall be no later than forty-five (45) days after delivery to the Company of the Transfer Notice in accordance with Section 8.5, unless the Transfer Notice contemplated a later closing with the prospective third-party transferee(s) or unless the value of the consideration to be paid for the Offered Shares has not yet been established pursuant to Section 7.3(e)(ii). If the Company fails to purchase any or all of the Offered Shares by exercising the option granted in this Section 7.3(b) within the period provided, the remaining Offered Shares shall be subject to the options granted to the Lenders pursuant to Section 7.3(d).

(c) Additional Transfer Notice. Subject to the Company's option set forth in Section 7.3(b), if at any time the Selling Common Holder proposes a Transfer, then, within five (5) days after the Company has declined to purchase all, or a portion, of the Offered Shares or the Company's option to so purchase the Offered Shares has expired, the Selling Common Holder shall give each Lender an "Additional Transfer Notice" that shall include all of the information and certifications required in a Transfer Notice and shall additionally identify the Offered Shares that the Company has declined to purchase (the "Remaining Shares") and reference the Lenders' rights of first refusal with respect to the proposed Transfer contained in this Agreement.

(d) Lenders' Right of First Refusal.

(i) Each Lender shall have an option for a period of fifteen (15) days from the delivery of the Additional Transfer Notice in accordance with Section 8.5 from the Selling Common Holder set forth in Section 7.3(c) to elect to purchase its respective pro rata share of the Remaining Shares at the same price and subject to the same material terms and conditions as described in the Additional Transfer Notice. Each Lender may exercise such purchase option and purchase all or any portion of its pro rata share of the Remaining Shares (a "Participating Lender" for the purposes of this Section 7.3(d) and Section 7.3(e)), by notifying the Selling Common Holder and the Company in writing, before expiration of the fifteen (15)-day period as to the number of such shares that it wishes to purchase (the "Participating Lender Notice"). Each Lender's pro rata share of the Remaining Shares shall be a fraction of the Remaining Shares, the numerator of which shall be the number of shares of Common Stock either already issued or issuable, directly or indirectly, upon conversion of the Notes owned by such Lender on the date of the Transfer Notice and denominator of which shall be the total number of shares of Common Stock either already issued or issuable, directly or indirectly, upon conversion of the Notes held by all Lenders on the date of the Transfer Notice.

(ii) In the event any Lender elects not to purchase its pro rata share of the Remaining Shares available pursuant to its option under Section 7.3(d)(i) within the time period set forth therein, then the Selling Common Holder shall promptly give written notice (the "Overallocation Notice") to each Participating Lender that has elected to purchase all of its pro rata share of the Remaining Shares (each a "Fully Participating Lender"), which notice shall set forth the number of Remaining Shares not purchased by the other Lenders ("Unsubscribed Shares"), and shall offer the Fully Participating Lenders the right to acquire the Unsubscribed Shares. Each Fully Participating Lender shall have five (5) days after delivery of the Overallocation Notice in accordance with Section 8.5 to deliver a written notice to the Selling Common Holder (the "Participating Lenders Overallocation Notice") of its election to purchase

its pro rata share of the Unsubscribed Shares on the same terms and conditions as set forth in the Additional Transfer Notice, which such Participating Lenders Overallotment Notice shall also indicate the maximum number of the Unsubscribed Shares that such Fully Participating Lender will purchase in the event that any other Fully Participating Lender elects not to purchase its pro rata share of the Unsubscribed Shares. For the purposes of determining a Fully Participating Lender's pro rata share of the unsubscribed shares under this Section 7.3(d)(ii), the numerator shall be the same as that used in Section 7.3(d)(i) above and the denominator shall be the total number of shares of Common Stock (including shares of Common Stock issuable, directly or indirectly, upon conversion of the Notes) owned by all Fully Participating Lenders on the date of the Transfer Notice.

(iii) Each Participating Lender shall be entitled to apportion Remaining Shares to be purchased among its partners and Affiliates, provided that such Participating Lender notifies the Selling Common Holder of such allocation.

(e) Payment.

(i) The Participating Lenders shall effect the purchase of the Remaining Shares with payment by check or wire transfer against delivery of the Remaining Shares to be purchased at a time and place agreed upon between the parties, which time shall be no later than sixty (60) days after delivery to the Company of the Transfer Notice in accordance with Section 8.5, unless the Transfer Notice contemplated a later closing with the prospective third-party transferee(s) or unless the value of the consideration to be paid for the Offered Shares has not yet been established pursuant to Section 7.3(e)(ii).

(ii) Should the purchase price specified in the Transfer Notice or Additional Transfer Notice be payable in a form of consideration other than cash or evidences of indebtedness, the Company (and the Participating Lenders) shall have the right to pay such purchase price in an amount of cash equal to the fair market value of such consideration. If the Selling Common Holder and the Company (or the Participating Lenders) cannot agree on such fair market value within ten (10) days after delivery to the Company of the Transfer Notice (or the delivery of the Additional Transfer Notice to the Lenders), the valuation shall be made by an appraiser of recognized standing selected by the Selling Common Holder and the Company (or a majority-in-interest of the Participating Lenders) or, if they cannot agree on an appraiser within twenty (20) days after delivery to the Company of the Transfer Notice (or the delivery of the Additional Transfer Notice to the Lenders), each shall select an appraiser of recognized standing and those appraisers shall designate a third appraiser of recognized standing, whose appraisal shall be determinative of such value. The cost of such appraisal shall be shared equally by the Selling Common Holder, on the one hand, and the Company (and, to the extent there are any, the Participating Lenders, on the other hand, with that half of the cost to be borne by the Company and the Participating Lenders to be apportioned on a pro rata basis based on the number of shares each such party has expressed an interest in purchasing pursuant to this Section 7.3). If the time for the closing of the Company's purchase or the Participating Lenders' purchase has expired but the determination of the value of the purchase price offered by the prospective transferee(s) has not been finalized, then such closing shall be held on or prior to the fifth business day after such valuation shall have been made pursuant to this Section 7.3(e)(ii).

#### 7.4 Drag Along Right.

(a) Actions to be Taken. In the event that the Board, the holders of a majority of the outstanding shares of Common Stock, including the affirmative approval of Frazier, and the Requisite Noteholders (the "Requisite Parties"), approve a Sale of the Company, then each Common Holder, Takeda and Frazier hereby agrees with respect to all Shares which it own(s) or over which it otherwise exercises voting or dispositive authority:

(i) in the event such transaction is to be brought to a vote at a stockholder meeting, after receiving proper notice of any meeting of stockholders of the Company, to vote on the approval of a Sale of the Company, to be present, in person or by proxy, as a holder of shares of voting securities, at all such meetings and be counted for the purposes of determining the presence of a quorum at such meetings;

(ii) to vote (in person, by proxy or by action by written consent, as applicable) all Shares in favor of such Sale of the Company and in opposition to any and all other proposals that could reasonably be expected to delay or impair the ability of the Company to consummate such Sale of the Company;

(iii) to refrain from exercising any dissenters' rights or rights of appraisal under applicable law at any time with respect to such Sale of the Company;

(iv) to execute and deliver all related documentation and take such other action in support of the Sale of the Company as shall reasonably be requested by the Company or the Requisite Parties;

(v) if the Sale of the Company is structured as a Stock Sale, to sell the same proportion of his, her or its Shares as is being sold by the Requisite Parties, and, except as permitted in Section 7.4(b) below, on the same terms and conditions as the Requisite Parties;

(vi) not to deposit, and to cause their affiliates not to deposit, except as provided in this Agreement, any Shares owned by such Common Holder, Takeda and Frazier or any of their Affiliates in a voting trust or subject any such Shares to any arrangement or agreement with respect to the voting of such Shares, unless specifically requested to do so by the acquirer in connection with the Sale of the Company; and

(vii) if the consideration to be paid in exchange for the Shares pursuant to this Section 7.4 includes any securities and due receipt thereof by any stockholder would require under applicable law (i) the registration or qualification of such securities or of any person as a broker or dealer or agent with respect to such securities or (ii) the provision to any Common Holder, Takeda and Frazier of any information other than such information as a prudent issuer would generally furnish in an offering made solely to "accredited investors" as defined in Regulation D promulgated under the Securities Act, the Company may cause to be paid to any such Common Holder, Takeda and Frazier in lieu thereof, against surrender of the Shares which would have otherwise been sold by such stockholder, an amount in cash equal to the fair value (as determined in good faith by the Company) of the securities which such

Common Holder, Takeda and Frazier would otherwise receive as of the date of the issuance of such securities in exchange for the Shares.

(b) Exceptions. Notwithstanding the foregoing, each Common Holder, Takeda, Frazier and any holder of Common Stock issued upon the conversion of the Notes in accordance with the provisions of this Agreement will not be required to comply with Section 7.4(a) above in connection with any proposed Sale of the Company (the "Proposed Sale") unless:

(i) any representations and warranties to be made by such Common Holder, Takeda and Frazier in connection with the Proposed Sale are limited to representations and warranties related to authority, ownership and the ability to convey title to such Common Holder's, Takeda's and Frazier's Shares, including, without limitation, representations and warranties that (i) the Common Holder, Takeda and Frazier holds all right, title and interest in and to the Shares such stockholder purports to hold, free and clear of all liens and encumbrances, (ii) the obligations of the Common Holder, Takeda and Frazier in connection with the transaction have been duly authorized, if applicable, (iii) the documents to be entered into by the stockholder have been duly executed by the Common Holder, Takeda and Frazier and delivered to the acquiror and are enforceable against the stockholder in accordance with their respective terms and (iv) neither the execution and delivery of documents to be entered into in connection with the transaction, nor the performance of the Common Holder's, Takeda's and Frazier's obligations thereunder, will cause a breach or violation of the terms of any agreement, law or judgment, order or decree of any court or governmental agency by which such stockholder is subject or bound;

(ii) the Common Holder, Takeda and Frazier shall not be liable for the inaccuracy of any representation or warranty made by any other person in connection with the Proposed Sale, other than the Company (except to the extent that funds may be paid out of an escrow established to cover breach of representations, warranties and covenants of the Company as well as breach by any stockholder of any identical representations, warranties and covenants provided by all stockholders);

(iii) the liability for indemnification, if any, of such Common Holder, Takeda and Frazier in the Proposed Sale and for the inaccuracy of any representations and warranties made by the Company in connection with such Proposed Sale, is several and not joint with any other person (except to the extent that funds may be paid out of an escrow established to cover breach of representations, warranties and covenants of the Company as well as breach by any stockholder of any identical representations, warranties and covenants provided by all stockholders), and is pro rata in proportion to the amount of consideration paid to such Common Holder, Takeda and Frazier in connection with such Proposed Sale (in accordance with the provisions of the Company's Certificate of Incorporation);

(iv) liability shall be limited to such Common Holder's, Takeda's and Frazier's applicable share (determined based on the respective proceeds payable to each stockholder in connection with such Proposed Sale in accordance with the provisions of the Company's Certificate of Incorporation) of a negotiated aggregate indemnification amount that applies equally to all Common Holder, Takeda and Frazier but that in no event exceeds the

amount of consideration otherwise payable to such Common Holder, Takeda and Frazier in connection with such Proposed Sale, except with respect to claims related to fraud by such Common Holder, Takeda and Frazier, the liability for which need not be limited as to such Common Holder, Takeda and Frazier;

(v) upon the consummation of the Proposed Sale, (A) each holder of each class or series of the Company's stock will receive the same form of consideration for their shares of such class or series as is received by other holders in respect of their shares of such same class or series of stock, (B) each holder of a series of Preferred Stock will receive the same amount of consideration per share of such series of Preferred Stock as is received by other holders in respect of their shares of such same series, (C) each holder of Common Stock will receive the same amount of consideration per share of Common Stock as is received by other holders in respect of their shares of Common Stock, and (D) the aggregate consideration receivable by all holders of the Preferred Stock and Common Stock shall be allocated among the holders of Preferred Stock and Common Stock on the basis of the relative liquidation preferences to which the holders of each respective series of Preferred Stock and the holders of Common Stock are entitled in a Corporate Transaction (assuming for this purpose that the Proposed Sale is a Corporate Transaction) in accordance with the Company's Certificate of Incorporation in effect immediately prior to the Proposed Sale;

(vi) subject to subsection 7.4(b)(v) above, requiring the same form of consideration to be available to the holders of any single class or series of capital stock, if any holders of a series or class of capital stock of the Company are given an option as to the form and amount of consideration to be received as a result of the Proposed Sale, all holders of such series or class of capital stock will be given the same option; provided, however, that nothing in this subsection 7.4(b)(vi) shall entitle any holder to receive any form of consideration that such holder would be ineligible to receive as a result of such holder's failure to satisfy any condition, requirement or limitation that is generally applicable to the Company's stockholders;

(vii) no Common Holder that previously was a Lender shall be required to agree to any covenant not to compete or covenant not to solicit customers, employees or suppliers of any party to the Proposed Sale, or any obligation to provide services to the Company, the Person or group of related Persons participating in the Proposed Sale, or any other Person;

(viii) such Common Holder (unless such Common Holder is a Company officer or employee), Takeda and Frazier are not required to agree to any restrictive covenant in connection with the Proposed Sale (including without limitation any covenant not to compete or covenant not to solicit customers, employees or suppliers of any party to the Proposed Sale); and

(ix) such Common Holder, Takeda and Frazier and their Affiliates are not required to amend, extend or terminate any contractual or other relationship with the Company, the acquirer or their respective Affiliates, except that such Common Holder, Takeda and Frazier may be required to agree to terminate the investment-related documents between or among such Common Holder, Takeda or Frazier, the Company and/or other stockholders of the Company.

7.5 Registration Rights. The Company covenants and agrees as follows:

(a) Request for Registration.

(i) Subject to the conditions of this Section 7.5(a), if the Company shall receive at any time, a written request from the Holders of at least twenty-five percent (25%) of the holders of Registrable Securities then outstanding (for purposes of this Section 7.5(a), the “Initiating Holders”) that the Company file a registration statement under the Securities Act covering the registration of Registrable Securities with an anticipated aggregate offering price of at least \$10,000,000, then the Company shall, within twenty (20) days of the receipt thereof, give written notice of such request to all Lenders, and subject to the limitations of this Section 7.5(a), use its commercially reasonable efforts to effect, as soon as practicable, the registration under the Securities Act of all Registrable Securities that the Holders request to be registered in a written request received by the Company within twenty (20) days of the mailing of the Company’s notice pursuant to this Section 7.5(a)(i).

(ii) If the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 7.5(a), and the Company shall include such information in the written notice referred to in Section 7.5(a)(i). In such event the right of any Holder to include its Registrable Securities in such registration shall be conditioned upon such Holder’s participation in such underwriting and the inclusion of such Holder’s Registrable Securities in the underwriting (unless otherwise mutually agreed by a majority in interest of the Initiating Holders and such Holder) to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting by the Company (which underwriter or underwriters shall be reasonably acceptable to those Initiating Holders holding a majority of the Registrable Securities then held by all Initiating Holders). Notwithstanding any other provision of this Section 7.5(a), if the underwriter advises the Company that marketing factors require a limitation on the number of securities underwritten (including Registrable Securities), then the Company shall so advise all Holders of Registrable Securities that would otherwise be underwritten pursuant hereto, and the number of shares that may be included in the underwriting shall be allocated to the Holders of such Registrable Securities pro rata based on the number of Registrable Securities held by all such Holders (including the Initiating Holders). In no event shall any Registrable Securities be excluded from such underwriting unless all other securities are first excluded. Any Registrable Securities excluded or withdrawn from such underwriting shall be withdrawn from the registration.

(iii) Notwithstanding the foregoing, the Company shall not be required to effect a registration pursuant to this Section 7.5(a):

(A) in any particular jurisdiction in which the Company would be required to execute a general consent to service of process in effecting such registration, unless the Company is already subject to service in such jurisdiction and except as may be required under the Securities Act;

(B) after the Company, within the twelve (12) month period preceding the date of such request, has effected two (2) registrations pursuant to this Section 7.5(a), and such registrations have been declared or ordered effective;

(C) during the period starting with the date sixty (60) days prior to the Company's good faith estimate of the date of the filing of and ending on a date one hundred eighty (180) days following the effective date of a Company-initiated registration subject to Section 7.5(b) below, provided that the Company is actively employing in good faith its commercially reasonable efforts to cause such registration statement to become effective;

(D) if the Initiating Holders propose to dispose of Registrable Securities that may be registered on Form S-3 pursuant to Section 7.5(c) hereof; or

(E) if the Company shall furnish to Holders requesting a registration statement pursuant to this Section 7.5(a) a certificate signed by the Company's Chief Executive Officer or Chairman of the Board stating that in the good faith judgment of the Board, it would be seriously detrimental to the Company and its stockholders for such registration statement to be effected at such time, in which event the Company shall have the right to defer such filing for a period of not more than ninety (90) days after receipt of the request of the Initiating Holders; provided that such right shall be exercised by the Company not more than once in any twelve (12) month period.

(b) Company Registration.

(i) If (but without any obligation to do so) the Company proposes to register (including for this purpose a registration effected by the Company for stockholders other than the Holders) any of its stock or other securities under the Securities Act in connection with the public offering of such securities (other than (i) a registration relating to a demand pursuant to Section 7.5(a) of this Agreement or (ii) a registration relating solely to the sale of securities of participants in a Company stock plan, a registration relating to a corporate reorganization or transaction under Rule 145 of the Securities Act, a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities, or a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered), the Company shall, at such time, promptly give each Holder written notice of such registration. Upon the written request of each Holder given within twenty (20) days after mailing of such notice by the Company in accordance with Section 8.5 of this Agreement, the Company shall, subject to the provisions of Section 7.5(b)(iii) of this Agreement, use its commercially reasonable efforts to cause to be registered under the Securities Act all of the Registrable Securities that each such Holder requests to be registered.

(ii) Right to Terminate Registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 7.5(b) prior to the effectiveness of such registration whether or not any Holder has elected to include securities in such registration. The expenses of such withdrawn registration shall be borne by the Company in accordance with Section 7.5(f) hereof.



(iii) Underwriting Requirements. In connection with any offering involving an underwriting of shares of the Company's capital stock, the Company shall not be required under this Section 7.5(b) to include any of the Holders' securities in such underwriting unless they accept the terms of the underwriting as agreed upon between the Company and the underwriters selected by the Company (or by other Persons entitled to select the underwriters) and enter into an underwriting agreement in customary form with such underwriters, and then only in such quantity as the underwriters determine in their sole discretion will not jeopardize the success of the offering by the Company. If the total amount of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the amount of securities sold other than by the Company that the underwriters determine in their sole discretion is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, that the underwriters determine in their sole discretion will not jeopardize the success of the offering. In the event that the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included in such offering shall be apportioned pro rata among the selling Holders based on the number of Registrable Securities held by all selling Holders or in such other proportions as shall mutually be agreed to by all such selling Holders. Notwithstanding the foregoing, in no event shall (A) any Registrable Securities be excluded from such offering unless all other stockholders' securities have been first excluded from the offering and (B) the amount of securities of the selling Holders included in the offering be reduced below twenty percent (20%) of the total amount of securities included in such offering, unless such offering is the Initial Public Offering, in which case the selling Holders may be excluded if the underwriters make the determination described above and no other stockholder's securities are included in such offering. For purposes of the preceding sentence concerning apportionment, for any selling stockholder that is a Holder of Registrable Securities and that is a venture capital fund, partnership or corporation, the affiliated venture capital funds, partners, members, retired partners and stockholders of such Holder, or the estates and family members of any such partners, members and retired partners and any trusts for the benefit of any of the foregoing Persons shall be deemed to be a single "selling Holder," and any pro rata reduction with respect to such "selling Holder" shall be based upon the aggregate amount of Registrable Securities owned by all such related entities and individuals.

(c) Form S-3 Registration. In case the Company shall receive from the Holders of at least twenty percent (20%) of the Registrable Securities (for purposes of this Section 7.5(c), the "S-3 Initiating Holders") a written request or requests that the Company effect a registration on Form S-3 and any related qualification or compliance with respect to all or a part of the Registrable Securities owned by such Holder or Holders, the Company shall:

(i) promptly give written notice of the proposed registration, and any related qualification or compliance, to all other Holders; and

(ii) use its commercially reasonable efforts to effect, as soon as practicable, such registration and all such qualifications and compliances as may be so requested and as would permit or facilitate the sale and distribution of all or such portion of such Holders' Registrable Securities as are specified in such request, together with all or such portion of the Registrable Securities of any other Holders joining in such request as are specified in a written

request given within fifteen (15) days after receipt of such written notice from the Company; provided, however, that the Company shall not be obligated to effect any such registration, qualification or compliance, pursuant to this Section 7.5(c):

(A) if Form S-3 is not available for such offering by the Holders;

(B) if the Holders, together with the holders of any other securities of the Company entitled to inclusion in such registration, propose to sell Registrable Securities and such other securities (if any) at an aggregate price to the public (net of any underwriters' discounts or commissions) of less than \$3,000,000;

(C) if the Company shall furnish to all Holders requesting a registration statement pursuant to this Section 7.5(c) a certificate signed by the Company's Chief Executive Officer or Chairman of the Board stating that in the good faith judgment of the Board, it would be seriously detrimental to the Company and its stockholders for such registration statement to be effected at such time, in which event the Company shall have the right to defer such filing for a period of not more than ninety (90) days after receipt of the request of the S-3 Initiating Holders; provided that such right shall be exercised by the Company not more than once in any twelve (12) month period;

(D) if the Company has, within the twelve (12) month period preceding the date of such request, already effected two (2) registrations on Form S-3 pursuant to this Section 7.5(c);

(E) in any particular jurisdiction in which the Company would be required to qualify to do business or to execute a general consent to service of process in effecting such registration, qualification or compliance;

(F) if the Company, within thirty (30) days of receipt of the request of such S-3 Initiating Holders, gives notice of its bona fide intention to effect the filing of a registration statement with the SEC within one hundred twenty (120) days of receipt of such request (other than a registration effected solely to qualify an employee benefit plan or to effect a business combination pursuant to Rule 145), provided that the Company is actively employing in good faith its commercially reasonable efforts to cause such registration statement to become effective; or

(G) during the period starting with the date thirty (30) days prior to the Company's good faith estimate of the date of the filing of and ending on a date ninety (90) days following the effective date of a Company-initiated registration subject to Section 7.5(b) of this Agreement, provided that the Company is actively employing in good faith its commercially reasonable efforts to cause such registration statement to become effective.

(iii) If the S-3 Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 7.5(c) and the Company shall include such information in the written notice referred to in Section 7.5(c)(i). The

provisions of Section 7.5(a)(ii) of this Agreement shall be applicable to such request (with the substitution of Section 7.5(c) for references to Section 7.5(a)).

(iv) Subject to the foregoing, the Company shall file a registration statement covering the Registrable Securities and other securities so requested to be registered as soon as practicable after receipt of the request or requests of the S-3 Initiating Holders. Registrations effected pursuant to this Section 7.5(c) shall not be counted as requests for registration effected pursuant to Section 7.5(a) of this Agreement.

(d) Obligations of the Company. Whenever required under this Section 7.5 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(i) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its commercially reasonable efforts to cause such registration statement to become effective, and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to one hundred twenty (120) days or, if earlier, until the distribution contemplated in the Registration Statement has been completed;

(ii) prepare and file with the SEC such amendments and supplements to such registration statement and the prospectus used in connection with such registration statement as may be necessary to comply with the provisions of the Securities Act with respect to the disposition of all securities covered by such registration statement;

(iii) furnish to the Holders such number of copies of a prospectus, including a preliminary prospectus and any Free Writing Prospectus, in conformity with the requirements of the Securities Act, and such other documents as they may reasonably request in order to facilitate the disposition of Registrable Securities owned by them;

(iv) use its commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or Blue Sky laws of such jurisdictions as shall be reasonably requested by the Holders, provided that the Company shall not be required in connection therewith or as a condition thereto to qualify to do business or to file a general consent to service of process in any such states or jurisdictions;

(v) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the managing underwriter of such offering;

(vi) notify each Holder of Registrable Securities covered by such registration statement at any time when a prospectus or Free Writing Prospectus (to the extent prepared by or on behalf of the Company) relating thereto is required to be delivered under the Securities Act of the happening of any event as a result of which the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing, and, at the request of any such Holder, the Company will, as soon as reasonably practicable, file and furnish

to all such Holders a supplement or amendment to such prospectus or Free Writing Prospectus (to the extent prepared by or on behalf of the Company) so that, as thereafter delivered to the purchasers of such Registrable Securities, such prospectus will not contain an untrue statement of a material fact or omit to state any fact necessary to make the statements therein not misleading in light of the circumstances under which they were made;

(vii) cause all such Registrable Securities registered pursuant to this Section 7.5 to be listed on a national exchange or trading system and on each securities exchange and trading system on which similar securities issued by the Company are then listed; and

(viii) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration.

Notwithstanding the provisions of this Section 7.5, the Company shall be entitled to postpone or suspend, for a reasonable period of time, the filing, effectiveness or use of, or trading under, any registration statement if the Company shall determine that any such filing or the sale of any securities pursuant to such registration statement would in the good faith judgment of the Board:

(A) materially impede, delay or interfere with any material pending or proposed financing, acquisition, corporate reorganization or other similar transaction involving the Company for which the Board has authorized negotiations;

(B) materially and adversely impair the consummation of any pending or proposed material offering or sale of any class of securities by the Company; or

(C) require disclosure of material nonpublic information that, if disclosed at such time, would be materially harmful to the interests of the Company and its stockholders; provided, however, that during any such period all executive officers and directors of the Company are also prohibited from selling securities of the Company (or any security of any of the Company's subsidiaries or affiliates).

In the event of the suspension of effectiveness of any registration statement pursuant to this Section 7.5(d), the applicable time period during which such registration statement is to remain effective shall be extended by that number of days equal to the number of days the effectiveness of such registration statement was suspended.

(e) Information from Holder. It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 7.5 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as shall be reasonably required to effect the registration of such Holder's Registrable Securities.

(f) Expenses of Registration. All expenses other than underwriting discounts and commissions incurred in connection with registrations, filings or qualifications pursuant to Sections 7.5(a) and 7.5(b) of this Agreement, including, without limitation, all registration, filing and qualification fees, printers' and accounting fees, fees and disbursements of counsel for the Company and the reasonable fees and disbursements of one counsel for the selling Holders (not to exceed \$50,000) shall be borne by the Company. Notwithstanding the foregoing, the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 7.5(a) of this Agreement if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which case all participating Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration) unless, in the case of a registration requested under Section 7.5(a) of this Agreement, the Holders of a majority of the Registrable Securities agree to forfeit their right to one demand registration pursuant to Section 7.5(a) of this Agreement; provided, however, that if at the time of such withdrawal, the Holders have learned of a material adverse change in the condition, business or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness following disclosure by the Company of such material adverse change, then the Holders shall not be required to pay any of such expenses and shall retain their rights pursuant to Section 7.5(a) of this Agreement. All expenses incurred in connection with a registration requested pursuant to Section 7.5(c) of this Agreement, including, without limitation, all registration, filing, qualification, printer's and accounting fees and the reasonable fees and disbursements of counsel for the selling Holder or Holders and counsel for the Company, shall be borne pro rata by the Holder or Holders participating in such registration effected pursuant to Section 7.5(c) of this Agreement.

(g) Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any such registration as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 7.5.

(h) Indemnification. In the event any Registrable Securities are included in a registration statement under this Section 7.5:

(i) To the extent permitted by law, the Company will indemnify and hold harmless each Holder, the partners, members, officers, directors and stockholders of each Holder, legal counsel and accountants for each Holder, any underwriter (as defined in the Securities Act) for such Holder and each Person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any losses, claims, damages or liabilities (joint or several) to which they may become subject under the Securities Act, the Exchange Act, any state securities laws or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities laws, insofar as such losses, claims, damages, or liabilities (or actions or proceedings, whether commenced or threatened, in respect thereof) arise out of or are based upon any of the following statements, omissions or violations (collectively, a "Violation"): (i) any untrue or alleged untrue statement of a material fact contained in such registration statement, including any preliminary prospectus, final prospectus, or Free Writing Prospectus contained therein or any amendments or supplements thereto, any issuer information (as defined in Rule 433 of the Securities Act) filed or required to

be filed pursuant to Rule 433(d) under the Securities Act or any other document incident to such registration prepared by or on behalf of the Company or used or referred to by the Company, (ii) the omission or alleged omission of a material fact required to be stated in such registration statement, or necessary to make the statements therein not misleading or (iii) any violation or alleged violation by the Company of the Securities Act, the Exchange Act, any state securities laws or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities laws, and the Company will reimburse each such Holder, underwriter, controlling Person or other aforementioned Person for any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability, action or proceeding as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 7.5(h)(i) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability, action or proceeding if such settlement is effected without the consent of the Company (which consent shall not be unreasonably withheld), nor shall the Company be liable in any such case for any such loss, claim, damage, liability, action or proceeding to the extent that it arises out of or is based upon a Violation that occurs in reliance upon, and in conformity with, written information furnished expressly for use in connection with such registration by any such Holder, underwriter, controlling Person or other aforementioned Person.

(ii) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, each of its directors, each of its officers who has signed the registration statement, each Person, if any, who controls the Company within the meaning of the Securities Act, legal counsel and accountants for the Company, any underwriter, any other Holder selling securities in such registration statement and any controlling Person of any such underwriter or other Holder, against any losses, claims, damages or liabilities (joint or several) to which any of the foregoing Persons may become subject, under the Securities Act, the Exchange Act, any state securities laws or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities laws, insofar as such losses, claims, damages or liabilities (or actions or proceedings, whether commenced or threatened, in respect thereof) arise out of or are based upon any Violation, in each case to the extent (and only to the extent) that such Violation occurs in reliance upon and in conformity with written information furnished by such Holder expressly for use in connection with such registration; and each such Holder will reimburse any Person intended to be indemnified pursuant to this Section 7.5(h)(ii) for any legal or other expenses reasonably incurred by such Person in connection with investigating or defending any such loss, claim, damage, liability, action or proceeding as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 7.5(h)(ii) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability, action or proceeding if such settlement is effected without the consent of the Holder (which consent shall not be unreasonably withheld), and provided that in no event shall any indemnity under this Section 7.5(h)(ii) exceed the gross proceeds from the offering received by such Holder.

(iii) Promptly after receipt by an indemnified party under this Section 7.5(h) of notice of the commencement of any action or proceeding (including any governmental action or proceeding) for which a party may be entitled to indemnification, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 7.5(h), deliver to the indemnifying party a written notice of the commencement thereof and the indemnifying party shall have the right to participate in and, to

the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one (1) separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such proceeding. The failure to deliver written notice to the indemnifying party within a reasonable time of the commencement of any such action or proceeding, if prejudicial to its ability to defend such action or proceeding, shall relieve such indemnifying party of any liability to the indemnified party under this Section 7.5(h) to the extent of such prejudice, but the omission to so deliver written notice to the indemnifying party will not relieve such indemnifying party of any liability that it may have to any indemnified party otherwise than under this Section 7.5(h).

(iv) If the indemnification provided for in this Section 7.5(h) is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any loss, liability, claim, damage or expense referred to herein, then the indemnifying party, in lieu of indemnifying such indemnified party hereunder, shall contribute to the amount paid or payable by such indemnified party as a result of such loss, liability, claim, damage or expense in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and the indemnified party on the other hand in connection with the statements or omissions that resulted in such loss, liability, claim, damage or expense, as well as any other relevant equitable considerations; provided, however, that (A) no contribution by any Holder, when combined with any amounts paid by such Holder pursuant to Section 7.5(h)(ii), shall exceed the gross proceeds from the offering received by such Holder and (B) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Section 7.5(h)(iv), when combined with the amounts paid or payable by such Holder pursuant to Section 7.5(h)(ii), exceed the proceeds from the offering received by such Holder (net of any expenses paid by such Holder). The relative fault of the indemnifying party and the indemnified party shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

(v) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control.

(vi) The obligations of the Company and Holders under this Section 7.5(h)(ii) shall survive the completion of any offering of Registrable Securities in a registration statement under this Section 7.5 and otherwise.

(i) Reports Under the Exchange Act. With a view to making available to the Holders the benefits of Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company agrees to:

(i) make and keep public information available, as those terms are understood and defined in Rule 144, at all times after the effective date of the Initial Public Offering;

(ii) file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act; and

(iii) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (A) a written statement by the Company that it has complied with the reporting requirements of Rule 144 (at any time after ninety (90) days after the effective date of the first registration statement filed by the Company), the Securities Act and the Exchange Act (at any time after it has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after it so qualifies), (B) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company and (C) such other information as may be reasonably requested to avail any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration or pursuant to such form.

(j) Assignment of Registration Rights. The rights to cause the Company to register Registrable Securities pursuant to this Section 7.5 may be assigned (but only with all related obligations) by a Holder to a transferee or assignee of such securities that (i) is an Affiliate, subsidiary, parent, partner, limited partner, retired partner, member or stockholder of a Holder or (ii) is a Holder's family member or trust for the benefit of an individual Holder; provided: (A) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee or assignee and the securities with respect to which such registration rights are being assigned; (B) such transferee or assignee agrees in writing to be bound by and subject to the terms and conditions of this Agreement, including, without limitation, the provisions of Section 8.11 of this Agreement; and (C) such assignment shall be effective only if immediately following such transfer the further disposition of such securities by the transferee or assignee is restricted under the Securities Act.

(k) Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Requisite Noteholders, enter into any agreement with any holder or prospective holder of any securities of the Company that would allow such holder or prospective holder (i) to include any of such securities in any registration filed under Section 7.5(a), Section 7.5(b) or Section 7.5(c) of this Agreement, unless under the terms of such agreement, such holder or prospective holder may include such securities in any such registration only to the extent that the inclusion of such securities will not reduce the amount of the Registrable Securities of the Holders that are included or (ii) to demand registration of their securities.



(l) Termination of Registration Rights. No Holder shall be entitled to exercise any right provided for in this Section 7.5 upon the earlier of (i) such time after the Initial Public Offering at which such Holder can sell all shares held by it in compliance with Rule 144(b)(1)(i) and (ii) the fifth anniversary of the Initial Public Offering.

7.6 Voting Provisions Regarding the Board Provisions.

(a) Each Common Holder, Takeda and Frazier agrees to vote, or cause to be voted, all Shares owned by such Common Holder, Takeda and Frazier, or over which such Common Holder, Takeda and Frazier has voting control, from time to time and at all times, in whatever manner as shall be necessary to ensure that the size of the Board shall be set and remain at seven (7) directors. Three of the seven director seats will be vacant as of the Initial Closing.

(b) Each Common Holder, Takeda and Frazier agrees to vote, or cause to be voted, all Shares owned by such Common Holder, Takeda and Frazier, or over which such Stockholder has voting control, from time to time and at all times, in whatever manner as shall be necessary to ensure that at each annual or special meeting of stockholders at which an election of directors is held or pursuant to any written consent of the stockholders, the following persons shall be elected to the Board:

(i) One (1) person designated from time to time by Frazier, who shall initially be James Topper;

(ii) One (1) person designated from time to time by the Lenders other than Frazier, which individual shall initially be Jon Edwards;

(iii) One (1) person designated from time to time by Takeda or its affiliates, which seat shall initially be vacant; provided, however, that if such seat is vacant, Takeda or its affiliates shall not have the right to designate a member to the Board to fill such vacant seat pursuant to this Section 7.6(b)(iii) at any time that the Board consists of fewer than five (5) individuals that are not affiliated with Takeda;

(iv) One (1) person designated from time to time by the holders of a majority of the Common Stock, which individual shall initially be Tadataka Yamada, M.D. (who shall initially be the Chairman of the Board);

(v) The Company's Chief Executive Officer, who shall initially be David Socks (the "CEO Director"), provided that if for any reason the CEO Director shall cease to serve as the Chief Executive Officer of the Company, each of the Common Holders shall promptly vote their respective Shares (A) to remove the former Chief Executive Officer of the Company from the Board if such person has not resigned as a member of the Board; and (B) to elect such person's replacement as Chief Executive Officer of the Company as the new CEO Director; and

(vi) Two (2) individuals not otherwise an Affiliate of the Company or of any Lender who is mutually acceptable to the other members of the Board.

(c) In the absence of any designation from the Persons or groups with the right to designate a director as specified above, the director previously designated by them and then serving shall be reelected if still eligible and willing to serve as provided herein and otherwise, such Board seat shall remain vacant.

(d) Each Common Holder, Takeda and Frazier also agrees to vote, or cause to be voted, all Shares owned by such Common Holder, Takeda and Frazier, or over which such Common Holder, Takeda and Frazier has voting control, from time to time and at all times, in whatever manner as shall be necessary to ensure that:

(i) no director elected pursuant to Sections 7.6(b) or 7.6(c) of this Agreement may be removed from office other than for cause unless (A) such removal is directed or approved by the Person(s) originally entitled to designate or approve such director pursuant to Section 7.6(b); or (B) the Person(s) originally entitled to designate or approve such director pursuant to Section 7.6(b) is no longer so entitled to designate or approve such director;

(ii) any vacancies created by the resignation, removal or death of a director elected pursuant to Sections 7.6(b) or 7.6(c) shall be filled pursuant to the provisions of this Section 7.6; and

(iii) upon the request of any party entitled to designate a director as provided in Section 7.6(b) to remove such director, such director shall be removed.

All Common Holders, Takeda and Frazier agree to execute any written consents required to perform the obligations of this Section 7.6, and the Company agrees at the request of any Person or group entitled to designate directors to call a special meeting of stockholders for the purpose of electing directors.

(e) No Common Holder, nor any Affiliate of any Common Holder, nor Takeda, nor Frazier shall have any liability as a result of designating a person for election as a director for any act or omission by such designated person in his or her capacity as a director of the Company, nor shall any Common Holder, Takeda or Frazier have any liability as a result of voting for any such designee in accordance with the provisions of this Section 7.6.

(f) The Company agrees to use its best efforts, within the requirements of applicable law, to ensure that the rights granted under this Section 7.6 are effective and that the parties enjoy the benefits of this Section 7.6. Such actions include, without limitation, the use of the Company's best efforts to cause the nomination and election of the directors as provided in this Section 7.6.

(g) Each party acknowledges and agrees that each party hereto will be irreparably damaged in the event any of the provisions of this Section 7.6 are not performed by the parties in accordance with their specific terms or are otherwise breached. Accordingly, it is agreed that each of the Company, the Common Holders, Takeda and Frazier shall be entitled to an injunction to prevent breaches of this Section 7.6, and to specific enforcement of this Section 7.6 and its terms and provisions in any action instituted in any court of the United States or any state having subject matter jurisdiction.

(h) All remedies, either under this Section 7.6 or by law or otherwise afforded to any party, shall be cumulative and not alternative.

(i) This Section 7.6 shall be effective as of the date hereof and shall continue in effect until and shall terminate upon the earliest to occur of (a) the consummation of the Initial Public Offering (other than a registration statement relating either to the sale of securities to employees of the Company pursuant to its stock option, stock purchase or similar plan or an SEC Rule 145 transaction) and (b) the consummation of any other Corporate Transaction.

(j) In the event that after the date of this Agreement, the Company enters into an agreement with any Person to issue shares of capital stock to such Person, then, the Company shall cause such Person, as a condition precedent to entering into such agreement, to become a party to this Agreement by executing an Adoption Agreement in the form attached hereto as Exhibit G, agreeing to be bound by and subject to the terms of this Agreement as a Common Holder and thereafter such person shall be deemed a Stockholder for all purposes under this Agreement.

(k) Each transferee or assignee of any Shares subject to this Agreement shall continue to be subject to the terms hereof, and, as a condition precedent to the Company's recognition of such transfer, each transferee or assignee shall agree in writing to be subject to each of the terms of this Agreement by executing and delivering an Adoption Agreement substantially in the form attached hereto as Exhibit G. Upon the execution and delivery of an Adoption Agreement by any transferee, such transferee shall be deemed to be a party hereto as if such transferee were the transferor and such transferee's signature appeared on the signature pages of this Agreement and shall be deemed to be a Common Holder, as applicable. The Company shall not permit the transfer of the Shares subject to this Agreement on its books or issue a new certificate representing any such Shares unless and until such transferee shall have complied with the terms of this Section 7.6(k). Each certificate instrument, or book entry representing the Shares subject to this Section 7.6 if issued on or after the date of this Agreement shall be notated by the Company with a legend reading substantially as follows:

“THE SHARES REPRESENTED HEREBY ARE SUBJECT TO A NOTE PURCHASE AGREEMENT, AS MAY BE AMENDED FROM TIME TO TIME, (A COPY OF WHICH MAY BE OBTAINED UPON WRITTEN REQUEST FROM THE COMPANY), AND BY ACCEPTING ANY INTEREST IN SUCH SHARES THE PERSON ACCEPTING SUCH INTEREST SHALL BE DEEMED TO AGREE TO AND SHALL BECOME BOUND BY ALL THE PROVISIONS OF THAT NOTE PURCHASE AGREEMENT, INCLUDING CERTAIN RESTRICTIONS ON VOTING, TRANSFER AND OWNERSHIP SET FORTH THEREIN.”

The Company, by its execution of this Agreement, agrees that it will cause the certificates instruments, or book entry evidencing the Shares issued after the date hereof to be notated with the legend required by this Section 7.6(k), and it shall supply, free of charge, a copy of this Agreement to any holder of such Shares upon written request from such holder to the Company at its principal office. The parties to this Agreement do hereby agree that the failure to cause the

certificates, instruments, or book entry evidencing the Shares to be notated with the legend required by this Section 7.6(k) herein and/or the failure of the Company to supply, free of charge, a copy of this Agreement as provided hereunder shall not affect the validity or enforcement of this Agreement.

(l) In the event of any issuance of Shares or the voting securities of the Company hereafter to any of the Common Holders (including, without limitation, in connection with any stock split, stock dividend, recapitalization, reorganization, or the like), such Shares shall become subject to this Agreement and shall be notated with the legend set forth in Section 7.6(k).

(m) The voting of Shares pursuant to this Agreement may be effected in person, by proxy, by written consent or in any other manner permitted by applicable law. For the avoidance of doubt, voting of the Shares pursuant to the Agreement need not make explicit reference to the terms of this Agreement.

(n) The Company will promptly pay or reimburse the directors for all reasonable out-of-pocket expenses incurred in connection with attending Board or committee meetings of the Company or in performing their duties as directors of the Company (including expenses incurred in performing their duties as members of committees of the Board).

7.7 Protective Provisions. So long as a majority of the principal amount of the Notes originally issued pursuant to this Agreement remains outstanding, the Company shall not (by amendment, merger, consolidation or otherwise) without (in addition to any other vote required by law or the Certificate of Incorporation) first obtaining the written consent of the Requisite Noteholders:

(a) consummate a Corporate Transaction;

(b) amend, alter or repeal any provision of the Certificate of Incorporation or Bylaws;

(c) authorize or issue any debt security (other than the Notes) in excess of \$250,000 in the aggregate; provided, however, that such Requisite Noteholder approval shall not be required for the contemplated debt facility (in an amount not to exceed \$50,000,000 in principal amount) with Silicon Valley Bank as long as the final terms and conditions of such proposed debt facility are unanimously approved by the Board;

(d) redeem, purchase or otherwise acquire (or pay into or set aside for a sinking fund for such purpose) any share or shares of Preferred Stock or Common Stock; provided, however, that this restriction shall not apply to the repurchase of shares of Common Stock from employees, officers, directors, consultants or other persons performing services for the Company or any subsidiary pursuant to agreements under which the Company has the option to repurchase such shares upon the occurrence of certain events, such as the termination of employment or service, or pursuant to a right of first refusal;

(e) issue, create or authorize the creation of any security that is senior to the Notes or otherwise more favorable to the purchasers thereof than the terms of the Notes;

provided, however, that such Requisite Noteholder approval shall not be required for the contemplated debt facility (in an amount not to exceed \$50,000,000 in principal amount) with Silicon Valley Bank as long as the final terms and conditions of such proposed debt facility are unanimously approved by the Board;

(f) change the authorized number of directors of the Company; and

(g) pay or declare any dividend on any shares of capital stock of the Company prior to the repayment or conversion of the Notes in accordance with the terms of this Agreement other than dividends payable on the Common Stock solely in the form of additional shares of Common Stock.

7.8 Directors' and Officers' Insurance. The Company has as of the date hereof or shall within thirty (30) days of the date hereof use its commercially reasonable efforts to obtain from financially sound and reputable insurers directors and officers liability insurance in an amount and on terms and conditions satisfactory to the Board, and will use its commercially reasonable efforts to cause such insurance policy to be maintained until such time as the Board determines that such insurance should be discontinued.

#### 7.9 Observer Rights.

(a) Abingworth Observer Right. As long as Abingworth Bioventures VII LP ("Abingworth") holds a Note (or securities issued upon the conversion thereof), the Company shall invite a representative of Abingworth, who shall initially be Shelley Chu, to attend all meetings of its Board in a nonvoting observer capacity and, in this respect, shall give such representative copies of all notices, minutes, consents and other materials that it provides to its directors; provided, however, that such representative shall agree to hold in confidence and trust with respect to all information so provided; and, provided further, that the Company reserves the right to withhold any information and to exclude such representative from any meeting or portion thereof if access to such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel.

(b) RA Capital Observer Right. As long as RA Capital Healthcare Fund, L.P. ("RA Capital") holds a Note (or securities issued upon the conversion thereof), the Company shall invite a representative of RA Capital, who shall initially be Jake Simson, to attend all meetings of its Board in a nonvoting observer capacity and, in this respect, shall give such representative copies of all notices, minutes, consents and other materials that it provides to its directors; provided, however, that such representative shall agree to hold in confidence and trust with respect to all information so provided; and, provided further, that the Company reserves the right to withhold any information and to exclude such representative from any meeting or portion thereof if access to such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel.

(c) Medicxi Observer Right. In the event Affiliates of Medicxi Ventures Management (Jersey) Limited ("Medicxi") are not entitled to designate a member of the Board, the Company shall invite a representative of Medicxi to attend all meetings of its Board in a nonvoting observer capacity and, in this respect, shall give such representative copies

of all notices, minutes, consents and other materials that it provides to its directors; provided, however, that such representative shall agree to hold in confidence and trust with respect to all information so provided; and, provided further, that the Company reserves the right to withhold any information and to exclude such representative from any meeting or portion thereof if access to such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel.

7.10 Confidentiality. Each Lender agrees, severally and not jointly, to use the same degree of care as such Lender uses to protect its own confidential information for any information obtained pursuant to this Agreement which the Company identifies in writing as being proprietary or confidential and such Lender acknowledges that it will not, unless otherwise required by law or the rules of any national securities exchange, association or marketplace, disclose such information without the prior written consent of the Company except such information that (a) was in the public domain prior to the time it was furnished to such Lender, (b) is or becomes (through no willful improper action or inaction by such Lender) generally available to the public, (c) was in its possession or known by such Lender without restriction prior to receipt from the Company, (d) was rightfully disclosed to such Lender by a third party without restriction or (e) was independently developed without any use of the Company's confidential information. Notwithstanding the foregoing, each Lender that is a limited partnership or limited liability company may disclose such proprietary or confidential information to any former partners or members who retained an economic interest in such Lender, current or prospective partner of the partnership or any subsequent partnership under common investment management, investment advisor, limited partner, general partner, member or management company of such Lender (or any employee or representative of any of the foregoing) (each of the foregoing Persons, a "Permitted Disclosee") or legal counsel, accountants, consultant or representatives for such Lender. Furthermore, nothing contained herein shall prevent any Lender or any Permitted Disclosee from (i) entering into any business, entering into any agreement with a third party, or investing in or engaging in investment discussions with any other company (whether or not competitive with the Company), provided that such Lender or Permitted Disclosee does not, except as permitted in accordance with this Section 7.10, disclose or otherwise make use of any proprietary or confidential information of the Company in connection with such activities, or (ii) making any disclosures required by law, rule, regulation or court or other governmental order. The Company shall use the same degree of care as it uses to protect its own confidential information for any information obtained pursuant to this Agreement which any such Lender identifies in writing as being proprietary or confidential and the Company acknowledges that it will not, unless otherwise required by law or the rules of any national securities exchange, association or marketplace, disclose such information without the prior written consent of such Lender except such information that (a) was in the public domain prior to the time it was furnished to the Company, (b) is or becomes (through no willful improper action or inaction by the Company) generally available to the public, (c) was in its possession or known by the Company without restriction prior to receipt from such Lender, (d) was rightfully disclosed to the Company by a third party without restriction or (e) was independently developed without any use of such Lender confidential information. The confidentiality obligations set forth in this Section 7.10 will survive for a period of five (5) years following the termination of this Agreement.

8. Miscellaneous.

8.1 Successors and Assigns. Except as otherwise provided herein, the terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the parties; provided, however, the Company may not assign its obligations under this Agreement without the written consent of the Requisite Noteholders. For the avoidance of doubt, a Lender that is a venture capital fund or private equity investor may assign or transfer its rights and obligations under this Agreement to its Affiliates. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement.

8.2 Governing Law. This Agreement and the Notes shall be governed by and construed under the laws of the State of Delaware as applied to agreements among Delaware residents, made and to be performed entirely within the State of Delaware, without regard to any choice of laws rules that may result in the application of the laws of any other jurisdiction.

8.3 Counterparts; Delivery. This Agreement may be executed by electronic signature and in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one (1) and the same instrument. Counterparts may be delivered by facsimile, electronic mail (including pdf) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

8.4 Titles and Subtitles. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

8.5 Notices. All notices and other communications given or made pursuant hereto shall be in writing and shall be deemed effectively given: (a) upon personal delivery to the party to be notified, (b) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient, if not so confirmed, then on the next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent to the respective parties at the following addresses (or at such other addresses as shall be specified by notice given in accordance with this Section 8.5):

If to the Company:

Phathom Pharmaceuticals, Inc.

With a copy to (which alone shall not constitute sufficient notice):

Latham & Watkins LLP  
12670 High Bluff Drive  
San Diego, CA 92103  
Attention: Cheston J. Larson  
Email: [cheston.larson@lw.com](mailto:cheston.larson@lw.com)  
Facsimile No.: (858) 523-5450

If to Lenders:

At the respective addresses shown on the signature pages hereto.

With a copy to (which alone shall not constitute sufficient notice):

Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP  
One Marina Park Drive, Suite 900  
Boston, MA 02210  
Attention: Timothy H. Ehrlich and Albert W. Vanderlaan  
Email: [tehrlich@gunder.com](mailto:tehrlich@gunder.com); [avanderlaan@gunder.com](mailto:avanderlaan@gunder.com)  
Facsimile No.: (617) 648-9199

8.6 Finder's Fee. Each party represents that it neither is nor will be obligated for any finder's fee or commission in connection with this transaction. Each Lender agrees to indemnify and to hold harmless the Company from any liability for any commission or compensation in the nature of a finder's fee (and the costs and expenses of defending against such liability or asserted liability) for which such Lender or any of its officers, partners, employees or representatives is responsible. The Company agrees to indemnify and hold harmless each Lender from any liability for any commission or compensation in the nature of a finder's fee (and the costs and expenses of defending against such liability or asserted liability) for which the Company or any of its officers, employees or representatives is responsible.

8.7 Expenses. If any action at law or in equity is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees, costs and necessary disbursements in addition to any other relief to which such party may be entitled. Each party hereto shall pay all costs and expenses that it incurs with respect to the negotiation, execution, delivery and performance of this Agreement. At the Initial Closing, the Company shall reimburse the reasonable fees and expenses of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP, counsel for the Lenders, not to exceed \$70,000.

8.8 Entire Agreement; Amendments and Waivers. This Agreement, the Notes and the other documents expressly delivered pursuant hereto or in connection with the Closing hereunder constitute the full and entire understanding and agreement between the parties with regard to the subjects hereof and thereof. The Company's agreements with each of the Lenders are separate agreements, and the sales of the Notes to each of the Lenders are separate sales. Nonetheless, any term of this Agreement or the Notes may be amended and the



observance of any term of this Agreement or the Notes may be waived (either generally or in a particular instance and either retroactively or prospectively), with the written consent of the Company and the Requisite Noteholders. In addition, (i) no term of this Agreement or the Notes may be amended or waived without the written consent of each Lender if such amendment or waiver materially, adversely and disproportionately affects such Lender in a manner different than all other Lenders, (ii) Section 1 of the Note held by each Lender shall not be amended or waived with respect to such Lender without the written consent of such Lender, (iii) the outstanding principal and interest amount of the Note held by each Lender shall not be amended or waived with respect to such Lender without the written consent of such Lender, and (iv) Section 1(ff), Section 7.2, Section 7.4 and Section 7.6(b)(iii) of this Agreement shall not be amended or waived with respect to Takeda without the written consent of Takeda. Any waiver or amendment effected in accordance with this Section 8.8 shall be binding upon each party to this Agreement and any holder of any Note purchased under this Agreement at the time outstanding and each future holder of all such Notes.

8.9 Effect of Amendment or Waiver. Each Lender acknowledges that by the operation of Section 8.8 hereof, and subject to the limitations set forth therein, the Requisite Noteholders will have the right and power to diminish or eliminate all rights of such Lender under this Agreement and each Note issued to such Lender.

8.10 Severability. If one or more provisions of this Agreement are held to be unenforceable under applicable law, such provision shall be excluded from this Agreement and the balance of the Agreement shall be interpreted as if such provision were so excluded and shall be enforceable in accordance with its terms.

8.11 "Market Stand-Off" Agreement. Each Lender hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the Initial Public Offering and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days) (a) lend, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock held immediately prior to the effectiveness of the registration statement for such offering, or (b) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Common Stock, whether any such transaction described in clause (a) or (b) above is to be settled by delivery of Common Stock or other securities, in cash or otherwise. The foregoing provisions of this Section 8.11 shall apply only to the Company's Initial Public Offering, shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, and shall only be applicable to the Lenders if all officers, directors and greater than one percent (1%) stockholders of the Company enter into similar agreements. The underwriters in connection with the Company's Initial Public Offering are intended third-party beneficiaries of this Section 8.11 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto. Each Lender further agrees to execute such agreements as may be reasonably requested by the underwriters in the Company's Initial Public Offering that are consistent with this Section 8.11 or that are necessary to give further effect thereto. Notwithstanding the foregoing, the Company and the

managing underwriter may extend the market stand-off period specified above solely to the extent necessary to accommodate regulatory restrictions on (1) the publication or other distribution of research reports, and (2) analyst recommendations and opinions, including, without limitation, the restrictions, if any, contained in FINRA Rule 2241 or any successor provisions or amendments thereto. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply to all Lenders subject to such agreements pro rata based on the number of shares subject to such agreements.

In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to the capital stock of the Company of each Lender (and the shares or securities of every other person subject to the foregoing restriction) until the end of such period.

Each Lender agrees that a legend reading substantially as follows shall be placed on all certificates representing all capital stock of the Company of each Lender (and the shares or securities of every other person subject to the restriction contained in this Section 8.11):

THE SECURITIES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A LOCK-UP PERIOD AFTER THE EFFECTIVE DATE OF THE ISSUER'S REGISTRATION STATEMENT FILED UNDER THE SECURITIES ACT, AS AMENDED, AS SET FORTH IN AN AGREEMENT BETWEEN THE COMPANY AND THE ORIGINAL HOLDER OF THESE SECURITIES, A COPY OF WHICH MAY BE OBTAINED AT THE ISSUER'S PRINCIPAL OFFICE. SUCH LOCK-UP PERIOD IS BINDING ON TRANSFEREES OF THESE SHARES.

8.12 Financing Documents. Each Lender understands and agrees that the conversion of the Notes into Conversion Shares may require such Lender's execution of certain agreements in the form agreed to by investors in the Next Equity Financing or Non-Qualified Next Equity Financing relating to the purchase and sale of such securities as well as registration, co-sale, rights of first refusal, rights of first offer and voting rights, if any, relating to such securities; provided, however, that in no event shall conversion be conditioned upon any Lender be required to agree to undertake liability under any compelled voting (i.e., drag along provisions) for any third party (other than the Company) or that exceeds the consideration received or to be received by such party or to grant any proxy with respect to voting of shares.

8.13 MFN Right. In the event that the Company issues convertible notes (or similar convertible instruments) at any time after the date hereof which have terms that are more favorable to the Lenders than the terms of the Notes, such as, but not limited to, a higher interest rate, lower capped valuation or larger discount to the applicable conversion price, but which shall not include any Board representation or observer rights afforded to a specific Lender by reason of the magnitude of their investment (the "MFN Notes"), the Company shall promptly amend the terms of the Notes to provide substantially equivalent terms to the Lender as the MFN Notes without further consideration.

8.14 Exculpation Among Lenders. Each Lender acknowledges that it is not relying upon any person, firm, corporation or stockholder, other than the Company and its officers and directors in their capacities as such, in making its investment or decision to invest in

the Company. Each Lender agrees that no other Lender nor the respective controlling persons, officers, directors, partners, agents, stockholders or employees of any other Lender shall be liable for any action heretofore or hereafter taken or omitted to be taken by any of them in connection with the purchase and sale of the Securities.

8.15 Acknowledgement. In order to avoid doubt, it is acknowledged that each Lender shall be entitled to the benefit of all adjustments in the number of shares of Common Stock of the Company directly or indirectly issuable upon conversion of the Notes or as a result of any splits, recapitalizations, combinations or other similar transaction affecting the Common Stock or the Conversion Shares.

8.16 Indemnity; Costs, Expenses and Attorneys' Fees. The Company shall indemnify and hold each Lender harmless from any loss, cost, liability and legal or other expense, including attorneys' fees of such Lender's counsel, which a Lender may directly or indirectly suffer or incur by reason of the failure of the Company to perform any of its obligations under this Agreement, any Note, any agreement executed in connection herewith or therewith, any grant of or exercise of remedies with respect to any collateral at any time securing any obligations evidenced by this Agreement or the Notes, or any Lender's execution or performance of this Agreement or any agreement executed in connection herewith; provided, however, the indemnity agreement contained in this section shall not apply to liabilities which a Lender may directly or indirectly suffer or incur by reason of Lender's own gross negligence or willful misconduct.

8.17 Further Assurance. From time to time, the Company shall use its commercially reasonable efforts to execute and deliver to the Lenders such additional documents to the Lenders as the Requisite Noteholders may reasonably require to carry out the terms of this Agreement and the Notes and any agreements executed in connection herewith or therewith.

8.18 Dispute Resolution. The parties (a) hereby irrevocably and unconditionally submit to the jurisdiction of the state courts of State of Delaware and to the jurisdiction of the United States District Court for the District of Delaware for the purpose of any suit, action or other proceeding arising out of or based upon this Agreement, (b) agree not to commence any suit, action or other proceeding arising out of or based upon this Agreement except in the state courts of or the United States District Court for the District of Delaware, and (c) hereby waive, and agree not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the foregoing courts, that its property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court.

8.19 Waiver of Jury Trial. TO THE EXTENT EACH MAY LEGALLY DO SO, EACH PARTY HERETO HEREBY EXPRESSLY WAIVES ANY RIGHT TO TRIAL BY JURY OF ANY CLAIM, DEMAND, ACTION, CAUSE OF ACTION, OR PROCEEDING ARISING UNDER OR WITH RESPECT TO THIS AGREEMENT, OR IN ANY WAY CONNECTED WITH, OR RELATED TO, OR INCIDENTAL TO, THE DEALING OF THE PARTIES HERETO WITH RESPECT TO THIS AGREEMENT, OR THE

TRANSACTIONS RELATED THERETO, IN EACH CASE WHETHER NOW EXISTING OR HEREAFTER ARISING, AND IRRESPECTIVE OF WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE. TO THE EXTENT EACH MAY LEGALLY DO SO, EACH PARTY HERETO HEREBY AGREES THAT ANY SUCH CLAIM, DEMAND, ACTION, OR PROCEEDING SHALL BE DECIDED BY A COURT TRIAL WITHOUT A JURY AND THAT EITHER PARTY HERETO MAY FILE AN ORIGINAL COUNTERPART OR A COPY OF THIS AGREEMENT WITH ANY COURT AS WRITTEN EVIDENCE OF THE CONSENT OF ANY OTHER PARTY HERETO TO THE WAIVER OF ITS RIGHT TO TRIAL BY JURY.

8.20 Survival. The representations, warranties, covenants and agreements made herein shall survive the closing of the transactions contemplated hereby.

8.21 Spousal Consent. If any individual Common Holder is married on the date of this Agreement, such Common Holder's spouse shall execute and deliver to the Company a consent of spouse in the form of Exhibit H hereto ("Consent of Spouse"), effective on the date hereof. Notwithstanding the execution and delivery thereof, such consent shall not be deemed to confer or convey to the spouse any rights in such Common Holder's Shares that do not otherwise exist by operation of law or the agreement of the parties. If any individual Common Holder should marry or remarry subsequent to the date of this Agreement, such Common Holder shall within thirty (30) days thereafter obtain his/her new spouse's acknowledgement of and consent to the existence and binding effect of all restrictions contained in this Agreement by causing such spouse to execute and deliver a Consent of Spouse acknowledging the restrictions and obligations contained in this Agreement and agreeing and consenting to the same.

8.22 Limitation of Liability; Freedom to Operate Affiliates.

(a) Other than as set forth below Section 8.22(b), the total liability, in the aggregate, of each Lender, and their respective Affiliates and their respective officers, directors, employees, consultants and agents, for any and all monetary claims, losses, costs or damages, including attorneys' and accountants' fees and expenses and costs of any nature whatsoever or claims or expenses resulting from or in any way related to this Agreement or the Notes from any cause or causes shall be several and not joint with the other Lenders and shall not exceed the total Consideration paid to the Company by such Lender for the Notes under this Agreement; provided, however, that this Section 8.22 shall (i) in no way limit the Company's right to equitable relief, including injunctive relief and specific performance from a Lender, (ii) apply to breaches of a Lender's confidentiality obligation, or (iii) limit liability for a Lender's conduct that is judicially determined to be bad faith, fraud or willful misconduct. Nothing in this Agreement or the Notes shall restrict a Lender's freedom to operate any of its Affiliates.

(b) Nothing in Section 8.22(a) shall modify any Lender's confidentiality obligations or the fiduciary duties of any director designated by Lender or the contractual restrictions on any Lender-designated Board observer.

[Signature pages follow.]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**PHATHOM PHARMACEUTICALS, INC.**

By: /s/ David Socks  
Name: David Socks  
Title: President and Chief Executive Officer

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**FRAZIER LIFE SCIENCES IX, L.P.**

By: FHMLS IX, L.P.  
Its general partner

By: FHMLS IX, L.L.C.  
Its general partner

By: /s/ James Topper

Name: James Topper

Title: Managing Director

Address: c/o Frazier Healthcare Partners  
70 Willow Road, Suite 200  
Menlo Park, CA 94025  
Attn: James Topper

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**MEDICXI GROWTH CO-INVEST I LP**

By: its manager Medicxi Ventures Management (Jersey) Limited

/s/ Alex Di Santo

\_\_\_\_\_  
**Director**

**MEDICXI GROWTH I LP**

By: its manager Medicxi Ventures Management (Jersey) Limited

/s/ Alex Di Santo

\_\_\_\_\_  
**Director**

Address: Medicxi Ventures Management (Jersey) Limited  
44 Esplanade  
St Helier  
Jersey JE4 9WG  
Channel Islands

Attention: Giles Johnstone-Scott  
Tel:  
E-mail:

with mandatory copy to:

Medicxi Ventures (UK) LLP  
25 Great Pulteney Street  
London  
W1F 9LT  
Attention:  
Email:

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**RA CAPITAL HEALTHCARE FUND, L.P.**

By: RA Capital Management, LLC  
Its: General Partner

By: /s/ Natasha Kassian  
Name: Natasha Kassian  
Title: Authorized Signatory

Address: RA Capital Management, LLC  
20 Park Plaza  
Suite 1200  
Boston, MA 02116  
Attn: General Counsel

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**



IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**BLACKWELL PARTNERS LLC – SERIES A**

By: /s/ Adrienne C. Clough  
Name: Adrienne C. Clough  
Title: Investment Manager  
DUMAC, Inc., Authorized Agent

By: /s/ Jannine M. Lall  
Name: Jannine M. Lall  
Title: Head of Finance & Controller  
DUMAC, Inc., Authorized Agent

Address: Blackwell Partners LLC – Series A  
280 S. Mangum Street  
Suite 210  
Durham, NC 27701  
Attn: Jannine Lall

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**ABINGWORTH BIOVENTURES VII LP  
acting by its Manager Abingworth LLP**

By: /s/ James Abell

Name: James Abell

Title: Partner

Address: c/o Abingworth LLP  
38 Jermyn Street  
London SW1Y 6DN  
United Kingdom  
Attn: General Counsel  
Email:

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**JANUS HENDERSON GLOBAL LIFE SCIENCES FUND**

By: /s/ Andrew Acker  
Name: Andrew Acker  
Title: Portfolio Manager and Authorized Signatory

**JANUS HENDERSON CAPITAL FUNDS PLC ON BEHALF OF ITS SERIES JANUS HENDERSON GLOBAL LIFE SCIENCES FUND**

By: /s/ Andrew Acker  
Name: Andrew Acker  
Title: Portfolio Manager and Authorized Signatory

**JANUS HENDERSON HORIZON FUND – BIOTECHNOLOGY FUND**

By: /s/ Andrew Acker  
Name: Andrew Acker  
Title: Portfolio Manager and Authorized Signatory

Address: c/o Janus Capital Management LLC  
151 Detroit Street  
Denver, CO 80206  
Boston, MA 02116  
Attn: Andy Acker  
Attn: Angela Morton  
Email:

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**BIOTECHNOLOGY VALUE FUND, LP**

By: /s/ Mark Lampert \_\_\_\_\_

Name: Mark Lampert

Title: President BVF Inc., General Partner of BVF  
Partners L.P., itself GP of Biotechnology Value  
Fund, L.P.

Address:

44 Montgomery Street, 40th  
Floor San Francisco, CA 94104

With a copy to (which shall not constitute notice):

Gibson, Dunn & Crutcher LLP  
555 Mission Street, Suite 3000  
San Francisco, CA 94105  
Attention: Ryan A. Murr

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**BIOTECHNOLOGY VALUE FUND II, LP**

By: /s/ Mark Lampert \_\_\_\_\_  
Name: Mark Lampert  
Title: President BVF Inc., General Partner of BVF  
Partners L.P., itself GP of Biotechnology Value Fund  
II, L.P.

Address:

44 Montgomery Street, 40th  
Floor San Francisco, CA 94104

With a copy to (which shall not constitute notice):

Gibson, Dunn & Crutcher LLP  
555 Mission Street, Suite 3000  
San Francisco, CA 94105  
Attention: Ryan A. Murr

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IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**BIOTECHNOLOGY VALUE TRADING FUND OS,  
L.P.**

By: /s/ Mark Lampert

Name: Mark Lampert

Title: President BVF Inc., General Partner of BVF  
Partners L.P., itself sole member of BVF Partners  
OS Ltd., itself GP of Biotechnology Trading Fund  
OS, L.P.

Address:

PO Box 309 Ugland House, Grand Cayman,  
KY1- 1104, Cayman Islands

With a copy to (which shall not constitute notice):

Gibson, Dunn & Crutcher LLP  
555 Mission Street, Suite 3000  
San Francisco, CA 94105  
Attention: Ryan A. Murr

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IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**MSI BVF SPV, L.L.C.**

c/o Magnitude Capital

By: /s/ Mark Lampert

Name: Mark Lampert

Title: President BVF Inc., itself General Partner of  
BVF Partners L.P., itself attorney-in-fact for  
MSI BVF SPV, L.L.C.

Address:

200 Park Avenue, 56<sup>th</sup> Floor  
New York, NY 10166

With a copy to (which shall not constitute notice):

Gibson, Dunn & Crutcher LLP  
555 Mission Street, Suite 3000  
San Francisco, CA 94105  
Attention: Ryan A. Murr

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**RICHARD KING MELLON FOUNDATION**

By: /s/ Douglas L. Sisson  
Name: Douglas L. Sisson  
Title: Vice President and Treasurer

**MELLON FAMILY INVESTMENT COMPANY V**

By: its General Partner, MFIC V, LLC

By: /s/ Lawrence S. Busch  
Name: Lawrence S. Busch  
Title: Member

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**



IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**GREENSPRING EARLY STAGE I, L.P.**

By: Greenspring Early Stage General Partner I, L.P.  
its general partner

By: Greenspring Early Stage GP I, LLC  
its general partner

By: Greenspring Associates, Inc.  
its sole member

By:  /s/ Eric Thompson

Name: Eric Thompson

Title: Chief Operating Officer

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**GREENSPRING EARLY STAGE I-G, L.P.**

By: Greenspring Early Stage General Partner I, L.P.  
its general partner

By: Greenspring Early Stage GP I, LLC  
its general partner

By: Greenspring Associates, Inc.  
its sole member

By: /s/ Eric Thompson

Name: Eric Thompson

Title: Chief Operating Officer

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**MARSHFIELD ADVISERS, LLC**

By: /s/ Scott Carman \_\_\_\_\_

Name: Scott Carman

Title: Head of Private Equity

Address:

Marshfield Advisers, LLC

60 East South Temple Street, Suite 400

Salt Lake City, UT 84111

Attn: Scott Carman, Head of Private Equity

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**CATALYS PACIFIC FUND, L.P.**

**General Partner:**

**Catalys Pacific Fund GP, L.P.**

By: Catalys Pacific, LLC, its general partner

By: /s/ Brian Taylor Slingsby

Name: Brian Taylor Slingsby, MD, PhD, MPH

Title: Managing Director

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**LENDERS:**

**SAHSEN VENTURES, LLC**

By: /s/ Bryan White

Name: Bryan White

Title: Managing Member

Emails to:

With copies to:

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

**COMMON HOLDERS:**

David A. Socks 2013 Revocable Trust

By:  /s/ David Socks  
Name: David Socks  
Title:

/s/ Tadataka Yamada  
Tadataka Yamada

/s/ Azmi Nabulsi  
Azmi Nabulsi

/s/ Roger Ulrich  
Roger Ulrich

/s/ Aditya Kohli  
Aditya Kohli

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

Executed as of the date first above written, solely with respect to Section 1(ff), Section 7.2, Section 7.4, Section 7.6 and Section 8.8 of this Agreement and not as a "Party" to this Agreement for any other reason:

**TAKEDA:**

Takeda Pharmaceutical Company Limited

By: /s/ Fumihiko Sato

Name: Fumihiko Sato

Title: Head of Portfolio Strategic Relations

**SIGNATURE PAGE TO  
NOTE PURCHASE AGREEMENT**

**SCHEDULE OF LENDERS**

**INITIAL CLOSING**

<u>Lender</u>	<u>Total Consideration (Principal Balance of Promissory Note)</u>
Frazier Life Sciences IX, L.P.	\$ 2,427,747.62(1)
Frazier Life Sciences IX, L.P.	\$ 17,572,252.38
Medicxi Growth Co-Invest I LP	\$ 348,076.92
Medicxi Growth I LP	\$ 14,651,923.08
RA Capital Healthcare Fund, L.P.	\$ 12,756,000.00
Blackwell Partners LLC – Series A	\$ 2,244,000.00
Abingworth Bioventures VII LP	\$ 10,000,000.00
Janus Henderson Global Life Sciences Fund	\$ 6,278,000.00
Janus Henderson Capital Funds plc on behalf of its series Janus Henderson Global Life Sciences Fund	\$ 3,634,000.00
Janus Henderson Horizon Fund – Biotechnology Fund	\$ 88,000.00
Biotechnology Value Fund, LP	\$ 3,708,000.00
Biotechnology Value Fund II, LP	\$ 2,996,000.00
Biotechnology Value Trading Fund OS, LP	\$ 536,000.00
MSI BVF SPV L.L.C.	\$ 260,000.00
Richard King Mellon Foundation	\$ 1,500,000.00
Mellon Family Investment Company V	\$ 1,500,000.00
Greenspring Early Stage I, L.P.	\$ 2,474,051.00
Greenspring Early Stage I-G, L.P.	\$ 525,949.00
Marshfield Advisers, LLC	\$ 2,500,000.00
Sahsen Ventures, LLC	\$ 750,000.00
<b>INITIAL CLOSING TOTAL</b>	<b><u>\$ 86,750,000.00</u></b>



(1) The Consideration for this Note is an exchange for the existing convertible notes issued by the Company to Frazier as of the Initial Closing, which shall be null and void upon the issuance of the Note in the amount of \$2,427,747.62, representing the principal and accrued interest on such convertible notes as of the Initial Closing.

### SECOND CLOSING

<u>Lender</u>	<u>Total Consideration (Principal Balance of Promissory Note)</u>
Catalys Pacific Fund, L.P.	\$ 3,500,000.00
<b>SECOND CLOSING TOTAL</b>	<b>\$ 3,500,000.00</b>
<b>TOTAL FOR ALL CLOSINGS</b>	<b>\$ 90,250,000.00</b>

PHATHOM PHARMACEUTICALS, INC.

AMENDMENT TO NOTE PURCHASE AGREEMENT

This Amendment (this "Amendment") to the Note Purchase Agreement, dated as of May 7, 2019 (the "Purchase Agreement"), by and between Phathom Pharmaceuticals, Inc., a Delaware corporation (the "Company"), and the Lenders named on the Schedule of Lenders attached thereto, and the Common Holders, is made as of July 26, 2019 (the "Effective Date"). The Company, the Lenders and the Common Holders are sometimes referred to in this Amendment collectively as the "Parties" and individually as a "Party".

**WHEREAS**, pursuant to Section 8.8 of the Purchase Agreement any term of the Purchase Agreement may be amended and the observance of any term of the Purchase Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively), with the written consent of the Company and the Requisite Noteholders;

**WHEREAS**, Section 7.4 of the Purchase Agreement shall not be amended or waived with respect to Takeda without the written consent of Takeda; and

**WHEREAS**, Takeda and the undersigned Lenders representing the Requisite Noteholders desire to amend the Purchase Agreement to provide for the termination of certain covenants contained in the Purchase Agreement upon the consummation of certain events.

**NOW, THEREFORE**, in consideration of the mutual covenants contained herein, and for other good and valuable consideration, the sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. Definitions. Capitalized terms used but not defined in this Amendment shall have the meanings ascribed to them in the Purchase Agreement.
2. Amendments.
  - (a) The following Section 7.3(f) is hereby added to the end of Section 7.3 of the Purchase Agreement:

“(f) Termination. The covenants set forth in this Section 7.3 shall terminate and be of no further force or effect upon (i) the consummation of the Initial Public Offering, (ii) when the Company first becomes subject to the periodic reporting requirements of Sections 12(g) or 15(d) of the Exchange Act and (iii) upon the consummation of a Corporate Transaction, whichever event shall first occur.”
  - (b) The following Section 7.4(c) is hereby added to the end of Section 7.4 of the Purchase Agreement:
  - (c) Termination. This Section 7.4 shall be effective as of the date of this Agreement and shall continue in effect until and shall

terminate upon the earliest to occur of (i) the consummation of the Initial Public Offering, (ii) when the Company first becomes subject to the periodic reporting requirements of Sections 12(g) or 15(d) of the Exchange Act and (iii) upon the consummation of a Corporate Transaction; provided that the provisions of Section 7.4 hereof will continue after the closing of any Sale of the Company to the extent necessary to enforce the provisions of Section 7.4 with respect to such Sale of the Company.”

(c) The following Section 7.9(d) is hereby added to the end of Section 7.9 of the Purchase Agreement:

“(d) Termination of Observer Rights. The rights described in this Section 7.9 shall terminate and be of no further force or effect upon (i) such time as Abingworth, RA Capital or Medicxi, as applicable, no longer hold a Note (or securities issued upon the conversion thereof) (ii) the consummation of the Initial Public Offering, (iii) when the Company first becomes subject to the periodic reporting requirements of Sections 12(g) or 15(d) of the Exchange Act and (iv) upon the consummation of a Corporate Transaction, whichever event shall first occur. The confidentiality obligations referenced in this Section 7.9 will survive for a period of five (5) years following any such termination.”

### 3. Miscellaneous.

(a) Except as specifically provided for in this Amendment, all of the terms and conditions of the Purchase Agreement shall remain in full force and effect.

(b) This Amendment shall be governed by and construed under the laws of the State of Delaware as applied to agreements among Delaware residents, made and to be performed entirely within the State of Delaware, without regard to any choice of laws rules that may result in the application of the laws of any other jurisdiction.

(c) This Amendment may be executed by electronic signature and in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one (1) and the same instrument. Counterparts may be delivered by facsimile, electronic mail (including pdf) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

[Signature pages follow]

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first above written.

**PHATHOM PHARMACEUTICALS, INC.**

By: /s/ David Socks

Name: David Socks

Title: President and Chief Executive Officer

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first above written.

**LENDERS:**

**FRAZIER LIFE SCIENCES IX, L.P.**

By: FHMLS IX, L.P.  
Its general partner

By: FHMLS IX, L.L.C.  
Its general partner

By:  /s/ James Topper

Name: James Topper

Title: Managing Director

Address: c/o Frazier Healthcare Partners  
70 Willow Road, Suite 200  
Menlo Park, CA 94025  
Attn: James Topper

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first above written.

**LENDERS:**

**MEDICXI GROWTH CO-INVEST I LP**

By: its manager Medicxi Ventures Management  
(Jersey) Limited

/s/ Nick McHardy

**Director**

**MEDICXI GROWTH I LP**

By: its manager Medicxi Ventures Management  
(Jersey) Limited

/s/ Nick McHardy

**Director**

Address: Medicxi Ventures Management  
(Jersey) Limited  
44 Esplanade  
St Helier  
Jersey JE4 9WG  
Channel Islands

Attention: Giles Johnstone-Scott

Tel:

E-mail:

with mandatory copy to:

Medicxi Ventures (UK) LLP  
25 Great Pulteney Street  
London  
W1F 9LT  
Attention:  
Email:

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first above written.

**LENDERS:**

**RA CAPITAL HEALTHCARE FUND, L.P.**

By: RA Capital Management, LLC  
Its: General Partner

By: /s/ Peter Kolchinsky

Name: Peter Kolchinsky

Title: Authorized Signatory

Address: RA Capital Management, LLC  
20 Park Plaza  
Suite 1200  
Boston, MA 02116  
Attn: General Counsel

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first above written.

**LENDERS:**

**BLACKWELL PARTNERS LLC – SERIES A**

By: /s/ Abayomi A. Adigun  
Name: Abayomi A. Adigun  
Title: Investment Manager  
DUMAC, Inc.  
Authorized Agent

By: /s/ Jannine M. Lall  
Name: Jannine M. Lall  
Title: Head of Finance & Controller  
DUMAC, Inc.  
Authorized Agent

Address: Blackwell Partners LLC – Series A  
280 S. Mangum Street  
Suite 210  
Durham, NC 27701  
Attn: Jannine Lall



IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first above written.

**LENDERS:**

**ABINGWORTH BIOVENTURES VII LP  
acting by its Manager Abingworth LLP**

By: /s/ John Heard  
Name: John Heard  
Title: General Counsel

Address: c/o Abingworth LLP  
38 Jermyn Street  
London SW1Y 6DN  
United Kingdom  
Attn: General Counsel  
Email: legal@abingworth.com

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first above written.

**COMMON HOLDERS:**

David A. Socks 2013 Revocable Trust

By: /s/ David Socks  
Name: David Socks  
Title: Trustee

/s/ Tadataka Yamada  
Tadataka Yamada

/s/ Azmi Nabulsi  
Azmi Nabulsi

/s/ Roger Ulrich  
Roger Ulrich

/s/ Aditya Kohli  
Aditya Kohli

Executed as of the date first above written, solely with respect to Section 7.4 and Section 8.8 of the Purchase Agreement and not as a "Party" to this Amendment for any other reason:

**TAKEDA PHARMACEUTICAL COMPANY  
LIMITED:**

Takeda Pharmaceutical Company Limited

By: /s/ Fumihiko Sato

Name: Fumihiko Sato

Title: Head of Portfolio Strategic Relations

## PHATHOM PHARMACEUTICALS, INC.

## 2019 EQUITY INCENTIVE PLAN

**1. Purpose.**

The purpose of the Plan is to advance the interests of the Company's stockholders by enhancing the Company's ability to attract, retain and motivate persons who make (or are expected to make) important contributions to the Company by providing such persons with equity ownership opportunities and thereby better aligning the interests of such persons with those of the Company's stockholders. Capitalized terms used in the Plan are defined in Section 11 below.

**2. Eligibility.**

Service Providers are eligible to be granted Awards under the Plan, subject to the limitations described herein.

**3. Administration and Delegation.**

(a) *Administration.* The Plan will be administered by the Administrator. The Administrator shall have authority to determine which Service Providers will receive Awards, to grant Awards and to set all terms and conditions of Awards (including, but not limited to, vesting, exercise and forfeiture provisions). In addition, the Administrator shall have the authority to take all actions and make all determinations contemplated by the Plan and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Administrator may correct any defect or ambiguity, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem necessary or appropriate to carry the Plan and any Awards into effect, as determined by the Administrator. The Administrator shall make all determinations under the Plan in the Administrator's sole discretion and all such determinations shall be final and binding on all persons having or claiming any interest in the Plan or in any Award.

(b) *Appointment of Committees.* To the extent permitted by Applicable Laws, the Board may delegate any or all of its powers under the Plan to one or more Committees. The Board may abolish any Committee at any time and re-vest in itself any previously delegated authority.

**4. Stock Available for Awards.**

(a) *Number of Shares.* Subject to adjustment under Section 8 hereof, Awards may be made under the Plan covering up to 1,029,400 shares of Common Stock. If any Award expires or lapses or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at or below the original issuance price), in any case in a manner that results in any shares of Common Stock covered by such Award not being issued or being so reacquired by the Company, the unused Common Stock covered by such Award shall again be available for the grant of Awards under the Plan. Further, shares of Common Stock delivered (either by actual delivery or attestation) to the Company by a Participant to satisfy the applicable exercise or purchase price of an Award and/or to satisfy any applicable tax withholding obligation (including shares retained by the Company from the Award being exercised or purchased and/or creating the tax obligation) shall be added to the number of shares of Common Stock available for the grant of Awards under the Plan. However, in the case of Incentive Stock Options (as hereinafter defined), the foregoing provisions shall be subject to any

limitations under the Code. Shares of Common Stock issued under the Plan may consist in whole or in part of authorized but unissued shares, shares purchased on the open market or treasury shares.

(b) *Substitute Awards.* In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Administrator may grant Awards in substitution for any options or other stock or stock-based awards granted prior to such merger or consolidation by such entity or an affiliate thereof. Substitute Awards may be granted on such terms as the Administrator deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the Plan. Substitute Awards shall not count against the overall share limit set forth in Section 4(a) hereof, except as may be required by reason of Section 422 of the Code.

## 5. *Stock Options.*

(a) *General.* The Administrator may grant Options to any Service Provider, subject to the limitations on Incentive Stock Options described below. The Administrator shall determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to Applicable Laws, as it considers necessary or advisable.

(b) *Incentive Stock Options.* The Administrator may grant Options intended to qualify as Incentive Stock Options only to employees of the Company, any of the Company's present or future "parent corporations" or "subsidiary corporations" as defined in Sections 424(e) or (f) of the Code, respectively, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code. All Options intended to qualify as Incentive Stock Options shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. Neither the Company nor the Administrator shall have any liability to a Participant, or any other party, (i) if an Option (or any part thereof) which is intended to qualify as an Incentive Stock Option fails to qualify as an Incentive Stock Option or (ii) for any action or omission by the Administrator that causes an Option not to qualify as an Incentive Stock Option, including without limitation, the conversion of an Incentive Stock Option to a Non-Qualified Stock Option or the grant of an Option intended as an Incentive Stock Option that fails to satisfy the requirements under the Code applicable to an Incentive Stock Option. Any Option that is intended to qualify as an Incentive Stock Option, but fails to so qualify for any reason, including without limitation, the portion of any Option becoming exercisable in excess of the \$100,000 limitation described in Treasury Regulation Section 1.422-4, shall be treated as a Non-Qualified Stock Option for all purposes.

(c) *Exercise Price.* The Administrator shall establish the exercise price of each Option and specify the exercise price in the applicable Award Agreement. The exercise price shall be not less than 100% of the Fair Market Value on the date the Option is granted. In the case of an Incentive Stock Option granted to an employee who, at the time of grant of the Option, owns (or is treated as owning under Section 424 of the Code) stock representing more than 10% of the voting power of all classes of stock of the Company (or a "parent corporation" or "subsidiary corporation" thereof within the meaning of Sections 424(e) or 424(f) of the Code, respectively), the per share exercise price shall be no less than 110% of the Fair Market Value on the date the Option is granted.

(d) *Duration of Options.* Each Option shall be exercisable at such times and subject to such terms and conditions as the Administrator may specify in the applicable Award Agreement, provided that the term of any Option shall not exceed ten years. In the case of an Incentive Stock Option granted to an employee who, at the time of grant of the Option, owns (or is treated as owning under Section 424 of the Code) stock representing more than 10% of the voting power of all classes of stock of the Company (or a "parent corporation" or "subsidiary corporation" thereof within the meaning of Sections 424(e) or 424(f) of the Code, respectively), the term of the Option shall not exceed five years.

(e) *Exercise of Option; Notification of Disposition.* Options may be exercised by delivery to the Company of a written notice of exercise, in a form approved by the Administrator (which may be an electronic form), signed by the person authorized to exercise the Option, together with payment in full (i) as specified in Section 5(f) hereof for the number of shares for which the Option is exercised and (ii) as specified in Section 9(e) hereof for any applicable withholding taxes. Unless otherwise determined by the Administrator, an Option may not be exercised for a fraction of a share of Common Stock. If an Option is designated as an Incentive Stock Option, the Participant shall give prompt notice to the Company of any disposition or other transfer of any shares of Common Stock acquired from the Option if such disposition or transfer is made (i) within two years from the grant date with respect to such Option or (ii) within one year after the transfer of such shares to the Participant (other than any such disposition made in connection with a Change in Control). Such notice shall specify the date of such disposition or other transfer and the amount realized, in cash, other property, assumption of indebtedness or other consideration, by the Participant in such disposition or other transfer.

(f) *Payment Upon Exercise.* Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for in cash, by wire transfer of immediately available funds or by check, payable to the order of the Company, or, subject to Section 10(h), any Company insider trading policy (including, without limitation, any blackout periods) and Applicable Laws, by:

(i) if the Company is a Publicly Listed Company, unless the Administrator otherwise determines, (A) delivery of an irrevocable and unconditional undertaking by a broker acceptable to the Company to deliver promptly to the Company sufficient funds to pay the exercise price, or (B) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a broker acceptable to the Company to deliver promptly to the Company cash or a check sufficient to pay the exercise price, provided in either case, that such amount is paid to the Company at such time as may be required by the Administrator;

(ii) to the extent permitted by the Administrator, delivery (either by actual delivery or attestation) of shares of Common Stock owned by the Participant valued at their Fair Market Value, provided (A) such method of payment is then permitted under Applicable Laws, (B) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Company at any time, and (C) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(iii) to the extent permitted by the Administrator, surrendering shares of Common Stock then issuable upon exercise of the Option valued at their Fair Market Value on the date of exercise;

(iv) to the extent permitted by the Administrator, delivery of a promissory note of the Participant to the Company on terms determined by the Administrator;

(v) to the extent permitted by the Administrator, delivery of property of any other kind which constitutes good and valuable consideration as determined by the Administrator; or

(vi) to the extent permitted by the Administrator, any combination of the above permitted forms of payment (including cash or check).

(g) *Early Exercise of Options.* The Administrator may provide in the terms of an Award Agreement that the Service Provider may exercise an Option in whole or in part prior to the full vesting of the Option in exchange for unvested shares of Restricted Stock with respect to any unvested

portion of the Option so exercised. Shares of Restricted Stock acquired upon the exercise of any unvested portion of an Option shall be subject to such terms and conditions as the Administrator shall determine.

#### **6. Restricted Stock; Restricted Stock Units.**

(a) *General.* The Administrator may grant Restricted Stock, or the right to purchase Restricted Stock, to any Service Provider, subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price from the Participant (or to require forfeiture of such shares if issued at no cost) in the event that conditions specified by the Administrator in the applicable Award Agreement are not satisfied prior to the end of the applicable restriction period or periods established by the Administrator for such Award. In addition, the Administrator may grant to Service Providers Restricted Stock Units, which may be subject to vesting and forfeiture conditions during applicable restriction period or periods, as set forth in an applicable Award Agreement.

(b) *Terms and Conditions for All Restricted Stock and Restricted Stock Unit Awards.* The Administrator shall determine and set forth in the applicable Award Agreement the terms and conditions applicable to each Restricted Stock and Restricted Stock Unit Award, including the conditions for vesting and repurchase (or forfeiture) and the issue price, in each case, if any.

##### *(c) Additional Provisions Relating to Restricted Stock.*

(i) *Dividends.* Participants holding shares of Restricted Stock will be entitled to all ordinary cash dividends paid with respect to such shares to the extent such dividends have a record date that is on or after the date on which the Participant to whom such Restricted Shares are granted becomes the record holder of such Restricted Shares, unless otherwise provided by the Administrator in the applicable Award Agreement. In addition, unless otherwise provided by the Administrator, if any dividends or distributions are paid in shares, or consist of a dividend or distribution to holders of Common Stock of property other than an ordinary cash dividend, the shares or other property will be subject to the same restrictions on transferability and forfeitability as the shares of Restricted Stock with respect to which they were paid. Each dividend payment will be made as provided in the applicable Award Agreement, but in no event later than the end of the calendar year in which the dividends are paid to stockholders of that class of stock or, if later, the 15th day of the third month following the later of (A) the date the dividends are paid to stockholders of that class of stock, and (B) the date the dividends are no longer subject to forfeiture.

(ii) *Stock Certificates.* The Company may require that any stock certificates issued in respect of shares of Restricted Stock be deposited in escrow by the Participant, together with a stock power endorsed in blank, with the Company (or its designee).

##### *(d) Additional Provisions Relating to Restricted Stock Units.*

(i) *Settlement.* Upon the vesting of a Restricted Stock Unit, the Participant shall be entitled to receive from the Company one share of Common Stock or an amount of cash or other property equal to the Fair Market Value of one share of Common Stock on the settlement date, as the Administrator shall determine and as provided in the applicable Award Agreement. The Administrator may provide that settlement of Restricted Stock Units shall occur upon or as soon as reasonably practicable after the vesting of the Restricted Stock Units or shall instead be deferred, on a mandatory basis or at the election of the Participant, in a manner that complies with Section 409A.

(ii) *Voting Rights.* A Participant shall have no voting rights with respect to any Restricted Stock Units unless and until shares are delivered in settlement thereof.

(iii) *Dividend Equivalents.* To the extent provided by the Administrator, a grant of Restricted Stock Units may provide a Participant with the right to receive Dividend Equivalents. Dividend Equivalents may be paid currently or credited to an account for the Participant, may be settled in cash and/or shares of Common Stock and may be subject to the same restrictions on transfer and forfeitability as the Restricted Stock Units with respect to which the Dividend Equivalents are paid, as determined by the Administrator, subject, in each case, to such terms and conditions as the Administrator shall establish and set forth in the applicable Award Agreement.

#### **7. Other Stock-Based Awards.**

Other Stock-Based Awards may be granted hereunder to Participants, including, without limitation, Awards entitling Participants to receive shares of Common Stock to be delivered in the future. Such Other Stock-Based Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan, as stand-alone payments and/or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock-Based Awards may be paid in shares of Common Stock, cash or other property, as the Administrator shall determine. Subject to the provisions of the Plan, the Administrator shall determine the terms and conditions of each Other Stock-Based Award, including any purchase price, transfer restrictions, vesting conditions and other terms and conditions applicable thereto, which shall be set forth in the applicable Award Agreement.

#### **8. Adjustments for Changes in Common Stock and Certain Other Events.**

(a) In the event that the Administrator determines that any dividend or other distribution (whether in the form of cash, Common Stock, other securities, or other property), reorganization, merger, consolidation, combination, repurchase, recapitalization, liquidation, dissolution, or sale, transfer, exchange or other disposition of assets of the Company, or exchange of Common Stock or other securities of the Company, issuance of warrants or other rights to purchase Common Stock or other securities of the Company, or other similar corporate transaction or event, as determined by the Administrator, affects the Common Stock such that an adjustment is determined by the Administrator to be appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended by the Company to be made available under the Plan or with respect to any Award, then the Administrator may, in such manner as it may deem equitable, adjust any or all of:

(i) the number and kind of shares of Common Stock (or other securities or property) with respect to which Awards may be granted or awarded (including, but not limited to, adjustments of the limitations in Section 4 hereof on the maximum number and kind of shares which may be issued);

(ii) the number and kind of shares of Common Stock (or other securities or property) subject to outstanding Awards;

(iii) the grant or exercise price with respect to any Award; and

(iv) the terms and conditions of any Awards (including, without limitation, any applicable financial or other performance “targets” specified in an Award Agreement).

(b) In the event of any transaction or event described in Section 8(a) hereof (including without limitation any Change in Control) or any unusual or nonrecurring transaction or event



affecting the Company or the financial statements or financial condition of the Company, or any change in any Applicable Laws or accounting principles, the Administrator, on such terms and conditions as it deems appropriate, either by the terms of the Award or by action taken prior to or after the occurrence of such transaction or event and either automatically or upon the Participant's request, is hereby authorized to take any one or more of the following actions whenever the Administrator determines that such action is appropriate in order to (i) prevent dilution or enlargement of the benefits or potential benefits intended by the Company to be made available under the Plan or with respect to any Award granted or issued under the Plan, (ii) to facilitate such transaction or event or (iii) give effect to such changes in Applicable Laws or accounting principles:

(i) To provide for the cancellation of any such Award in exchange for either an amount of cash or other property with a value equal to the amount that could have been obtained upon the exercise or settlement of such Award or realization of the Participant's rights had such Award been currently exercisable, payable and fully vested, as applicable; provided that, if the amount that could have been obtained upon the exercise or settlement of such Award or realization of the Participant's rights, in any case, is equal to or less than zero, then such Award may be terminated without payment;

(ii) To provide that such Award shall vest and, to the extent applicable, be exercisable as to all shares covered thereby, notwithstanding anything to the contrary in the Plan or the provisions of such Award;

(iii) To provide that such Award be assumed by the successor or survivor corporation, or a parent or subsidiary thereof, or shall be substituted for by awards covering the stock of the successor or survivor corporation, or a parent or subsidiary thereof, with appropriate adjustments as to the number and kind of shares and applicable exercise or purchase price, in all cases, as determined by the Administrator;

(iv) To make adjustments in the number and type of shares of Common Stock (or other securities or property) subject to outstanding Awards, and/or in the terms and conditions of (including the grant or exercise price), and the criteria included in, outstanding Awards which may be granted in the future;

(v) To replace such Award with other rights or property selected by the Administrator; and/or

(vi) To provide that the Award will terminate and cannot vest, be exercised or become payable after the applicable event.

(c) Notwithstanding the provisions of Section 8(b) above, if a Change in Control occurs and a Participant's Awards are not continued, converted, assumed, or replaced with a substantially similar award by (i) the Company, or (ii) a successor entity or its parent or subsidiary (an "**Assumption**"), and provided that the Participant has not had a Termination of Service, then, immediately prior to the Change in Control, such Awards shall become fully vested, exercisable and/or payable, as applicable, and all forfeiture, repurchase and other restrictions on such Awards shall lapse, in which case, such Awards shall be canceled upon the consummation of the Change in Control in exchange for the right to receive the Change in Control consideration payable to other holders of Common Stock (A) which may be on such terms and conditions as apply generally to holders of Common Stock under the Change in Control documents (including, without limitation, any escrow, earn-out or other deferred consideration provisions) or such other terms and conditions as the Administrator may provide, and (B) determined by reference to the number of shares subject to such Awards and net of any applicable exercise price; provided that to the extent that any Awards constitute "nonqualified deferred compensation" that may not

be paid upon the Change in Control under Section 409A without the imposition of taxes thereon under Section 409A, the timing of such payments shall be governed by the applicable Award Agreement (subject to any deferred consideration provisions applicable under the Change in Control documents); and provided, further, that if the amount to which a Participant would be entitled upon the settlement or exercise of such Award at the time of the Change in Control is equal to or less than zero, then such Award may be terminated without payment. The Administrator shall determine whether an Assumption of an Award has occurred in connection with a Change in Control.

(d) In connection with the occurrence of any Equity Restructuring, and notwithstanding anything to the contrary in this Section 8, the Administrator will equitably adjust each outstanding Award, which adjustments may include adjustments to the number and type of securities subject to each outstanding Award and/or the exercise price or grant price thereof, if applicable, the grant of new Awards to Participants, and/or the making of a cash payment to Participants, as the Administrator deems appropriate to reflect such Equity Restructuring. The adjustments provided under this Section 8(d) shall be nondiscretionary and shall be final and binding on the affected Participant and the Company; provided that whether an adjustment is equitable shall be determined by the Administrator.

(e) In the event of any pending stock dividend, stock split, combination or exchange of shares, merger, consolidation or other distribution (other than normal cash dividends) of Company assets to stockholders, or any other change affecting the shares of Common Stock or the share price of the Common Stock, including any Equity Restructuring, or if necessary to comply with Applicable Laws or the Code, or for reasons of administrative convenience, the Administrator may, in its sole discretion, refuse to permit the exercise of any Award during a period of up to thirty days prior to the consummation of any such transaction.

(f) Except as expressly provided in the Plan or pursuant to action of the Administrator under the Plan, no Participant shall have any rights by reason of any subdivision or consolidation of shares of stock of any class, the payment of any dividend, any increase or decrease in the number of shares of stock of any class or any dissolution, liquidation, merger, or consolidation of the Company or any other corporation. Except as expressly provided in the Plan or pursuant to action of the Administrator under the Plan, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number of shares of Common Stock subject to an Award or the grant or exercise price of any Award. The existence of the Plan, any Award Agreements and the Awards granted hereunder shall not affect or restrict in any way the right or power of the Company to make or authorize (i) any adjustment, recapitalization, reorganization or other change in the Company's capital structure or its business, (ii) any merger, consolidation dissolution or liquidation of the Company or sale of Company assets or (iii) any sale or issuance of securities, including without limitation, securities with rights superior to those of the Common Stock or which are convertible into or exchangeable for Common Stock. The Administrator may treat Participants and Awards (or portions thereof) differently under this Section 8.

#### **9. General Provisions Applicable to Awards.**

(a) *Transferability of Awards.* Except as the Administrator may otherwise determine or provide in an Award Agreement or otherwise, in any case in accordance with Applicable Laws, Awards, including any interest therein, may not be sold, assigned, transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the life of the Participant, shall be exercisable only by the Participant. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees.

(b) *Documentation.* Each Award shall be evidenced in an Award Agreement, which may be in such form (written, electronic or otherwise) as the Administrator shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) *Discretion.* Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award to a Participant need not be identical, and the Administrator need not treat Participants or Awards (or portions thereof) uniformly.

(d) *Termination of Status.* The Administrator shall determine the effect on an Award of the disability, death, retirement, authorized leave of absence or any other change or purported change in a Participant's Service Provider status and the extent to which, and the period during which, the Participant, the Participant's legal representative, conservator, guardian or Designated Beneficiary may exercise rights under the Award, if applicable.

(e) *Withholding.* Each Participant shall pay to the Company, or make provision satisfactory to the Administrator for payment of, any taxes required by law to be withheld in connection with Awards to such Participant no later than the date of the event creating the tax liability. Except as the Administrator may otherwise determine, all such payments shall be made in cash, by wire transfer of immediately available funds or by check, payable to the order of the Company. Notwithstanding the foregoing, Participants may satisfy such tax obligations, subject to Section 10(h), any Company insider trading policy (including blackout periods) and Applicable Laws, to the extent permitted by the Administrator, (i) in whole or in part by delivery of shares of Common Stock, including shares of Common Stock retained from the Award creating the tax obligation, valued at their Fair Market Value, and (ii) if there is a public market for shares of Common Stock at the time the tax obligations are satisfied, unless the Administrator otherwise determines, (A) delivery (including, without limitation, telephonically to the extent permitted by the Company) of an irrevocable and unconditional undertaking by a broker acceptable to the Company to deliver promptly to the Company sufficient funds to satisfy the tax obligations, or (B) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a broker acceptable to the Company to deliver promptly to the Company cash or a check sufficient to satisfy the tax withholding; provided that such amount is paid to the Company at such time as may be required by the Administrator. The number of shares of Common Stock which may be so withheld or surrendered shall be limited to the number of shares of Common Stock which have a Fair Market Value on the date of withholding or repurchase no greater than the aggregate amount of such liabilities based on the minimum statutory withholding rates for federal, state, local and foreign income tax and payroll tax purposes that are applicable to such supplemental taxable income. The Company may, to the extent permitted by Applicable Laws, deduct any such tax obligations from any payment of any kind otherwise due to a Participant.

(f) *Amendment of Award.* The Administrator may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or settlement, and converting an Incentive Stock Option to a Non-Qualified Stock Option. The Participant's consent to such action shall be required unless (i) the Administrator determines that the action, taking into account any related action, would not materially and adversely affect the Participant, or (ii) the change is permitted under Section 8 and 10(f) hereof.

(g) *Conditions on Delivery of Stock.* The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed

and delivered to the Company such representations or agreements as the Administrator deems necessary or appropriate to satisfy the requirements of any Applicable Laws. The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is determined by the Administrator to be necessary to the lawful issuance and sale of any securities hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such shares as to which such requisite authority shall not have been obtained.

(h) *Acceleration.* The Administrator may at any time provide that any Award shall become vested and/or exercisable in full or in part, free of some or all restrictions or conditions, or otherwise realizable in full or in part, as the case may be.

#### 10. *Miscellaneous.*

(a) *No Right To Employment or Other Status.* No person shall have any claim or right to be granted an Award, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan or any Award, except as expressly provided in an applicable Award Agreement.

(b) *No Rights As Stockholder; Certificates.* Subject to the provisions of the applicable Award Agreement, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares. Notwithstanding any other provision of the Plan, unless otherwise determined by the Administrator or required by any Applicable Laws, the Company shall not be required to deliver to any Participant certificates evidencing shares of Common Stock issued in connection with any Award and instead such shares of Common Stock may be recorded in the books of the Company (or, as applicable, its transfer agent or stock plan administrator). The Company may place legends on stock certificates issued under the Plan deemed necessary or appropriate by the Administrator in order to comply with Applicable Laws.

(c) *Effective Date and Term of Plan.* The Plan shall become effective on the date on which it is adopted by the Board. No Awards shall be granted under the Plan after the completion of ten years from the earlier of (i) the date on which the Plan was adopted by the Board or (ii) the date the Plan was approved by the Company's stockholders, but Awards previously granted may extend beyond that date in accordance with the terms of the Plan.

(d) *Amendment of Plan.* The Administrator may amend, suspend or terminate the Plan or any portion thereof at any time; provided that no amendment of the Plan shall materially and adversely affect (as determined by the Administrator) any Award outstanding at the time of such amendment without the consent of the affected Participant. Awards outstanding under the Plan at the time of any suspension or termination of the Plan shall continue to be governed in accordance with the terms of the Plan and the applicable Award Agreement, as in effect prior to such suspension or termination. The Board shall obtain stockholder approval of any Plan amendment to the extent necessary to comply with Applicable Laws.

(e) *Provisions for Foreign Participants.* The Administrator may modify Awards granted to Participants who are foreign nationals or employed outside the United States or establish subplans or procedures under the Plan to address differences in laws, rules, regulations or customs of such foreign jurisdictions with respect to tax, securities, currency, employee benefit or other matters.

(f) Section 409A.

(i) *General.* The Company intends that all Awards be structured in compliance with, or to satisfy an exemption from, Section 409A, such that no adverse tax consequences, interest, or penalties under Section 409A apply in connection with any Awards. Notwithstanding anything herein or in any Award Agreement to the contrary, the Administrator may, without a Participant's prior consent, amend this Plan and/or Awards, adopt policies and procedures, or take any other actions (including amendments, policies, procedures and actions with retroactive effect) as are necessary or appropriate to preserve the intended tax treatment of Awards under the Plan, including without limitation, any such actions intended to (A) exempt this Plan and/or any Award from the application of Section 409A, and/or (B) comply with the requirements of Section 409A, including without limitation any such regulations, guidance, compliance programs and other interpretative authority that may be issued after the date of grant of any Award. The Company makes no representations or warranties as to the tax treatment of any Award under Section 409A or otherwise. The Company shall have no obligation under this Section 10(f) or otherwise to take any action (whether or not described herein) to avoid the imposition of taxes, penalties or interest under Section 409A with respect to any Award and shall have no liability to any Participant or any other person if any Award, compensation or other benefits under the Plan are determined to constitute non-compliant, "nonqualified deferred compensation" subject to the imposition of taxes, penalties and/or interest under Section 409A.

(ii) *Separation from Service.* With respect to any Award that constitutes "nonqualified deferred compensation" under Section 409A, any payment or settlement of such Award that is to be made upon a termination of a Participant's Service Provider relationship shall, to the extent necessary to avoid the imposition of taxes under Section 409A, be made only upon the Participant's "separation from service" (within the meaning of Section 409A), whether such "separation from service" occurs upon or subsequent to the termination of the Participant's Service Provider relationship. For purposes of any such provision of this Plan or any Award Agreement relating to any such payments or benefits, references to a "termination," "termination of employment" or like terms shall mean "separation from service."

(iii) *Payments to Specified Employees.* Notwithstanding any contrary provision in the Plan or any Award Agreement, any payment(s) of "nonqualified deferred compensation" that are otherwise required to be made under an Award to a "specified employee" (as defined under Section 409A and determined by the Administrator) as a result of his or her "separation from service" shall, to the extent necessary to avoid the imposition of taxes under Code Section 409A(a)(2)(B)(i), be delayed until the expiration of the six-month period immediately following such "separation from service" (or, if earlier, until the date of death of the specified employee) and shall instead be paid (in a manner set forth in the Award agreement) on the day that immediately follows the end of such six-month period or as soon as administratively practicable thereafter (without interest). Any payments of "nonqualified deferred compensation" under such Award that are, by their terms, payable more than six months following the Participant's "separation from service" shall be paid at the time or times such payments are otherwise scheduled to be made.

(g) *Limitations on Liability.* Notwithstanding any other provisions of the Plan, no individual acting as a director, officer, other employee or agent of the Company will be liable to any Participant, former Participant, spouse, beneficiary, or any other person for any claim, loss, liability, or expense incurred in connection with the Plan or any Award, nor will such individual be personally liable with respect to the Plan because of any contract or other instrument he or she executes in his or her capacity as an Administrator, director, officer, other employee or agent of the Company. The Company

will indemnify and hold harmless each director, officer, other employee and agent of the Company to whom any duty or power relating to the administration or interpretation of the Plan has been or will be granted or delegated, against any cost or expense (including attorneys' fees) or liability (including any sum paid in settlement of a claim with the Administrator's approval) arising out of any act or omission to act concerning this Plan unless arising out of such person's own fraud or bad faith.

(h) *Lock-Up Period.* The Company may, at the request of any representative of the underwriters or otherwise, in connection with any registration of the offering of any securities of the Company under the Securities Act, prohibit Participants from, directly or indirectly, selling or otherwise transferring any shares of Common Stock or other securities of the Company during a period of up to one hundred eighty days following the effective date of a registration statement of the Company filed under the Securities Act.

(i) *Right of First Refusal.*

(i) Before any shares of Common Stock held by a Participant or any permitted transferee (each, a "**Holder**") may be sold, pledged, assigned, hypothecated, transferred, or otherwise disposed of (each, a "**Transfer**"), the Company or its assignee(s) shall have a right of first refusal to purchase the shares of Common Stock proposed to be Transferred on the terms and conditions set forth in this Section 10(i) (the "**Right of First Refusal**"). In the event that the Company's charter, bylaws and/or a stockholders' agreement applicable to the shares of Common Stock contain a right of first refusal with respect to the shares of Common Stock, such right of first refusal shall apply to the shares of Common Stock to the extent such provisions are more restrictive than the Right of First Refusal set forth in this Section 10(i) and the Right of First Refusal set forth in this Section 10(i) shall not in any way restrict the operation of the Company's charter, bylaws or the operation of any applicable stockholders' agreement.

(ii) In the event any Holder desires to Transfer any shares of Common Stock, the Holder shall deliver to the Company a written notice (the "**Notice**") stating: (A) the Holder's bona fide intention to sell or otherwise Transfer such shares of Common Stock; (B) the name of each proposed purchaser or other transferee ("**Proposed Transferee**"); (C) the number of shares of Common Stock to be Transferred to each Proposed Transferee; and (D) the price for which the Holder proposes to Transfer the shares of Common Stock (the "**Offered Price**"), and the Holder shall offer such shares of Common Stock at the Offered Price to the Company or its assignee(s).

(iii) Within twenty-five days after receipt of the Notice, the Company and/or its assignee(s) may elect in writing to purchase all, but not less than all, of the shares of Common Stock proposed to be Transferred to any one or more of the Proposed Transferees by delivery of a written exercise notice to the Holder (a "**Company Notice**"). The purchase price ("**Purchase Price**") for the shares of Common Stock repurchased under this Section 10(i) shall be the Offered Price.

(iv) Payment of the Purchase Price shall be made, at the option of the Company or its assignee(s), in cash (by check or wire transfer), by cancellation of all or a portion of any outstanding indebtedness of the Holder to the Company (or, in the case of repurchase by an assignee, to the assignee), or by any combination thereof, within five days after delivery of the Company Notice or in the manner and at the times mutually agreed to by the Company and the Holder. Should the Offered Price specified in the Notice be payable in property other than cash, the Company or its assignee shall have the right to pay the purchase price in the form of cash equal in amount to the value of such property, as determined by the Administrator.

(v) If all or a portion of the shares of Common Stock proposed in the Notice to be Transferred are not purchased by the Company and/or its assignee(s) as provided in this Section 10(i), then the Holder may sell or otherwise Transfer such shares of Common Stock to that Proposed Transferee at the Offered Price or at a higher price; provided that such sale or other Transfer is consummated within sixty days after the date of the Notice; and provided, further, that any such sale or other Transfer is effected in accordance with any Applicable Laws and the Proposed Transferee agrees in writing that the provisions of this Plan and the applicable Award Agreement and any other applicable agreements governing the shares of Common Stock to be Transferred shall continue to apply to the shares of Common Stock in the hands of such Proposed Transferee. If the shares of Common Stock described in the Notice are not Transferred to the Proposed Transferee within such sixty-day period, a new Notice shall be given to the Company, and the Company and/or its assignees shall again be offered the Right of First Refusal, as provided herein, before any shares of Common Stock held by the Holder may be sold or otherwise Transferred.

(vi) Anything to the contrary contained in this Section 10(i) notwithstanding and to the extent permitted by the Administrator, the Transfer of any or all of the shares of Common Stock during a Participant's lifetime or upon a Participant's death by will or intestacy to the Participant's Immediate Family or a trust for the benefit of the Participant's Immediate Family shall be exempt from the Right of First Refusal. As used herein, "**Immediate Family**" shall mean spouse, lineal descendant or antecedent, father, mother, brother or sister or stepchild (whether or not adopted). In such case, the transferee or other recipient shall receive and hold the shares of Common Stock so Transferred subject to the provisions of this Plan (including the Right of First Refusal), the applicable Award Agreement and any other applicable agreements governing the shares of Common Stock to be Transferred, and there shall be no further Transfer of such shares of Common Stock except in accordance with the terms of this Section 10(i) (or otherwise as expressly provided under the Plan).

(vii) The Right of First Refusal shall terminate as to all shares of Common Stock if the Company becomes a Publicly Listed Company upon such occurrence.

(j) *Data Privacy.* As a condition of receipt of any Award, each Participant explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of personal data as described in this paragraph by and among, as applicable, the Company and its subsidiaries and affiliates for the exclusive purpose of implementing, administering and managing the Participant's participation in the Plan. The Company and its subsidiaries and affiliates may hold certain personal information about a Participant, including but not limited to, the Participant's name, home address and telephone number, date of birth, social security or insurance number or other identification number, salary, nationality, job title(s), any shares of stock held in the Company or any of its subsidiaries and affiliates, details of all Awards, in each case, for the purpose of implementing, managing and administering the Plan and Awards (the "**Data**"). The Company and its subsidiaries and affiliates may transfer the Data amongst themselves as necessary for the purpose of implementation, administration and management of a Participant's participation in the Plan, and the Company and its subsidiaries and affiliates may each further transfer the Data to any third parties assisting the Company in the implementation, administration and management of the Plan. These recipients may be located in the Participant's country, or elsewhere, and the Participant's country may have different data privacy laws and protections than the recipients' country. Through acceptance of an Award, each Participant authorizes such recipients to receive, possess, use, retain and transfer the Data, in electronic or other form, for the purposes of implementing, administering and managing the Participant's participation in the Plan, including any requisite transfer of such Data as may be required to a broker or other third party with whom the Company or the Participant may elect to deposit any shares of Common Stock. The Data

related to a Participant will be held only as long as is necessary to implement, administer, and manage the Participant's participation in the Plan. A Participant may, at any time, view the Data held by the Company with respect to such Participant, request additional information about the storage and processing of the Data with respect to such Participant, recommend any necessary corrections to the Data with respect to the Participant or refuse or withdraw the consents herein in writing, in any case without cost, by contacting his or her local human resources representative. The Company may cancel Participant's ability to participate in the Plan and, in the Administrator's discretion, the Participant may forfeit any outstanding Awards if the Participant refuses or withdraws his or her consents as described herein. For more information on the consequences of refusal to consent or withdrawal of consent, Participants may contact their local human resources representative.

(k) *Severability*. In the event any portion of the Plan or any action taken pursuant thereto shall be held illegal or invalid for any reason, the illegality or invalidity shall not affect the remaining parts of the Plan, and the Plan shall be construed and enforced as if the illegal or invalid provisions had not been included, and the illegal or invalid action shall be null and void.

(l) *Governing Documents*. In the event of any contradiction between the Plan and any Award Agreement or any other written agreement between a Participant and the Company or any Subsidiary of the Company that has been approved by the Administrator, the terms of the Plan shall govern, unless it is expressly specified in such Award Agreement or other written document that a specific provision of the Plan shall not apply.

(m) *Governing Law*. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the State of Delaware, disregarding choice-of-law principles of the law of any state that would require the application of the laws of a jurisdiction other than such state.

(n) *Submission to Jurisdiction; Waiver of Jury Trial*. By accepting an Award, each Participant irrevocably and unconditionally consents to submit to the exclusive jurisdiction of the courts of the State of Delaware and of the United States of America, in each case located in the State of Delaware, for any action arising out of or relating to the Plan (and agrees not to commence any litigation relating thereto except in such courts), and further agrees that service of any process, summons, notice or document by U.S. registered mail to the address contained in the records of the Company shall be effective service of process for any litigation brought against it in any such court. By accepting an Award, each Participant irrevocably and unconditionally waives any objection to the laying of venue of any litigation arising out of Plan or Award hereunder in the courts of the State of Delaware or the United States of America, in each case located in the State of Delaware, and further irrevocably and unconditionally waives and agrees not to plead or claim in any such court that any such litigation brought in any such court has been brought in an inconvenient forum. By accepting an Award, each Participant irrevocably and unconditionally waives, to the fullest extent permitted by applicable law, any and all rights to trial by jury in connection with any litigation arising out of or relating to the Plan or any Award hereunder.

(o) *Restrictions on Shares; Claw-Back Provisions*. Awards and shares of Common Stock acquired in respect of Awards shall be subject to such terms and conditions as the Administrator shall determine, including, without limitation, restrictions on the transferability of shares of Common Stock, the right of the Company to repurchase shares of Common Stock, the right of the Company to require that shares of Common Stock be transferred in the event of certain transactions, tag-along rights, bring-along rights, redemption and co-sale rights and voting requirements. Such terms and conditions may be additional to those contained in the Plan and may, as determined by the Administrator, be contained in the applicable Award Agreement or in an exercise notice, stockholders' agreement or in such other agreement as the Administrator shall determine, in each case in a form determined by the



Administrator. The issuance of such shares of Common Stock shall be conditioned on the Participant's consent to such terms and conditions and the Participant's entering into such agreement or agreements. All Awards (including any proceeds, gains or other economic benefit actually or constructively received by Participant upon any receipt or exercise of any Award or upon the receipt or resale of any shares of Common Stock underlying the Award) shall be subject to the provisions of any claw-back policy implemented by the Company, including, without limitation, any claw-back policy adopted to comply with the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act and any rules or regulations promulgated thereunder, to the extent set forth in such claw-back policy and/or in the applicable Award Agreement. A Participant shall, as a condition to receiving an Award, agree to execute such further instruments and to take such further action as the Company requests to carry out the purposes and intent of the Plan and any Award, including, without limitation, restrictions on the transferability of shares of Common Stock, the right of the Company to repurchase shares of Common Stock, the right of the Company to require that shares of Common Stock be transferred in the event of certain transactions, tag-along rights, bring-along rights, redemption and co-sale rights and voting requirements in accordance with Section 10(o) of the Plan.

(p) *Titles and Headings*. The titles and headings of the Sections in the Plan are for convenience of reference only and, in the event of any conflict, the text of the Plan, rather than such titles or headings, shall control.

(q) *Conformity to Securities Laws*. Participant acknowledges that the Plan is intended to conform to the extent necessary with all provisions of the Securities Act and the Exchange Act and any and all regulations and rules promulgated by the Securities and Exchange Commission thereunder, and state securities laws and regulations. Notwithstanding anything herein to the contrary, the Plan and all Awards granted hereunder shall be administered only in such a manner as to conform to such laws, rules and regulations. To the extent permitted by Applicable Laws, the Plan and all Award Agreements shall be deemed amended to the extent necessary to conform to such laws, rules and regulations.

11. **Definitions**. As used in the Plan, the following words and phrases shall have the following meanings:

(a) "**Administrator**" means the Board or a Committee to the extent that the Board's powers or authority under the Plan have been delegated to such Committee.

(b) "**Applicable Laws**" means the requirements relating to the administration of equity incentive plans under U.S. federal and state securities, tax and other applicable laws, rules and regulations, the applicable rules of any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws and rules of any foreign country or other jurisdiction where Awards are granted or issued under the Plan.

(c) "**Award**" means, individually or collectively, a grant under the Plan of Options, Restricted Stock, Restricted Stock Units or Other Stock-Based Awards.

(d) "**Award Agreement**" means a written agreement evidencing an Award, which agreements may be in electronic medium and shall contain such terms and conditions with respect to an Award as the Administrator shall determine, consistent with and subject to the terms and conditions of the Plan.

(e) "**Board**" means the Board of Directors of the Company.

(f) **“Cause,”** with respect to a Participant, means “Cause” (or any term of similar effect) as defined in such Participant’s employment agreement with the Company if such an agreement exists and contains a definition of Cause (or term of similar effect), or, if no such agreement exists or such agreement does not contain a definition of Cause (or term of similar effect), then Cause shall include, but not be limited to: (i) the Participant’s unauthorized use or disclosure of confidential information or trade secrets of the Company or any material breach of a written agreement between the Participant and the Company, including without limitation a material breach of any employment, confidentiality, non-compete, non-solicit or similar agreement; (ii) the Participant’s commission of, indictment for or the entry of a plea of guilty or *nolo contendere* by the Participant to, a felony under the laws of the United States or any state thereof or any crime involving dishonesty or moral turpitude (or any similar crime in any jurisdiction outside the United States); (iii) the Participant’s gross negligence or willful misconduct or the Participant’s willful or repeated failure or refusal to substantially perform assigned duties; (iv) any act of fraud, embezzlement, material misappropriation or dishonesty committed by the Participant against the Company; or (v) any acts, omissions or statements by a Participant which the Company reasonably determines to be materially detrimental or damaging to the reputation, operations, prospects or business relations of the Company.

(g) **“Change in Control”** means (i) a merger or consolidation of the Company with or into any other corporation or other entity or person, (ii) a sale, lease, exchange or other transfer in one transaction or a series of related transactions of all or substantially all of the Company’s assets, or (iii) any other transaction, including the sale by the Company of new shares of its capital stock or a transfer of existing shares of capital stock of the Company, the result of which is that a third party that is not an affiliate of the Company or its stockholders (or a group of third parties not affiliated with the Company or its stockholders) immediately prior to such transaction acquires or holds capital stock of the Company representing a majority of the Company’s outstanding voting power immediately following such transaction; provided that the following events shall not constitute a “Change in Control”: (A) a transaction (other than a sale of all or substantially all of the Company’s assets) in which the holders of the voting securities of the Company immediately prior to the merger or consolidation hold, directly or indirectly, at least a majority of the voting securities in the successor corporation or its parent immediately after the merger or consolidation; (B) a sale, lease, exchange or other transaction in one transaction or a series of related transactions of all or substantially all of the Company’s assets to an affiliate of the Company; (C) an initial public offering of any of the Company’s securities or any other transaction or series of related transactions principally for bona fide equity financing purposes; (D) a reincorporation of the Company solely to change its jurisdiction; or (E) a transaction undertaken for the primary purpose of creating a holding company that will be owned in substantially the same proportion by the persons who held the Company’s securities immediately before such transaction. Notwithstanding the foregoing, if a Change in Control would give rise to a payment or settlement event with respect to any Award that constitutes “nonqualified deferred compensation,” the transaction or event constituting the Change in Control must also constitute a “change in control event” (as defined in Treasury Regulation §1.409A-3(i)(5)) in order to give rise to the payment or settlement event for such Award, to the extent required by Section 409A.

(h) **“Code”** means the Internal Revenue Code of 1986, as amended, and the regulations issued thereunder.

(i) **“Committee”** means one or more committees or subcommittees of the Board, which may be comprised of one or more directors and/or executive officers of the Company, in either case, to the extent permitted in accordance with Applicable Laws.

(j) **“Common Stock”** means the common stock of the Company.

(k) “**Company**” means Phathom Pharmaceuticals, Inc., a Delaware corporation, or any successor thereto. Except where the context otherwise requires, the term “Company” includes any of the Company’s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Code and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a significant interest, as determined by the Administrator.

(l) “**Consultant**” means any person, including any advisor, engaged by the Company or a parent or subsidiary of the Company to render services to such entity.

(m) “**Designated Beneficiary**” means the beneficiary or beneficiaries designated, in a manner determined by the Administrator, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant’s death or incapacity. In the absence of an effective designation by a Participant, “Designated Beneficiary” shall mean the Participant’s estate.

(n) “**Director**” means a member of the Board.

(o) “**Disability**” means a permanent and total disability within the meaning of Section 22(e)(3) of the Code, as it may be amended from time to time.

(p) “**Dividend Equivalents**” means a right granted to a Participant pursuant to Section 6(d)(3) hereof to receive the equivalent value (in cash or shares of Common Stock) of dividends paid on shares of Common Stock.

(q) “**Employee**” means any person, including officers and Directors, employed by the Company (within the meaning of Section 3401(c) of the Code) or any parent or subsidiary of the Company.

(r) “**Equity Restructuring**” means, as determined by the Administrator, a non-reciprocal transaction between the Company and its stockholders, such as a stock dividend, stock split, spin-off or recapitalization through a large, nonrecurring cash dividend, that affects the shares of Common Stock (or other securities of the Company) or the share price of Common Stock (or other securities of the Company) and causes a change in the per share value of the Common Stock underlying outstanding Awards.

(s) “**Exchange Act**” means the Securities Exchange Act of 1934, as amended.

(t) “**Fair Market Value**” means, as of any date, the value of Stock determined as follows: (i) if the Common Stock is listed on any established stock exchange, its Fair Market Value shall be the closing sales price for such Common Stock as quoted on such exchange for such date, or if no sale occurred on such date, the first market trading day immediately prior to such date during which a sale occurred, as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable; (ii) if the Common Stock is not traded on a stock exchange but is quoted on a national market or other quotation system, the last sales price on such date, or if no sales occurred on such date, then on the date immediately prior to such date on which sales prices are reported, as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable; or (iii) in the absence of an established market for the Common Stock, the Fair Market Value thereof shall be determined by the Administrator.

(u) “**Incentive Stock Option**” means an “incentive stock option” as defined in Section 422 of the Code.

(v) “**Non-Qualified Stock Option**” means an Option that is not intended to be or otherwise does not qualify as an Incentive Stock Option.

(w) “**Option**” means an option to purchase Common Stock.

(x) “**Other Stock-Based Awards**” means other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property.

(y) “**Participant**” means a Service Provider who has been granted an Award under the Plan.

(z) “**Plan**” means this Phathom Pharmaceuticals, Inc. 2019 Equity Incentive Plan.

(aa) “**Publicly Listed Company**” means that the Company or its successor (i) is required to file periodic reports pursuant to Section 12 of the Exchange Act and (ii) the Common Stock is listed on one or more National Securities Exchanges (within the meaning of the Exchange Act) or is quoted on NASDAQ or a successor quotation system.

(bb) “**Restricted Stock**” means Common Stock awarded to a Participant pursuant to Section 6 hereof that is subject to certain vesting conditions and other restrictions.

(cc) “**Restricted Stock Unit**” means an unfunded, unsecured right to receive, on the applicable settlement date, one share of Common Stock or an amount in cash or other consideration determined by the Administrator equal to the value thereof as of such payment date, which right may be subject to certain vesting conditions and other restrictions.

(dd) “**Section 409A**” means Section 409A of the Code and all regulations, guidance, compliance programs and other interpretative authority thereunder.

(ee) “**Securities Act**” means the Securities Act of 1933, as amended from time to time.

(ff) “**Service Provider**” means an Employee, Consultant or Director.

(gg) “**Termination of Service**” means the date the Participant ceases to be a Service Provider.

2019 EQUITY INCENTIVE PLAN

CALIFORNIA SUPPLEMENT

The Administrator has adopted this supplement for purposes of satisfying the requirements of Section 25102(o) of the California Corporations Code and the regulations issued thereunder ("**Section 25102(o)**"). Notwithstanding anything to the contrary contained in the Plan and except as otherwise determined by the Administrator, the provisions set forth in this supplement shall apply to all Awards granted under the Plan to a Participant who is a resident of the State of California on the date of grant (a "**California Participant**") and which are intended to be exempt from registration in California pursuant to Section 25102(o). This supplement shall not apply to Awards granted to California Participants or after the date on which the Company becomes a Publicly Listed Company. Definitions in the Plan are applicable to this supplement.

1. **Limitation on Securities Issuable under the Plan.** The amount of securities issued pursuant to the Plan shall not exceed the amounts permitted under section 260.140.45 of the California Code of Regulations to the extent applicable.

2. **Additional Limitations On Options.**

(a) *Maximum Duration of Options.* No Options granted to California Participants will be granted for a term in excess of 10 years.

(b) *Minimum Exercise Period Following Termination.* Unless a California Participant's Service Provider relationship is terminated for Cause, in the event of termination of such Participant's Service Provider relationship, to the extent required by Applicable Laws, he or she shall have the right to exercise an Option, to the extent that he or she was otherwise entitled to exercise such Option on the date employment terminated, as follows: (i) at least six months from the date of termination, if termination was caused by such Participant's death or Disability and (ii) at least 30 days from the date of termination, if termination was caused other than by such Participant's death or Disability.

3. **Additional Limitations For Restricted Stock Awards, Restricted Stock Units and Other Stock-Based Awards.** The terms of all Awards granted to California Participants shall comply, to the extent applicable, with Section 260.140.41 and Section 260.140.42 of the California Code of Regulations.

4. **Adjustments.** The Administrator will make such adjustments to an Award held by a California Participant as may be required by Section 260.140.41 or Section 260.140.42 of the California Code of Regulations.

5. **Additional Requirement To Provide Information To California Participants.** To the extent required by Section 260.140.46 of the California Code of Regulations, the Company shall provide to each California Participant and to each California Participant who acquires Common Stock pursuant to the Plan, not less frequently than annually, copies of annual financial statements (which need not be audited). The Company shall not be required to provide such statements to key persons whose duties in connection with the Company assure their access to equivalent information. In addition, this information requirement shall not apply to the Plan to the extent that it complies with all conditions of Rule 701 of the Securities Act ("**Rule 701**") as determined by the Administrator; provided that for purposes of

determining such compliance, any registered domestic partner shall be considered a “family member” as that term is defined in Rule 701.

6. **Stockholder Approval; Additional Limitations On Timing Of Awards.** The Plan will be submitted for the approval of the Company’s stockholders within twelve (12) months after the date of the Board’s adoption of the Plan. Awards may be granted or awarded prior to such stockholder approval; provided that no Award granted to a California Participant shall become exercisable, vested or realizable, as applicable to such Award, unless the Plan has been approved by the Company’s stockholders within twelve months before or after the date the Plan was adopted by the Administrator; and provided, further, that if such approval has not been obtained at the end of said twelve-month period, all Awards previously granted or awarded under the Plan to California Participants shall thereupon be canceled and become null and void.

PHATHOM PHARMACEUTICALS, INC.

2019 EQUITY INCENTIVE PLAN

STOCK OPTION GRANT NOTICE AND  
STOCK OPTION AGREEMENT

Phathom Pharmaceuticals, Inc. (the “**Company**”), pursuant to its 2019 Equity Incentive Plan (as amended from time to time, the “**Plan**”), hereby grants to Participant an Option to purchase the number of shares of the Company’s Common Stock (referred to herein as “**Shares**”) set forth below. This Option is subject to all of the terms and conditions as set forth herein and in the Stock Option Agreement attached hereto as Exhibit A (the “**Agreement**”) and the Plan, each of which is incorporated herein by reference. Unless otherwise defined herein, the terms defined in the Plan shall have the same defined meanings in this Stock Option Grant Notice (“**Grant Notice**”) and the Agreement.

**Participant:** *[Insert Participant Name]*

**Grant Date:** *[Insert Grant Date]*

**Vesting Commencement Date:** *[Insert Vesting Commencement Date]*

**Exercise Price per Share:** *[\$[Insert Exercise Price Per Share]*

**Total Exercise Price:** *[\$[Insert Aggregate Exercise Price on Grant Date]*

**Total Number of Shares Subject to Option:** *[Insert Number of Shares]*

**Expiration Date:** *[Insert Tenth Anniversary of Grant Date]*

**Type of Option:**  Incentive Stock Option  Non-Qualified Stock Option

**Vesting Schedule:** 25% of the total number of Shares subject to the Option shall vest one year after the Vesting Commencement Date, and 1/48th of the total number of Shares subject to the Option shall vest on the last day of each one-month period of Participant’s service as a Service Provider thereafter, so that all of the Shares subject to the Option shall be vested on the 4<sup>th</sup> anniversary of the Vesting Commencement Date.

By his or her signature and the Company’s signature below, Participant agrees to be bound by the terms and conditions of the Plan, the Agreement and this Grant Notice. Participant has reviewed the Agreement, the Plan and this Grant Notice in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Grant Notice and fully understands all provisions of this Grant Notice, the Agreement and the Plan. Participant hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Administrator of the Plan upon any questions arising under the Plan or the Agreement.

**PHATHOM PHARMACEUTICALS, INC.**

**PARTICIPANT**

By: \_\_\_\_\_  
 Print Name: \_\_\_\_\_  
 Title: \_\_\_\_\_

By: \_\_\_\_\_  
 Print Name: \_\_\_\_\_  
 State of \_\_\_\_\_  
 Residence: \_\_\_\_\_

EXHIBIT A

TO STOCK OPTION GRANT NOTICE

STOCK OPTION AGREEMENT

Pursuant to the Grant Notice to which this Agreement is attached, the Company has granted to Participant an Option under the Plan to purchase the number of Shares indicated in the Grant Notice.

1. **Grant of Option.** In consideration of Participant's past and/or continued employment with or service to the Company or a parent or subsidiary of the Company and for other good and valuable consideration, effective as of the Grant Date set forth in the Grant Notice, the Company irrevocably grants to Participant an Option to purchase any part or all of an aggregate of the number of Shares set forth in the Grant Notice at the Exercise Price per Share set forth in the Grant Notice, upon the terms and conditions set forth in the Plan and this Agreement. Unless designated as a Non-Qualified Stock Option in the Grant Notice, the Option shall be an Incentive Stock Option to the maximum extent permitted by law.

2. **Vesting.** The Option shall become vested and exercisable in such amounts and at such times as are set forth in the vesting schedule in the Grant Notice (the "**Vesting Schedule**"), except that any Share as to which the Option would be fractionally vested will be accumulated and will vest and become exercisable only when a whole Share has accumulated. The installments provided for in the vesting schedule are cumulative. Unless otherwise determined by the Administrator, any portion of the Option that has not become vested and exercisable on or prior to the date Participant incurs a Termination of Service shall be forfeited on the date of Participant's Termination of Service and shall not thereafter become vested, except as may be otherwise provided by the Administrator or as set forth in another written agreement between the Company and Participant.

3. **Exercise.**

(a) *Duration of Exercisability.* Any vested portion of the Option may be exercised in whole or in part at any time prior to the time when the Option or portion thereof becomes unexercisable under Section 4.

(b) *Person Eligible to Exercise.* During the lifetime of Participant, only Participant may exercise the Option or any portion thereof. After the death of Participant, any exercisable portion of the Option may, prior to the time when the Option becomes unexercisable under Section 4, be exercised by Participant's personal representative or by any person empowered to do so under the deceased Participant's will or under the then Applicable Laws of descent and distribution.

(c) *Manner of Exercise.* The Option, or any exercisable portion thereof, may be exercised solely by delivery to the Secretary of the Company or the Secretary's office, or such other place as may be determined by the Administrator, of all of the following prior to the time when the Option or such portion thereof becomes unexercisable under Section 4:

(i) An exercise notice in substantially in the form attached as Exhibit B to the Grant Notice (or such other form as is prescribed by the Administrator, which may be an electronic form) (the "**Exercise Notice**") signed by Participant or any other person then entitled to exercise the Option or portion thereof, stating that the Option or portion thereof is thereby exercised, such Exercise Notice complying with all applicable rules established by the Administrator; and



by: (ii) Subject to Section 5(f) of the Plan, full payment for the Shares with respect to which the Option or portion thereof is exercised

(A) Cash, wire transfer of immediately available funds or check, payable to the order of the Company; or

(B) With the consent of the Administrator, surrendering shares of Common Stock then issuable upon exercise of the Option valued at their Fair Market Value on the date of exercise; or

(C) If the Company is a Publicly Listed Company, unless the Administrator otherwise determines, through the (A) delivery of an irrevocable and unconditional undertaking by a broker acceptable to the Company to deliver promptly to the Company sufficient funds to pay the exercise price, or (B) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a broker acceptable to the Company to deliver promptly to the Company cash or a check sufficient to pay the exercise price, provided in either case, that such amount is paid to the Company at such time as may be required by the Administrator; or

(D) With the consent of the Administrator, any other form of payment permitted under Section 5(f) of the Plan; or

(E) Any combination of the above permitted forms of payment; and

(iii) Subject to Section 9(e) of the Plan, full payment for any applicable withholding taxes in cash, by wire transfer of immediately available funds or by check or in any form of consideration permitted by the Administrator for the payment of the exercise price pursuant to Section 3(c)(ii) above or pursuant to Section 3(d) below; and

(iv) In the event the Option or portion thereof shall be exercised pursuant to Section 3(b) by any person or persons other than Participant, appropriate proof of the right of such person or persons to exercise the Option.

(d) *Tax Withholding.* The Company shall have the authority and the right to deduct or withhold, or require Participant to remit to the Company, an amount sufficient to satisfy federal, state, local and foreign taxes (including Participant's employment tax obligation) required by Applicable Law to be withheld with respect to any taxable event concerning Participant arising as a result of the Option or otherwise under this Agreement, including, without limitation, the authority to deduct such amounts from other compensation payable to Participant by the Company.

(e) *Fractional Shares.* The Option may only be exercised for whole shares of Common Stock. Any fractional Shares shall be rounded down to the nearest whole share.

(f) *Special Tax Consequences.* If the Option is intended to be an Incentive Stock Option, Participant acknowledges that, to the extent that the aggregate fair market value (determined as of the time the Option is granted) of all Shares with respect to which Incentive Stock Options, including, without limitation, the Option, are first exercisable for the first time by Participant in any calendar year exceeds \$100,000 (or such other limitation as imposed by Section 422(d) of the Code), the Option and such other options (or the applicable portion thereof) shall be treated as not qualifying under Section

422 of the Code but rather shall be considered Non-Qualified Stock Options. Participant further acknowledges that the rule set forth in the preceding sentence shall be applied by taking Options and other "incentive stock options" into account in the order in which they were granted.

4. **Expiration of Option.** The Option may not be exercised to any extent by anyone after the first to occur of the following events:

- (a) The Expiration Date set forth in the Grant Notice;
- (b) The expiration of three months following the date of Participant's Termination of Service, unless such Termination of Service occurs by reason of Participant's death or Disability or Participant's discharge by the Company for Cause;
- (c) The expiration of one year following the date of Participant's Termination of Service by reason of Participant's death or Disability;
- (d) The date of Participant's Termination of Service as a result of Participant's discharge by the Company for Cause; or
- (e) With respect to any unvested portion of the Option, the date that is thirty days following Participant's Termination of Service for any reason other than as a result of Participant's discharge by the Company for Cause, or such shorter period as may be determined by the Administrator.

Participant acknowledges that an Incentive Stock Option exercised more than three months after Participant's termination of status as an Employee, other than by reason of death or Disability, will be taxed as a Non-Qualified Stock Option.

5. **Transferability.** The Option shall not be sold, assigned, transferred, pledged or otherwise encumbered by Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the life of the Participant, the Option shall be exercisable only by the Participant.

6. **Restrictive Legends and Stop-Transfer Orders.**

(a) *Legends.* Participant understands and agrees that the Company shall cause any certificates issued evidencing the Shares to have the legends set forth below or legends substantially equivalent thereto, together with any other legends that may be required by Applicable Laws:

THE SHARES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED ("ACT"), NOR HAVE THEY BEEN REGISTERED OR QUALIFIED UNDER THE SECURITIES LAWS OF ANY STATE. NO TRANSFER OF SUCH SECURITIES WILL BE PERMITTED UNLESS A REGISTRATION STATEMENT UNDER THE ACT IS IN EFFECT AS TO SUCH TRANSFER, THE TRANSFER IS MADE IN ACCORDANCE WITH RULE 144 UNDER THE ACT, OR IN THE OPINION OF COUNSEL (WHICH MAY BE COUNSEL FOR THE COMPANY) REGISTRATION UNDER THE ACT IS UNNECESSARY IN ORDER FOR SUCH TRANSFER TO COMPLY WITH THE ACT AND WITH APPLICABLE STATE SECURITIES LAWS.

THE SHARES REPRESENTED BY THIS CERTIFICATE MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY. SUCH TRANSFER RESTRICTIONS ARE BINDING ON TRANSFEREES OF THESE SHARES.

(b) *Stop Transfer Orders.* Participant agrees that, in order to ensure compliance with the restrictions referred to in the Plan and this Agreement, the Company may issue appropriate “stop transfer” instructions to its transfer agent, if any, and that, if the Company transfers its own securities, it may make appropriate notations to the same effect in its own records.

(c) *Impermissible Transfers Void.* The Company shall not be required (i) to transfer on its books any Shares that have been sold or otherwise transferred in violation of any of the provisions of this Agreement or (ii) to treat as owner of such Shares or to accord the right to vote or pay dividends to any purchaser or other transferee to whom such Shares shall have been so transferred. Any transfer or attempted transfer of the Option or any of the Restricted Shares not in accordance with the terms of this Agreement shall be void.

7. **Taxes.** Participant understands that Participant may suffer adverse tax consequences as a result of Participant’s purchase or disposition of the Shares. Participant represents that Participant has consulted with any tax consultants Participant deems advisable in connection with the purchase or disposition of the Shares and that Participant is not relying on the Company for any tax advice. Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents. Participant understands that Participant (and not the Company) shall be responsible for Participant’s tax liability that may arise as a result of the transactions contemplated by this Agreement.

**8. Miscellaneous.**

(a) *No Right To Employment or Other Status.* No person shall have any claim or right to be granted an Award, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan or this Agreement.

(b) *Notices.* Any notice to be given under the terms of this Agreement to the Company shall be addressed to the Company in care of the Secretary of the Company at the Company’s principal executive offices, and any notice to be given to Participant shall be addressed to Participant at the most-recent physical or email address for Participant listed in the Company’s personnel records. By a notice given pursuant to this Section 8(b), either party may hereafter designate a different address for notices to be given to that party. Any notice which is required to be given to Participant shall, if Participant is then deceased, be given to the person entitled to exercise his or her Option by written notice under this Section 8(b). Any notice shall be deemed duly given when sent via email or when sent by certified mail (return receipt requested) and deposited (with postage prepaid) in a post office or branch post office regularly maintained by the United States Postal Service.

(c) *Successors and Assigns.* The Company may assign any of its rights under this Agreement and the Exercise Notice to single or multiple assignees, and this Agreement shall inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer herein set

forth, this Agreement shall be binding upon Participant and his or her heirs, executors, administrators, successors and assigns.

(d) *Severability.* In the event any portion of the Plan or this Agreement or any action taken pursuant thereto shall be held illegal or invalid for any reason, the illegality or invalidity shall not affect the remaining parts of the Plan and this Agreement, and the Plan and this Agreement shall be construed and enforced as if the illegal or invalid provisions had not been included, and the illegal or invalid action shall be null and void.

(e) *Entire Agreement; Governing Documents.* The Plan, the Grant Notice and this Agreement (including all Exhibits thereto) constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and Participant with respect to the subject matter hereof. In the event of any contradiction between the Plan and this Agreement or any other written agreement between a Participant and the Company that has been approved by the Administrator, the terms of the Plan shall govern. Participant hereby agrees to execute such further instruments and to take such further action as the Company requests to carry out the purposes and intent of this Agreement and the Plan, including, without limitation, restrictions on the transferability of shares of Common Stock, the right of the Company to repurchase shares of Common Stock, the right of the Company to require that shares of Common Stock be transferred in the event of certain transactions, tag-along rights, bring-along rights, redemption and co-sale rights and voting requirements in accordance with Section 10(o) of the Plan.

(f) *Governing Law.* The provisions of the Plan and all Awards made thereunder, including the Option, shall be governed by and interpreted in accordance with the laws of the State of Delaware, disregarding choice-of-law principles of the law of any state that would require the application of the laws of a jurisdiction other than such state.

(g) *Titles and Headings.* The titles and headings of the Sections in this Agreement are for convenience of reference only and, in the event of any conflict, the text of this Agreement, rather than such titles or headings, shall control.

EXHIBIT B

TO STOCK OPTION GRANT NOTICE

FORM OF EXERCISE NOTICE

Effective as of today, \_\_\_\_\_, \_\_\_\_\_, the undersigned (“Participant”) hereby elects to exercise Participant’s option to purchase \_\_\_\_\_ Shares of Phathom Pharmaceuticals, Inc. (the “Company”) under and pursuant to the Phathom Pharmaceuticals, Inc. 2019 Equity Incentive Plan (the “Plan”) and the Stock Option Grant Notice and Stock Option Agreement dated \_\_\_\_\_, \_\_\_\_ (the “Agreement”). Capitalized terms used herein without definition shall have the meanings given in the Agreement.

Grant Date: \_\_\_\_\_

Number of Shares as to which Option is Exercised: \_\_\_\_\_

Exercise Price per Share: \$ \_\_\_\_\_

Total Exercise Price: \$ \_\_\_\_\_

Certificate to be issued in name of: \_\_\_\_\_

Cash Payment delivered herewith: \$ \_\_\_\_\_ (Representing the full Exercise Price for the Shares, as well as any applicable withholding tax)

Type of Option:  Incentive Stock Option  Non-Qualified Stock Option

1. Representations of Participant. Participant acknowledges that Participant has received, read and understood the Plan and the Agreement. Participant agrees to abide by and be bound by their terms and conditions.

2. Tax Consultation. Participant understands that Participant may suffer adverse tax consequences as a result of Participant’s purchase or disposition of the Shares. Participant represents that Participant has consulted with any tax consultants Participant deems advisable in connection with the purchase or disposition of the Shares and that Participant is not relying on the Company for any tax advice. Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents. Participant understands that Participant (and not the Company) shall be responsible for Participant’s tax liability that may arise as a result of this investment or the transactions contemplated by this Agreement.

3. Participant Representations. Participant hereby makes the following certifications and representations with respect to the Shares listed above:

(a) Participant is aware of the Company’s business affairs and financial condition and has acquired sufficient information about the Company to reach an informed and knowledgeable decision to acquire the Shares. Participant is acquiring these Shares for investment for Participant’s own account only and not with a view to, or for resale in connection with, any “distribution” thereof within the meaning of the Securities Act.

(b) Participant acknowledges and understands that the Shares constitute “restricted securities” under the Securities Act and have not been registered under the Securities Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature

of Participant's investment intent as expressed herein. Participant understands that the Shares must be held indefinitely unless they are subsequently registered under the Securities Act or an exemption from such registration is available. Participant further acknowledges and understands that the Company is under no obligation to register the Shares. Participant understands that the certificate evidencing the Shares will be imprinted with a legend which prohibits the transfer of the Shares unless they are registered or such registration is not required in the opinion of counsel satisfactory to the Company and any other legend required under Applicable Laws.

(c) Participant is familiar with the provisions of Rule 701 and Rule 144, each promulgated under the Securities Act, which, in substance, permit limited public resale of "restricted securities" acquired, directly or indirectly from the issuer thereof, in a non-public offering subject to the satisfaction of certain conditions. In the event the Company becomes subject to the reporting requirements of Section 13 or 15(d) of the Exchange Act, ninety days thereafter (or such longer period as any market stand-off agreement may require) the securities exempt under Rule 701 may be resold, subject to the satisfaction of certain of the conditions specified by Rule 144.

(d) In the event that the Company does not qualify under Rule 701 at the time of grant of the Option, then the securities may be resold in certain limited circumstances subject to the provisions of Rule 144.

(e) Participant further understands that in the event all of the applicable requirements of Rule 701 or 144 are not satisfied, registration under the Securities Act, compliance with Regulation A, or some other registration exemption will be required; and that, notwithstanding the fact that Rules 144 and 701 are not exclusive, the Staff of the Securities and Exchange Commission has expressed its opinion that persons proposing to sell private placement securities other than in a registered offering and otherwise than pursuant to Rules 144 or 701 will have a substantial burden of proof in establishing that an exemption from registration is available for such offers or sales, and that such persons and their respective brokers who participate in such transactions do so at their own risk. Participant understands that no assurances can be given that any such other registration exemption will be available in such event.

**4. Further Instruments.** Participant hereby agrees to execute such further instruments and to take such further action as the Company requests to carry out the purposes and intent of this Agreement and the Plan, including, without limitation, restrictions on the transferability of shares of Common Stock, the right of the Company to repurchase shares of Common Stock, the right of the Company to require that shares of Common Stock be transferred in the event of certain transactions, tag-along rights, bring-along rights, redemption and co-sale rights and voting requirements in accordance with Section 10(o) of the Plan.

**5. Notices.** Any notice required or permitted hereunder shall be given in accordance with the provisions set forth in Section 8(b) of the Agreement.

**6. Entire Agreement.** The Plan and Agreement are incorporated herein by reference. This Notice, the Plan and the Agreement constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and Participant with respect to the subject matter hereof.

**ACCEPTED BY:**  
**PHATHOM PHARMACEUTICALS, INC.**

By: \_\_\_\_\_  
Print Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**SUBMITTED BY**  
**PARTICIPANT:**

By: \_\_\_\_\_  
Print Name: \_\_\_\_\_

PHATHOM PHARMACEUTICALS, INC.

2019 EQUITY INCENTIVE PLAN

RESTRICTED STOCK GRANT NOTICE AND  
RESTRICTED STOCK AGREEMENT

Phathom Pharmaceuticals, Inc. (the “**Company**”), pursuant to its 2019 Equity Incentive Plan (the “**Plan**”), hereby grants to Participant the number of shares of the Company’s Common Stock (referred to herein as “**Shares**”) set forth below. This Restricted Stock award (this “**Award**”) is subject to all of the terms and conditions as set forth herein and in the Restricted Stock Agreement attached hereto as Exhibit A (the “**Agreement**”) and the Plan, each of which is incorporated herein by reference. Unless otherwise defined herein, the terms defined in the Plan shall have the same defined meanings in this Restricted Stock Grant Notice (“**Grant Notice**”) and the Agreement.

**Participant:** \_\_\_\_\_

**Grant Date:** \_\_\_\_\_

**Vesting Commencement Date:** \_\_\_\_\_

**Total Number of Shares of Restricted Stock:** \_\_\_\_\_

**Vesting Schedule:** The Shares shall vest and be released from the “**Forfeiture Restriction**” (as defined in Section 2(a) of the Agreement) as follows:

[To be included in individual award agreements]

By his or her signature and the Company’s signature below, Participant agrees to be bound by the terms and conditions of the Plan, the Agreement and this Grant Notice. Participant has reviewed the Agreement, the Plan and this Grant Notice in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Grant Notice and fully understands all provisions of this Grant Notice, the Agreement and the Plan. Participant hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Administrator of the Plan upon any questions arising under the Plan or the Agreement. Participant shall also execute and deliver to the Company the stock assignment duly endorsed in blank, attached to this Grant Notice as Exhibit B (the “**Stock Assignment**”). If Participant is married, his or her spouse has signed the Consent of Spouse attached to this Grant Notice as Exhibit C.

PHATHOM PHARMACEUTICALS, INC.

PARTICIPANT

By: \_\_\_\_\_

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

State of \_\_\_\_\_  
Residence: \_\_\_\_\_



EXHIBIT A

TO RESTRICTED STOCK GRANT NOTICE

RESTRICTED STOCK AGREEMENT

Pursuant to the Grant Notice to which this Agreement is attached, the Company has granted to Participant the number of Shares indicated in the Grant Notice.

1. *Grant of Restricted Stock.*

(a) *Grant of Restricted Stock.* In consideration of Participant's past and/or continued employment with or service to the Company or a parent or subsidiary of the Company and for other good and valuable consideration, which the Administrator has determined exceeds the par value per Share, effective as of the Grant Date set forth in the Grant Notice, the Company irrevocably grants to Participant the Shares set forth in the Grant Notice, upon the terms and conditions set forth in the Plan and this Agreement.

(b) *Issuance of Shares.* On the Grant Date, the Company shall issue the Shares to Participant and shall (i) cause a share certificate or certificates representing the Shares to be registered in the name of Participant, or (ii) cause such Shares to be held in book entry form. If a share certificate is issued, it shall be delivered to and held in custody by the Company and shall bear the restrictive legends required by Section 4(a) below. If the Shares are held in book entry form, then such entry will reflect that the Shares are subject to the restrictions of this Agreement.

(c) *Rights as a Stockholder.* Except as otherwise provided herein, upon issuance of the Shares by the Company to Participant (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), Participant shall have all the rights of a stockholder with respect to said Shares, including the right to receive any cash or stock dividends or other distributions paid to or made with respect to the Shares, subject to the restrictions described in the following sentence, which restrictions shall lapse when the Unreleased Shares are released from the Forfeiture Restriction as set forth in Section 2. Unless otherwise provided by the Administrator, if any dividends or distributions are paid in cash or shares, or consist of a dividend or distribution to holders of Common Stock of property, the cash, shares or other property paid or made with respect to Unreleased Shares will be retained in custody by the Company (without interest) (the "**Retained Distributions**") and subject to the same forfeiture and transferability restrictions as the Unreleased Shares with respect to which they were paid or made and shall automatically be forfeited to the Company for no consideration in the event of the forfeiture of the Unreleased Shares with respect to which they were paid pursuant to the Forfeiture Restriction. Any Retained Distributions held by the Company that were paid on those Unreleased Shares as to which the Forfeiture Restriction and transfer restrictions lapse or are removed shall also be released to Participant at the time of such lapse or removal. In no event shall a Retained Distribution be paid with respect to Unreleased Shares later than the end of the calendar year in which the corresponding dividends or distributions are paid to holders of Common Stock or, if later, the 15th day of the third month following the later of (a) the date the dividends or distributions are paid to holders of Common Stock and (b) the date the Unreleased Shares with respect to which the Retained Distributions are paid vest. Participant shall enjoy rights as a stockholder until such time as Participant disposes of the Shares or the Company and/or its assignee(s) exercises the Right of First Refusal under the Plan. Upon such exercise, Participant shall have no further rights as a holder of the Shares except the right to receive payment for the Shares so purchased in accordance with the provisions of the Plan and this Agreement, and Participant shall forthwith cause the certificate(s), if any issued, evidencing the Shares so purchased to be surrendered to the Company for transfer or cancellation.

## 2. *Restrictions on Shares.*

(a) *Forfeiture Restriction.* Subject to the provisions of Section 2(b) below, in the event of Participant's Termination of Service for any reason, all of the Shares which, from time to time, have not yet been released from the Forfeiture Restriction (together with and any Retained Distributions paid thereon pursuant to Section 1(c) and held by the Company, the "**Unreleased Shares**") shall thereupon be forfeited immediately and without any further action by the Company (the "**Forfeiture Restriction**"). Upon the occurrence of such forfeiture, the Company shall become the legal and beneficial owner of the Unreleased Shares, and all rights and interests therein or relating thereto, and the Company shall have the right to retain and transfer to its own name the number of Unreleased Shares being forfeited by Participant. The Unreleased Shares shall be held by the Company in accordance with Section 3 until the Shares are forfeited as provided in this Section 2(a), until such Unreleased Shares are fully released from the Forfeiture Restriction, or until such time as this Agreement no longer is in effect. Participant hereby authorizes and directs the Secretary of the Company, or such other person designated by the Administrator, to transfer the Unreleased Shares which have been forfeited pursuant to this Section 2(a) from Participant to the Company.

(b) *Release of Shares from Forfeiture Restriction.* The Shares shall be released from the Forfeiture Restriction in accordance with the vesting schedule set forth in the Grant Notice. As soon as administratively practicable following the release of any Shares from the Forfeiture Restriction, the Company shall, as applicable, either deliver to Participant the certificate or certificates representing such Shares in the Company's possession belonging to Participant, or, if the Shares are held in book entry form, then the Company shall remove the notations on the book form. Participant (or the beneficiary or personal representative of Participant in the event of Participant's death or incapacity, as the case may be) shall deliver to the Company any representations or other documents or assurances as the Company or its representatives deem necessary or advisable in connection with any such delivery.

(c) *Transferability.* Except as otherwise permitted by the Administrator, the Unreleased Shares shall not be sold, assigned, transferred, pledged or otherwise encumbered by Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution.

3. *Escrow.* To insure the availability for delivery of the Unreleased Shares in the event of the application of the Forfeiture Restriction, Participant appoints the Secretary of the Company, or such other person designated by the Administrator from time to time as escrow agent, as its attorney-in-fact to sell, assign and transfer unto the Company, such Unreleased Shares, if any, forfeited pursuant to the Forfeiture Restriction, together with any Retained Distributions paid thereon pursuant to Section 1(c) and held by the Company, and shall deliver and deposit with the Secretary of the Company, or such other person designated by the Administrator from time to time, the share certificate(s) representing the Shares, together with the Stock Assignment. The Unreleased Shares and Stock Assignment (and any Retained Distributions) shall be held by the Secretary, or such other person designated by the Administrator from time to time, in escrow, until the Shares are forfeited as provided in Section 2(a), until such Shares are fully released from the Forfeiture Restriction or until such time as this Agreement no longer is in effect. Upon release of the Unreleased Shares from the Forfeiture Restriction, the escrow agent shall as soon as reasonably practicable deliver to Participant the certificate or certificates representing such Shares in the escrow agent's possession belonging to Participant, and the escrow agent shall be discharged of all further obligations hereunder. The Company, or its designee, shall not be liable for any act it may do or omit to do with respect to holding the Shares (or any Retained Distributions) in escrow and while acting in good faith and in the exercise of its judgment.

## 4. *Restrictive Legends and Stop-Transfer Orders.*

(a) *Legends.* Participant understands and agrees that the Company shall cause any certificates issued evidencing the Shares to have the legends set forth below or legends substantially equivalent thereto, together with any other legends that may be required by Applicable Laws:

THE SHARES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED ("ACT"), NOR HAVE THEY BEEN REGISTERED OR QUALIFIED UNDER THE SECURITIES LAWS OF ANY STATE. NO TRANSFER OF SUCH SECURITIES WILL BE PERMITTED UNLESS A REGISTRATION STATEMENT UNDER THE ACT IS IN EFFECT AS TO SUCH TRANSFER, THE TRANSFER IS MADE IN ACCORDANCE WITH RULE 144 UNDER THE ACT, OR IN THE OPINION OF COUNSEL (WHICH MAY BE COUNSEL FOR THE COMPANY) REGISTRATION UNDER THE ACT IS UNNECESSARY IN ORDER FOR SUCH TRANSFER TO COMPLY WITH THE ACT AND WITH APPLICABLE STATE SECURITIES LAWS.

THE SHARES REPRESENTED BY THIS CERTIFICATE MAY BE SUBJECT TO FORFEITURE PURSUANT TO, AND MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH, THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY. SUCH FORFEITURE AND/OR TRANSFER RESTRICTIONS ARE BINDING ON TRANSFEREES OF THESE SHARES.

(b) *Stop Transfer Orders.* Participant agrees that, in order to ensure compliance with the restrictions referred to in the Plan and this Agreement, the Company may issue appropriate "stop transfer" instructions to its transfer agent, if any, and that, if the Company transfers its own securities, it may make appropriate notations to the same effect in its own records.

(c) *Impermissible Transfers Void.* The Company shall not be required (i) to transfer on its books any Shares that have been sold or otherwise transferred in violation of any of the provisions of this Agreement or (ii) to treat as owner of such Shares or to accord the right to vote or pay dividends to any purchaser or other transferee to whom such Shares shall have been so transferred. Any transfer or attempted transfer of the Shares not in accordance with the terms of this Agreement shall be void.

#### 5. *Taxes.*

(a) *Tax Consequences of Award.* Participant understands that Participant may suffer adverse tax consequences as a result of Participant's receipt of, vesting in or disposition of the Shares. Participant represents that Participant has consulted with any tax consultants Participant deems advisable in connection with the receipt of the Shares and that Participant is not relying on the Company for any tax advice. Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents. Participant understands that Participant (and not the Company) shall be responsible for Participant's tax liability that may arise as a result of the transactions contemplated by this Agreement.

(b) *Section 83(b) Election for Unreleased Shares.* Participant acknowledges that, unless an election is filed by Participant with the Internal Revenue Service and, if necessary, the proper

state taxing authorities, within thirty days of the receipt of the Unreleased Shares, electing pursuant to Section 83(b) of the Code (and similar state tax provisions if applicable) to be taxed currently on their Fair Market Value on the date of issuance, there will be a recognition of taxable income to the Participant equal to the Fair Market Value of the Unreleased Shares at the time the Forfeiture Restriction lapses. Participant represents that Participant has consulted any tax consultant(s) Participant deems advisable in connection with the purchase of the Shares or the filing of the election under Section 83(b) of the Code and similar tax provisions.

PARTICIPANT ACKNOWLEDGES THAT IT IS PARTICIPANT'S SOLE RESPONSIBILITY AND NOT THE COMPANY'S TO TIMELY FILE THE ELECTION UNDER SECTION 83(B) OF THE CODE, AND THE COMPANY AND ITS REPRESENTATIVES SHALL HAVE NO OBLIGATION OR AUTHORITY TO MAKE THIS FILING ON PARTICIPANT'S BEHALF.

(b) *Tax Withholding.* The Company shall have the authority and the right to deduct or withhold, or require Participant to remit to the Company, an amount sufficient to satisfy federal, state, local and foreign taxes (including Participant's employment tax obligation) required by Applicable Law to be withheld with respect to any taxable event concerning Participant arising as a result of the grant or vesting of the Shares or otherwise under this Agreement, including, without limitation, the authority to deduct such amounts from other compensation payable to Participant by the Company.

6. **Participant Representations.** Participant hereby makes the following certifications and representations with respect to the Shares listed above:

(a) Participant is aware of the Company's business affairs and financial condition and has acquired sufficient information about the Company to reach an informed and knowledgeable decision to acquire the Shares. Participant is acquiring these Shares for investment for Participant's own account only and not with a view to, or for resale in connection with, any "distribution" thereof within the meaning of the Securities Act.

(b) Participant acknowledges and understands that the Shares constitute "restricted securities" under the Securities Act and have not been registered under the Securities Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of Participant's investment intent as expressed herein. Participant understands that the Shares must be held indefinitely unless they are subsequently registered under the Securities Act or an exemption from such registration is available. Participant further acknowledges and understands that the Company is under no obligation to register the Shares. Participant understands that the certificate evidencing the Shares will be imprinted with a legend which prohibits the transfer of the Shares unless they are registered or such registration is not required in the opinion of counsel satisfactory to the Company and any other legend required under Applicable Laws.

(c) Participant is familiar with the provisions of Rule 701 and Rule 144, each promulgated under the Securities Act, which, in substance, permit limited public resale of "restricted securities" acquired, directly or indirectly from the issuer thereof, in a non-public offering subject to the satisfaction of certain conditions. In the event the Company becomes subject to the reporting requirements of Section 13 or 15(d) of the Exchange Act, ninety days thereafter (or such longer period as any market stand-off agreement may require) the securities exempt under Rule 701 may be resold, subject to the satisfaction of certain of the conditions specified by Rule 144.

(d) In the event that the Company does not qualify under Rule 701 at the time of issuance of the Shares, then the securities may be resold in certain limited circumstances subject to the provisions of Rule 144.

(e) Participant further understands that in the event all of the applicable requirements of Rule 701 or 144 are not satisfied, registration under the Securities Act, compliance with Regulation A, or some other registration exemption will be required; and that, notwithstanding the fact that Rules 144 and 701 are not exclusive, the Staff of the Securities and Exchange Commission has expressed its opinion that persons proposing to sell private placement securities other than in a registered offering and otherwise than pursuant to Rules 144 or 701 will have a substantial burden of proof in establishing that an exemption from registration is available for such offers or sales, and that such persons and their respective brokers who participate in such transactions do so at their own risk. Participant understands that no assurances can be given that any such other registration exemption will be available in such event.

#### **7. Miscellaneous.**

(a) *No Right To Employment or Other Status.* No person shall have any claim or right to be granted an Award, and the grant of an Award shall not be construed as giving Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with Participant free from any liability or claim under the Plan or this Agreement.

(b) *Notices.* Any notice to be given under the terms of this Agreement to the Company shall be addressed to the Company in care of the Secretary of the Company at the Company's principal executive offices, and any notice to be given to Participant shall be addressed to Participant at the most-recent physical or email address for Participant listed in the Company's personnel records. By a notice given pursuant to this Section 7(b), either party may hereafter designate a different address for notices to be given to that party. Any notice shall be deemed duly given when sent via email or when sent by certified mail (return receipt requested) and deposited (with postage prepaid) in a post office or branch post office regularly maintained by the United States Postal Service.

(c) *Successors and Assigns.* The Company may assign any of its rights under this Agreement to single or multiple assignees, and this Agreement shall inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer herein set forth, this Agreement shall be binding upon Participant and his or her heirs, executors, administrators, successors and assigns.

(d) *Severability.* In the event any portion of the Plan or this Agreement or any action taken pursuant hereto shall be held illegal or invalid for any reason, the illegality or invalidity shall not affect the remaining parts of the Plan and this Agreement, and the Plan and this Agreement shall be construed and enforced as if the illegal or invalid provisions had not been included, and the illegal or invalid action shall be null and void.

(e) *Entire Agreement; Governing Documents.* The Plan, the Grant Notice and this Agreement (including all Exhibits thereto) constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and Participant with respect to the subject matter hereof. In the event of any contradiction between the Plan and this Agreement or any other written agreement between a Participant and the Company that has been approved by the Administrator, the terms of the Plan shall govern. Participant hereby agrees to execute such further instruments and to take such further action as the Company requests to carry out the purposes and intent of this Agreement and the Plan, including, without limitation, restrictions on the transferability of shares of Common Stock, the right of the Company to repurchase shares of Common Stock, the right of the Company to require that

shares of Common Stock be transferred in the event of certain transactions, tag-along rights, bring-along rights, redemption and co-sale rights and voting requirements in accordance with Section 10(o) of the Plan.

(f) *Governing Law.* The provisions of the Plan and all Awards made thereunder, including the Shares, shall be governed by and interpreted in accordance with the laws of the State of Delaware, disregarding choice-of-law principles of the law of any state that would require the application of the laws of a jurisdiction other than such state.

(g) *Titles and Headings.* The titles and headings of the Sections in this Agreement are for convenience of reference only and, in the event of any conflict, the text of this Agreement, rather than such titles or headings, shall control.

**EXHIBIT B**

**TO STOCK OPTION GRANT NOTICE**

**STOCK ASSIGNMENT**

[See instructions below]

FOR VALUE RECEIVED I, \_\_\_\_\_, hereby sell, assign and transfer unto \_\_\_\_\_ the shares of the Common Stock of Phathom Pharmaceuticals, Inc. registered in my name on the books of said corporation represented by Certificate No. \_\_\_\_\_ and do hereby irrevocably constitute and appoint \_\_\_\_\_ to transfer the said stock on the books of the within named corporation with full power of substitution in the premises.

This Assignment Separate from Certificate may be used only in accordance with the Restricted Stock Grant Notice and Restricted Stock Agreement between Phathom Pharmaceuticals, Inc. and the undersigned dated \_\_\_\_\_.

Dated: \_\_\_\_\_, \_\_\_\_\_

Signature: \_\_\_\_\_  
[Name]

**INSTRUCTIONS:** Please do not fill in any blanks other than the signature line. The purpose of this assignment is to enable the Company to enforce the Forfeiture Restriction, as set forth in the Restricted Stock Grant Notice and Restricted Stock Agreement, without requiring additional signatures on the part of Participant.

**EXHIBIT C**

**TO RESTRICTED STOCK GRANT NOTICE**

**CONSENT OF SPOUSE**

I, \_\_\_\_\_, spouse of \_\_\_\_\_, have read and approve the foregoing Restricted Stock Grant Notice and Restricted Stock Agreement dated \_\_\_\_\_, between my spouse and Phathom Pharmaceuticals, Inc. In consideration of issuing to my spouse the shares of the Common Stock of Phathom Pharmaceuticals, Inc. set forth in the Restricted Stock Grant Notice and Restricted Stock Agreement, I hereby appoint my spouse as my attorney-in-fact in respect to the exercise of any rights under the Restricted Stock Grant Notice and Restricted Stock Agreement and agree to be bound by the provisions of the Restricted Stock Grant Notice and Restricted Stock Agreement insofar as I may have any rights in said Agreement or any shares issued pursuant thereto under the community property laws or similar laws relating to marital property in effect in the state of our residence as of the date of the signing of the Restricted Stock Grant Notice and Restricted Stock Agreement.

Dated: \_\_\_\_\_, \_\_\_\_

Signature of Spouse: \_\_\_\_\_



## PHATHOM PHARMACEUTICALS, INC.

May 7, 2019

Tadataka Yamada

**Re: Phathom Pharmaceuticals, Inc. Board of Directors**

Dear Tachi,

It is my sincere pleasure to memorialize your position on the Board of Directors (the “**Board**”) of Phathom Pharmaceuticals, Inc. (the “**Company**”) as Chairman of the Board.

As the Chairman of the Board, you will perform advisory duties customarily associated with the position, participate in regularly scheduled and special Board meetings, participate in conference calls of the Board, meet or otherwise periodically confer with Board members, committees of the Board and Company executives, and provide assistance to the Company’s executive team with occasional meetings, site visits, conference calls and advice on an as-needed basis (the “**Services**”).

Commencing as of the date of this letter, you will be paid an annual cash fee of \$100,000, paid quarterly, for your services as Chairman. Moreover, as a member of the Board, the Company will reimburse you for reasonable travel and other expenses to attend Board meetings and other Board-related functions (such as site visits).

You will serve as the Chairman of the Board until the earlier of your resignation, removal from the Board or death, or your successor as Chairman of the Board is duly appointed by the Board. You may be removed from the Board at any time in accordance with terms of the Company’s Bylaws. You will not be an employee or agent of the Company. You will not be eligible for any employee benefits. Any taxes shall be solely your responsibility.

In your capacity as a director of the Company, you will be expected not to use or disclose any confidential information, including, but not limited to, trade secrets of any current or former employer or other person or entity to whom you have an obligation of confidentiality. Rather, you will be expected to use only information that is generally known and used by persons with training and experience comparable to your own, that is common knowledge in the industry or otherwise legally in the public domain, or that is otherwise provided by the Company. You acknowledge that as a result of the Services, you will obtain confidential information and proprietary information relating to or provided by the Company and its affiliates. During and after your service with the Company, you shall not use for your benefit or disclose confidential information, proprietary information, knowledge or data relating to or provided by the Company and its affiliates; provided, however, that, except as provided under applicable law, this obligation shall not apply to information that (a) was publicly known and available in the public domain at the time of disclosure, or later becomes publicly known and available in the public domain other than through your failure to keep such information confidential, (b) was in your possession at the time of disclosure or is provided to you by a third party, in each case without duty of confidentiality, (c) was independently developed by you without incorporating or using Company information or resources, as demonstrated by records contemporaneously maintained, or (d) is disclosed with the express consent of the Company. Any proprietary inventions or other intellectual property rights that you may develop (including, but not limited to, patents, copyrights, trademarks, trade secrets, technology, contract and licensing rights, business plans or other proprietary rights), either alone or jointly with others, during the course of performing the Services for the Company is assigned by you to the Company and you agree to execute, when requested, such

additional documentation deemed necessary by the Company to assign all rights, title and interest to such inventions or property. You also represent and warrant that you have the full right and power to enter into and perform this letter agreement and there is no other existing contract or duty on your part inconsistent with the terms of this letter agreement (including, but not limited to, any conflict of interest policy). Additionally, as a reminder, as a member of the Board, you will have fiduciary duties to the Company and its members.

Notwithstanding the foregoing, pursuant to 18 U.S.C. Section 1833(b), you shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that: (a) is made in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney, and solely for the purpose of reporting or investigating a suspected violation of law; or (b) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal.

To avoid conflicts of interest, it is expected that directors will disclose any personal interest they may have in a transaction that the Board considers or in which the Company otherwise is a party. Directors shall recuse themselves from participation in any decision in which there is a conflict between their personal interests and the interests of the Company. Any such "related party transaction" involving a director must be reviewed and approved by the Board (or a committee designated by the Board).

This letter constitutes the entire agreement between you and the Company. This agreement supersedes any other agreements or promises made to you by anyone, whether oral or written, and it may only be modified in a writing signed by a duly authorized officer of the Company. This agreement shall be construed and enforced in accordance with the laws of the State of Washington without regard to conflicts of law principles.

Sincerely,

**PHATHOM PHARMACEUTICALS, INC.**

By: /s/ David Socks

David Socks, Chief Executive Officer

**ACKNOWLEDGED AND AGREED:**

/s/ Tadataka Yamada

Tadataka Yamada

## PHATHOM PHARMACEUTICALS, INC.

July 21, 2019

David Socks

**Re: Employment Offer Letter**

Dear David:

Phathom Pharmaceuticals, Inc. (the "**Company**") is pleased to offer you a position on the terms set forth in this letter (this "**Agreement**") effective as of May 7, 2019.

- **DUTIES.** You shall serve and shall perform such duties as are customarily associated with the positions of President, Chief Executive Officer, Treasurer and Secretary and shall report to the Board of Directors of the Company (the "**Board**"). This is an exempt position. You shall devote at least eighty percent (80%) of your full working time and attention to the business affairs of the Company.

- **COMPENSATION.** Your initial compensation will be as follows:

- **BASE SALARY.** You will receive an annual base salary of \$340,000 for all hours worked, less taxes, authorized withholdings and other legally required deductions. You will be paid in accordance with the Company's customary payroll procedures as established and modified from time-to-time.
- **ANNUAL BONUS.** In addition to your base salary, you may be eligible to earn, for each fiscal year of the Company ending during the term of your employment with the Company, an annual cash performance bonus under the Company's bonus plan, as approved from time to time by the Board. Your maximum annual bonus will be fifty percent (50%) of your base salary actually paid for the year to which such annual bonus relates. Your actual annual bonus will be determined on the basis of your and/or the Company's attainment of financial or other performance criteria established by the Board or its designee in accordance with the terms and conditions of such bonus plan. You must be employed by the Company on the date of payment of such annual bonus in order to be eligible to receive such annual bonus. You hereby acknowledge and agree that nothing contained herein confers upon you any right to an annual bonus in any year, and that whether the Company pays you an annual bonus and the amount of any such annual bonus will be determined by the Company in its sole discretion.
- **BENEFITS.** You shall be eligible to participate in all of the employee benefit plans or programs the Company generally makes available to similarly situated employees, pursuant to the terms and conditions of such plans. You will also be entitled to vacation and/or paid time off each year in accordance with Company policy and all holidays observed by the Company each year. The Company reserves the right to change compensation and benefits provided to its employees from time to time in its discretion.

- **WITHHOLDING.** All amounts payable to you will be subject to appropriate payroll deductions and withholdings.

- **EXPENSES.** You will be entitled to reimbursement for all ordinary and reasonable out-of-pocket business expenses which are reasonably incurred by you in furtherance of the Company's business, with appropriate documentation and in accordance with the Company's standard policies.

- **COMPANY POLICIES AND PROPRIETARY INFORMATION AND INVENTIONS ASSIGNMENT AGREEMENT.** As an employee of the Company, you shall be expected to abide by all of the Company's policies and procedures and the Company's employee handbook, if any. As a condition of your employment, you agree to execute and abide by the terms of the Company's form of the Proprietary Information and Inventions Assignment Agreement, which shall survive termination of your employment with the Company and the termination of this Proprietary Information and Inventions Assignment Agreement. You acknowledge that a remedy at law for any breach or threatened breach by you of the provisions of the Proprietary Information and Inventions Assignment Agreement would be inadequate, and you therefore agree that the Company shall be entitled to injunctive relief in case of any such breach or threatened breach. The Company may modify, revoke, suspend or terminate any of the terms, plans, policies and/or procedures described in the employee handbook, if any, or as otherwise communicated to you, in whole or part, at any time, with or without notice.

- **EMPLOYMENT TERMS.** As a condition to your employment with the Company, you are required to (a) sign and return a satisfactory I-9 Immigration form providing sufficient documentation establishing your employment eligibility in the United States, and (b) provide satisfactory proof of your identity as required by United States law.

- **OTHER AGREEMENTS.** You represent and agree that your performance of your duties for the Company shall not violate any agreements, obligations or understandings that you may have with any third party or prior employer. Without limiting the foregoing, you represent and agree that you are not bound by any non-compete or non-solicitation agreement or any other type of agreement that would prohibit your employment with the Company. You agree not to make any unauthorized disclosure or use, on behalf of the Company, of any confidential information belonging to any of your former employers. You also represent that you are not in unauthorized possession of any materials containing a third party's confidential and proprietary information. While employed by the Company, you will not engage in any business activity in competition with the Company nor make preparations to do so. In the event that you wish to undertake a business activity outside the scope of your employment by the Company, which activity you believe entails no conflict with the Company's activities, you agree to inform the Company of your intentions before the initiation of such outside business activity, and you furthermore agree to abide by the Company's decision as to whether or not there is no conflict. If, in the Company's sole determination, a conflict exists or is likely to develop, you agree not to undertake such outside business activity. Notwithstanding the foregoing, the Company expressly acknowledges and agrees to your continued services to Frazier Healthcare Partners and further acknowledges and agrees that such continued services will not violate the terms of this Agreement.

- **AT-WILL EMPLOYMENT.** Your employment with the Company will be "at-will" at all times, including after your introductory, probationary period, meaning that either you or the Company will be entitled to terminate your employment at any time and for any reason, with or without cause. Any contrary representations that may have been made to you are superseded by this offer. This Agreement in no way represents a fixed-term employment contract. This is the full and complete agreement between you and the Company on this term. Although your job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at will" nature of

your employment may only be changed in an express written agreement signed by you and a duly authorized officer of the Company.

- **NON-INTERFERENCE.** While employed by the Company, and for one (1) year immediately following the date on which you terminate employment or otherwise cease providing services to the Company, you agree not to interfere with the business of the Company by (a) soliciting or attempting to solicit any employee or consultant of the Company to terminate such employee's or consultant's employment or service in order to become an employee, consultant or independent contractor to or for any other person or entity or (b) soliciting or attempting to solicit any vendor, supplier, customer or other person or entity either directly or indirectly, to direct his, her or its purchase of the Company's products and/or services to any person, firm, corporation, institution or other entity in competition with the business of the Company. The foregoing restrictions shall not apply with respect to the bona fide hiring and firing of Company personnel to the extent such acts are part of your duties for Company. Your duties under this paragraph shall survive termination of your employment with the Company and the termination of this Agreement.

- **REASONABLENESS OF TERMS.** You agree that the terms contained in the "Other Agreements" and "Non-Interference" paragraphs above are reasonable in all respects and that the restrictions contained therein are designed to protect the Company against unfair competition. In the event a court determines that any of the terms or provisions of this Agreement are unreasonable, the court may limit the application of any provision or term, or modify any provision or term, and proceed to enforce this Agreement as so limited or modified.

- **GOVERNING LAW; JURISDICTION AND VENUE.** This Agreement, for all purposes, shall be construed in accordance with the laws of the State of California without regard to conflicts-of-law principles. Any action or proceeding by either party to enforce this Agreement shall be brought only in any state or federal court located in San Diego County, California. The parties hereby irrevocably submit to the exclusive jurisdiction of such courts and waive the defense of inconvenient forum to the maintenance of any such action or proceeding in such venue.

- **SEVERABILITY.** Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be invalid, illegal or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality or unenforceability will not affect any other provision or any other jurisdiction, but this Agreement will be reformed, construed and enforced in such jurisdiction as if such invalid, illegal or unenforceable provisions had never been contained herein.

- **SUCCESSORS AND ASSIGNS.** This Agreement is intended to bind and inure to the benefit of and be enforceable by you and the Company, and their respective successors, assigns, heirs, executors and administrators, except that you may not assign any of your duties hereunder and you may not assign any of your rights hereunder, without the written consent of the Company, which shall not be withheld unreasonably.

- **ENTIRE AGREEMENT.** This Agreement and the Proprietary Information and Inventions Assignment Agreement constitute the complete, final and exclusive embodiment of the entire agreement between you and the Company with respect to the terms and conditions of your employment specified herein and therein. This Agreement and the Proprietary Information and Inventions Assignment Agreement supersede any other such promises, obligations, warranties, representations or agreements between you and the Company, including, but not limited to, any previous offer letters or consulting agreements between you and the Company, or any predecessor thereto, and you agree that any and all such prior promises, obligations, warranties, representations and agreements are hereby terminated. This

Agreement may not be amended or modified except by a written instrument signed by you and a duly authorized officer of the Company.

If you choose to accept this Agreement under the terms described above, please acknowledge your acceptance of our offer by returning a signed copy of this letter and the Proprietary Information and Inventions Assignment Agreement to our attention.

Sincerely,

**Phathom Pharmaceuticals, Inc.**

/s/ Tadataka Yamada

\_\_\_\_\_  
Name: Tadataka Yamada

Title: Chairman

**Agreed and Accepted:**

I have read and understood this Agreement and hereby acknowledge, accept and agree to the terms as set forth above and further acknowledge and agree that no other commitments were made to me as part of my employment offer except as specifically set forth herein.

/s/ David Socks

\_\_\_\_\_  
David Socks

Date: July 21, 2019

Attachments:

Proprietary Information and Inventions Assignment Agreement

## PHATHOM PHARMACEUTICALS, INC.

July 21, 2019

Azmi Nabulsi, MD., M.P.H.

**Re: Employment Offer Letter**

Dear Azmi:

Phathom Pharmaceuticals, Inc. (the "**Company**") is pleased to offer you a position on the terms set forth in this letter (this "**Agreement**") effective as of May 7, 2019.

• **DUTIES.** You shall serve and shall perform such duties as are customarily associated with the position of Chief Operating Officer and such other duties as are assigned to you by your supervisor, David Socks, President, Chief Executive Officer, Treasurer and Secretary. Your job duties and responsibilities may change from time to time, without advance notice, in the sole discretion of the Company. You shall initially report to David Socks and shall perform your services on a full-time basis at the Company's facilities in Cook County, Illinois. This is an exempt position. You shall devote your full working time and attention to the business affairs of the Company.

• **COMPENSATION.** Your initial compensation will be as follows:

- **BASE SALARY.** You will receive an annual base salary of \$470,000 for all hours worked, less taxes, authorized withholdings and other legally required deductions. You will be paid in accordance with the Company's customary payroll procedures as established and modified from time-to-time.
- **ANNUAL BONUS.** In addition to your base salary, you may be eligible to earn, for each fiscal year of the Company ending during the term of your employment with the Company, an annual cash performance bonus under the Company's bonus plan, as approved from time to time by the board of directors. Your maximum annual bonus will be forty percent (40%) of your base salary actually paid for the year to which such annual bonus relates. Your actual annual bonus will be determined on the basis of your and/or the Company's attainment of financial or other performance criteria established by the board of directors or its designee in accordance with the terms and conditions of such bonus plan. You must be employed by the Company on the date of payment of such annual bonus in order to be eligible to receive such annual bonus. You hereby acknowledge and agree that nothing contained herein confers upon you any right to an annual bonus in any year, and that whether the Company pays you an annual bonus and the amount of any such annual bonus will be determined by the Company in its sole discretion.
- **BENEFITS.** You shall be eligible to participate in all of the employee benefit plans or programs the Company generally makes available to similarly situated

employees, pursuant to the terms and conditions of such plans. You will also be entitled to vacation and/or paid time off each year in accordance with Company policy and all holidays observed by the Company each year. The Company reserves the right to change compensation and benefits provided to its employees from time to time in its discretion.

- **WITHHOLDING.** All amounts payable to you will be subject to appropriate payroll deductions and withholdings.

- **EXPENSES.** You will be entitled to reimbursement for all ordinary and reasonable out-of-pocket business expenses which are reasonably incurred by you in furtherance of the Company's business, with appropriate documentation and in accordance with the Company's standard policies.

- **COMPANY POLICIES AND PROPRIETARY INFORMATION AND INVENTIONS ASSIGNMENT AGREEMENT.** As an employee of the Company, you shall be expected to abide by all of the Company's policies and procedures and the Company's employee handbook, if any. As a condition of your employment, you agree to execute and abide by the terms of the Company's form of the Proprietary Information and Inventions Assignment Agreement, which shall survive termination of your employment with the Company and the termination of this Proprietary Information and Inventions Assignment Agreement. You acknowledge that a remedy at law for any breach or threatened breach by you of the provisions of the Proprietary Information and Inventions Assignment Agreement would be inadequate, and you therefore agree that the Company shall be entitled to injunctive relief in case of any such breach or threatened breach. The Company may modify, revoke, suspend or terminate any of the terms, plans, policies and/or procedures described in the employee handbook, if any, or as otherwise communicated to you, in whole or part, at any time, with or without notice.

- **EMPLOYMENT TERMS.** As a condition to your employment with the Company, you are required to (a) sign and return a satisfactory I-9 Immigration form providing sufficient documentation establishing your employment eligibility in the United States, and (b) provide satisfactory proof of your identity as required by United States law.

- **OTHER AGREEMENTS.** You represent and agree that your performance of your duties for the Company shall not violate any agreements, obligations or understandings that you may have with any third party or prior employer. Without limiting the foregoing, you represent and agree that you are not bound by any non-compete or non-solicitation agreement or any other type of agreement that would prohibit your employment with the Company. You agree not to make any unauthorized disclosure or use, on behalf of the Company, of any confidential information belonging to any of your former employers. You also represent that you are not in unauthorized possession of any materials containing a third party's confidential and proprietary information. While employed by the Company, you will not engage in any business activity in competition with the Company nor make preparations to do so. In the event that you wish to undertake a business activity outside the scope of your employment by the Company, which activity you believe entails no conflict with the Company's activities, you agree to inform the Company of your intentions before the initiation of such outside business activity, and you furthermore agree to abide by the Company's decision as to whether or not there is no conflict. If, in the Company's sole determination, a conflict exists or is likely to develop, you agree not to undertake such outside business activity.

- **AT-WILL EMPLOYMENT.** Your employment with the Company will be "at-will" at all times, including after your introductory, probationary period, meaning that either you or the Company will be entitled to terminate your employment at any time and for any reason, with or without cause. Any contrary representations that may have been made to you are superseded by this offer. This Agreement in



no way represents a fixed-term employment contract. This is the full and complete agreement between you and the Company on this term. Although your job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at will" nature of your employment may only be changed in an express written agreement signed by you and a duly authorized officer of the Company.

- **NON-INTERFERENCE.** While employed by the Company, and for one (1) year immediately following the date on which you terminate employment or otherwise cease providing services to the Company, you agree not to interfere with the business of the Company by (a) soliciting or attempting to solicit any employee or consultant of the Company to terminate such employee's or consultant's employment or service in order to become an employee, consultant or independent contractor to or for any other person or entity or (b) soliciting or attempting to solicit any vendor, supplier, customer or other person or entity either directly or indirectly, to direct his, her or its purchase of the Company's products and/or services to any person, firm, corporation, institution or other entity in competition with the business of the Company. The foregoing restrictions shall not apply with respect to the bona fide hiring and firing of Company personnel to the extent such acts are part of your duties for Company. Your duties under this paragraph shall survive termination of your employment with the Company and the termination of this Agreement.

- **REASONABLENESS OF TERMS.** You agree that the terms contained in the "Other Agreements" and "Non-Interference" paragraphs above are reasonable in all respects and that the restrictions contained therein are designed to protect the Company against unfair competition. In the event a court determines that any of the terms or provisions of this Agreement are unreasonable, the court may limit the application of any provision or term, or modify any provision or term, and proceed to enforce this Agreement as so limited or modified.

- **GOVERNING LAW; JURISDICTION AND VENUE.** This Agreement, for all purposes, shall be construed in accordance with the laws of the State of Illinois without regard to conflicts-of-law principles. Any action or proceeding by either party to enforce this Agreement shall be brought only in any state or federal court located in Cook County, Illinois. The parties hereby irrevocably submit to the exclusive jurisdiction of such courts and waive the defense of inconvenient forum to the maintenance of any such action or proceeding in such venue.

- **SEVERABILITY.** Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be invalid, illegal or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality or unenforceability will not affect any other provision or any other jurisdiction, but this Agreement will be reformed, construed and enforced in such jurisdiction as if such invalid, illegal or unenforceable provisions had never been contained herein.

- **SUCCESSORS AND ASSIGNS.** This Agreement is intended to bind and inure to the benefit of and be enforceable by you and the Company, and their respective successors, assigns, heirs, executors and administrators, except that you may not assign any of your duties hereunder and you may not assign any of your rights hereunder, without the written consent of the Company, which shall not be withheld unreasonably.

- **ENTIRE AGREEMENT.** This Agreement and the Proprietary Information and Inventions Assignment Agreement constitute the complete, final and exclusive embodiment of the entire agreement between you and the Company with respect to the terms and conditions of your employment specified herein and therein. This Agreement and the Proprietary Information and Inventions Assignment Agreement supersede any other such promises, obligations, warranties, representations or agreements

between you and the Company, including, but not limited to, any previous offer letters or consulting agreements between you and the Company, or any predecessor thereto, and you agree that any and all such prior promises, obligations, warranties, representations and agreements are hereby terminated. This Agreement may not be amended or modified except by a written instrument signed by you and a duly authorized officer of the Company.

If you choose to accept this Agreement under the terms described above, please acknowledge your acceptance of our offer by returning a signed copy of this letter and the Proprietary Information and Inventions Assignment Agreement to our attention.

Sincerely,

**Phathom Pharmaceuticals, Inc.**

/s/ David Socks

\_\_\_\_\_  
Name: David Socks

Title: CEO

**Agreed and Accepted:**

I have read and understood this Agreement and hereby acknowledge, accept and agree to the terms as set forth above and further acknowledge and agree that no other commitments were made to me as part of my employment offer except as specifically set forth herein.

/s/ Azmi Nabulsi

\_\_\_\_\_  
Azmi Nabulsi

Date: July 21st, 2019

Attachments:

Proprietary Information and Inventions Assignment Agreement

## PHATHOM PHARMACEUTICALS, INC.

July 23, 2019

Aditya Kohli, Ph.D.

**Re: Employment Offer Letter**

Dear Aditya:

Phathom Pharmaceuticals, Inc. (the "**Company**") is pleased to offer you a position on the terms set forth in this letter (this "**Agreement**") effective as of May 7, 2019.

- **DUTIES.** You shall serve and shall perform such duties as are customarily associated with the position of Chief Business Officer and such other duties as are assigned to you by your supervisor, Azmi Nabulsi, Chief Operating Officer. Your job duties and responsibilities may change from time to time, without advance notice, in the sole discretion of the Company. You shall initially report to Azmi Nabulsi and shall perform your services at the Company's facilities in San Mateo County, California. This is an exempt position. You shall devote at least eighty percent (80%) of your full working time and attention to the business affairs of the Company.
- **COMPENSATION.** Your initial compensation will be as follows:
  - **BASE SALARY.** You will receive an annual base salary of \$180,000 for all hours worked, less taxes, authorized withholdings and other legally required deductions. Effective August 1, 2019, your annual base salary will be increased to \$220,000. You will be paid in accordance with the Company's customary payroll procedures as established and modified from time-to-time.
  - **ANNUAL BONUS.** In addition to your base salary, you may be eligible to earn, for each fiscal year of the Company ending during the term of your employment with the Company, an annual cash performance bonus under the Company's bonus plan, as approved from time to time by the board of directors. Your maximum annual bonus will be thirty-five percent (35%) of your base salary actually paid for the year to which such annual bonus relates. Your actual annual bonus will be determined on the basis of your and/or the Company's attainment of financial or other performance criteria established by the board of directors or its designee in accordance with the terms and conditions of such bonus plan. You must be employed by the Company on the date of payment of such annual bonus in order to be eligible to receive such annual bonus. You hereby acknowledge and agree that nothing contained herein confers upon you any right to an annual bonus in any year, and that whether the Company pays you an annual bonus and the amount of any such annual bonus will be determined by the Company in its sole discretion.

- **BENEFITS.** You shall be eligible to participate in all of the employee benefit plans or programs the Company generally makes available to similarly situated employees, pursuant to the terms and conditions of such plans. You will also be entitled to vacation and/or paid time off each year in accordance with Company policy and all holidays observed by the Company each year. The Company reserves the right to change compensation and benefits provided to its employees from time to time in its discretion.
- **WITHHOLDING.** All amounts payable to you will be subject to appropriate payroll deductions and withholdings.
- **EXPENSES.** You will be entitled to reimbursement for all ordinary and reasonable out-of-pocket business expenses which are reasonably incurred by you in furtherance of the Company's business, with appropriate documentation and in accordance with the Company's standard policies.
- **COMPANY POLICIES AND PROPRIETARY INFORMATION AND INVENTIONS ASSIGNMENT AGREEMENT.** As an employee of the Company, you shall be expected to abide by all of the Company's policies and procedures and the Company's employee handbook, if any. As a condition of your employment, you agree to execute and abide by the terms of the Company's form of the Proprietary Information and Inventions Assignment Agreement, which shall survive termination of your employment with the Company and the termination of this Proprietary Information and Inventions Assignment Agreement. You acknowledge that a remedy at law for any breach or threatened breach by you of the provisions of the Proprietary Information and Inventions Assignment Agreement would be inadequate, and you therefore agree that the Company shall be entitled to injunctive relief in case of any such breach or threatened breach. The Company may modify, revoke, suspend or terminate any of the terms, plans, policies and/or procedures described in the employee handbook, if any, or as otherwise communicated to you, in whole or part, at any time, with or without notice.
- **EMPLOYMENT TERMS.** As a condition to your employment with the Company, you are required to (a) sign and return a satisfactory I-9 Immigration form providing sufficient documentation establishing your employment eligibility in the United States, and (b) provide satisfactory proof of your identity as required by United States law.
- **OTHER AGREEMENTS.** You represent and agree that your performance of your duties for the Company shall not violate any agreements, obligations or understandings that you may have with any third party or prior employer. Without limiting the foregoing, you represent and agree that you are not bound by any non-compete or non-solicitation agreement or any other type of agreement that would prohibit your employment with the Company. You agree not to make any unauthorized disclosure or use, on behalf of the Company, of any confidential information belonging to any of your former employers. You also represent that you are not in unauthorized possession of any materials containing a third party's confidential and proprietary information. While employed by the Company, you will not engage in any business activity in competition with the Company nor make preparations to do so. In the event that you wish to undertake a business activity outside the scope of your employment by the Company, which activity you believe entails no conflict with the Company's activities, you agree to inform the Company of your intentions before the initiation of such outside business activity, and you furthermore agree to abide by the Company's decision as to whether or not there is no conflict. If, in the Company's sole determination, a conflict exists or is likely to develop, you agree not to undertake such outside business activity. Notwithstanding the foregoing, the Company expressly acknowledges and agrees to your continued services to Frazier Healthcare Partners and further acknowledges and agrees that such continued services will not violate the terms of this Agreement.

• **AT-WILL EMPLOYMENT.** Your employment with the Company will be “at-will” at all times, including after your introductory, probationary period, meaning that either you or the Company will be entitled to terminate your employment at any time and for any reason, with or without cause. Any contrary representations that may have been made to you are superseded by this offer. This Agreement in no way represents a fixed-term employment contract. This is the full and complete agreement between you and the Company on this term. Although your job duties, title, compensation and benefits, as well as the Company’s personnel policies and procedures, may change from time to time, the “at will” nature of your employment may only be changed in an express written agreement signed by you and a duly authorized officer of the Company.

• **NON-INTERFERENCE.** While employed by the Company, and for one (1) year immediately following the date on which you terminate employment or otherwise cease providing services to the Company, you agree not to interfere with the business of the Company by (a) soliciting or attempting to solicit any employee or consultant of the Company to terminate such employee’s or consultant’s employment or service in order to become an employee, consultant or independent contractor to or for any other person or entity or (b) soliciting or attempting to solicit any vendor, supplier, customer or other person or entity either directly or indirectly, to direct his, her or its purchase of the Company’s products and/or services to any person, firm, corporation, institution or other entity in competition with the business of the Company. The foregoing restrictions shall not apply with respect to the bona fide hiring and firing of Company personnel to the extent such acts are part of your duties for Company. Your duties under this paragraph shall survive termination of your employment with the Company and the termination of this Agreement.

• **REASONABLENESS OF TERMS.** You agree that the terms contained in the “Other Agreements” and “Non-Interference” paragraphs above are reasonable in all respects and that the restrictions contained therein are designed to protect the Company against unfair competition. In the event a court determines that any of the terms or provisions of this Agreement are unreasonable, the court may limit the application of any provision or term, or modify any provision or term, and proceed to enforce this Agreement as so limited or modified.

• **GOVERNING LAW; JURISDICTION AND VENUE.** This Agreement, for all purposes, shall be construed in accordance with the laws of the State of California without regard to conflicts-of-law principles. Any action or proceeding by either party to enforce this Agreement shall be brought only in any state or federal court located in San Mateo County, California. The parties hereby irrevocably submit to the exclusive jurisdiction of such courts and waive the defense of inconvenient forum to the maintenance of any such action or proceeding in such venue.

• **SEVERABILITY.** Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be invalid, illegal or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality or unenforceability will not affect any other provision or any other jurisdiction, but this Agreement will be reformed, construed and enforced in such jurisdiction as if such invalid, illegal or unenforceable provisions had never been contained herein.

• **SUCCESSORS AND ASSIGNS.** This Agreement is intended to bind and inure to the benefit of and be enforceable by you and the Company, and their respective successors, assigns, heirs, executors and administrators, except that you may not assign any of your duties hereunder and you may not assign any of your rights hereunder, without the written consent of the Company, which shall not be withheld unreasonably.

• **ENTIRE AGREEMENT.** This Agreement and the Proprietary Information and Inventions Assignment Agreement constitute the complete, final and exclusive embodiment of the entire agreement between you and the Company with respect to the terms and conditions of your employment specified herein and therein. This Agreement and the Proprietary Information and Inventions Assignment Agreement supersede any other such promises, obligations, warranties, representations or agreements between you and the Company, including, but not limited to, any previous offer letters or consulting agreements between you and the Company, or any predecessor thereto, and you agree that any and all such prior promises, obligations, warranties, representations and agreements are hereby terminated. This Agreement may not be amended or modified except by a written instrument signed by you and a duly authorized officer of the Company.

If you choose to accept this Agreement under the terms described above, please acknowledge your acceptance of our offer by returning a signed copy of this letter and the Proprietary Information and Inventions Assignment Agreement to our attention.

Sincerely,

**Phathom Pharmaceuticals, Inc.**

/s/ David Socks

\_\_\_\_\_  
Name: David Socks

Title: CEO

**Agreed and Accepted:**

I have read and understood this Agreement and hereby acknowledge, accept and agree to the terms as set forth above and further acknowledge and agree that no other commitments were made to me as part of my employment offer except as specifically set forth herein.

/s/ Aditya Kohli

\_\_\_\_\_  
Aditya Kohli

Date: July 23, 2019

Attachments:

Proprietary Information and Inventions Assignment Agreement

**CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [\*\*\*], HAS BEEN OMITTED BECAUSE PHATHOM PHARMACEUTICALS, INC. HAS DETERMINED THE INFORMATION (I) IS NOT MATERIAL AND (II) WOULD LIKELY CAUSE COMPETITIVE HARM TO PHATHOM PHARMACEUTICALS, INC. IF PUBLICLY DISCLOSED.**

**LICENSE AGREEMENT**

**BY AND BETWEEN**

**TAKEDA PHARMACEUTICAL COMPANY LIMITED**

**AND**

**PHATHOM PHARMACEUTICALS, INC.**

## LICENSE AGREEMENT

**This License Agreement** (this “**Agreement**”) is made effective as of May 7, 2019 (the “**Effective Date**”) by and between Takeda Pharmaceutical Company Limited, a company incorporated under the laws of Japan having its principal place of business at 1-1, Doshomachi 4-chome, Chuo-ku, Osaka 540-8645, Japan (“**Takeda**”), and Phathom Pharmaceuticals, Inc., a company incorporated under the laws of Delaware having its principal place of business at 70 Willow Road, Suite 200, Menlo Park, California 94025, U.S.A. (“**Licensee**”). Licensee and Takeda are sometimes referred to herein individually as a “**Party**” and collectively as the “**Parties**.”

### RECITALS

**WHEREAS**, Takeda is a pharmaceutical company engaged in the research, development and commercialization of products useful in the amelioration, treatment or prevention of human diseases and conditions;

**WHEREAS**, Licensee was recently formed for the purposes of engaging in the research and development, and if successful, commercialization of pharmaceutical products in the gastroenterology and related fields; and

**WHEREAS**, Licensee wishes to be granted, and Takeda desires to grant, a license in the Territory (as defined below) under certain patents, patent applications, know-how, and other proprietary information for the further development of the Compound and Product and commercialization of the Product (as those terms are defined below).

**NOW, THEREFORE**, in consideration of the foregoing and the mutual agreements set forth below, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

### ARTICLE 1 – DEFINITIONS

1.1 “Affiliate” means, with respect to a particular Party, a person, corporation, partnership, or other entity that controls, is controlled by or is under common control with such Party. For the purposes of this definition, the word “control” (including, with correlative meaning, the terms “controlled by” or “under the common control with”) means the actual power, either directly or indirectly through one or more intermediaries, to direct or cause the direction of the management and policies of such entity, whether by the ownership of fifty percent (50%) or more of the voting stock of such entity, or by contract or otherwise.

1.2 “Additional Required Clinical Trials” means any additional Clinical Trial that is not included in the Initial Development Plan but that a Regulatory Authority in the Territory requires Licensee to conduct in order to obtain or maintain Regulatory Approval in the Territory for a Permitted Product Formulation for the treatment of either (i) GERD; or (ii) H. Pylori infection.

1.3 “Applicable Law” means all applicable statutes, ordinances, regulations, rules, or orders of any kind whatsoever of any Governmental Authority, including the U.S. Food, Drug and Cosmetic Act, (21 U.S.C. §301 et seq.) (the “FFDCA”), Prescription Drug Marketing Act, the Generic Drug



Enforcement Act of 1992 (21 U.S.C. §335a et seq.), U.S. Patent Act (35 U.S.C. §1 et seq.), Federal Civil False Claims Act (31 U.S.C. §3729 et seq.), and the Anti-Kickback Statute (42 U.S.C. §1320a-7b et seq.), all as amended from time to time, together with any rules, regulations, and compliance guidance promulgated thereunder.

1.4 “Bankruptcy Laws” has the meaning set forth in Section 13.5(b).

1.5 “Bayh-Doyle Act” means the Patent and Trademark Law Amendments Act of 1980, as amended, codified at 35 U.S.C. §§ 200-212, as well as any regulations promulgated pursuant thereto, including 37 C.F.R. Part 401, and any successor statutes or regulations.

1.6 “Breaching Party” has the meaning set forth in Section 13.2(a).

1.7 “Business Day” means a day other than Saturday, Sunday or any other day on which commercial banks located in the State of New York, U.S., or Japan, are authorized or obligated by Applicable Law to close.

1.8 “Calendar Quarter” means the respective periods of three (3) consecutive calendar months ending on March 31, June 30, September 30 and December 31; provided, however, that (a) the first Calendar Quarter of the Term shall extend from the Effective Date to the end of the first complete Calendar Quarter thereafter; and (b) the last Calendar Quarter of the Term shall end upon the expiration or termination of this Agreement.

1.9 “Calendar Year” means the twelve (12)-month period ending on December 31; provided however, that (a) the first Calendar Year of the Term shall begin on the Effective Date and end on December 31, 2019; and (b) the last Calendar Year of the Term shall end on the date of expiration or termination of this Agreement.

1.10 “Claim” has the meaning set forth in Section 15.1.

1.11 “Clinical Supply Agreement” means the Clinical Supply Agreement attached hereto as Exhibit J, as such Clinical Supply Agreement may be modified or amended in accordance with the terms thereof.

1.12 “Clinical Trial” means any human clinical study or trial of a Product in the Field.

1.13 “Commercialization” means all activities undertaken in support of the promotion, marketing, sale and distribution (including importing, exporting, transporting, customs clearance, warehousing, invoicing, handling and delivering the Products to customers) of the Products in the Field. “Commercialize” means to engage in Commercialization activities.

1.14 “Commercialization Plan” means a plan prepared by Licensee pursuant to Section 7.2 containing an overview of the general strategy and a high-level budget for Commercializing the Products in the Field in the Territory.

1.15 “Commercially Reasonable Efforts” means, with respect to the efforts to be expended, or considerations to be undertaken, by a Party or its Affiliate with respect to any objective, activity or decision to be undertaken hereunder, reasonable, good faith efforts to accomplish such objective,

activity or decision as a similarly situated pharmaceutical company would normally use to accomplish a similar objective, activity or decision under similar circumstances, it being understood and agreed that with respect to the Development, Manufacture, seeking and obtaining Regulatory Approval, or Commercialization of the Compound or a Product, Licensee may take into account: (a) issues of efficacy, safety, and expected and actual approved labeling, (b) the expected and actual competitiveness of alternative products sold by Third Parties in the marketplace, (c) the expected and actual product profile of the Compound or Product, (d) the expected and actual patent and other proprietary position of the Product, (e) the likelihood of Regulatory Approval and/or pricing approval given the regulatory structure involved, including regulatory or data exclusivity, (f) the expected and actual profitability and return on investment of the Compound or Product, taking into consideration amounts owed hereunder, and (g) all other relevant scientific, technical, regulatory and commercial factors.

1.16 "Common Stock" shall have the meaning set forth in Section 2.2(a).

1.17 "Commercial Supply Agreement" shall have the meaning set forth in Section 5.7.

1.18 "Competing Product" shall mean any pharmaceutical product, other than any Product, approved to treat acid-related disorders in the Field in the Territory.

1.19 "Compound" means the chemical compound vonoprazan fumarate (coded by Takeda as TAK-438), and, any derivatives thereof, including any analogs, prodrugs, alternative salts, hydrates, solvates, esters, metabolites, intermediates, stereoisomers, complexes, and co-crystals, thereof.

1.20 "Confidential Information" means all non-public or proprietary Information disclosed by a Party to the other Party under this Agreement, without regard as to whether any of such Information is marked "confidential" or "proprietary," or disclosed in oral, written, graphic, or electronic form. Confidential Information shall include the terms and conditions of this Agreement.

1.21 "Control" means, with respect to any Information, Patent, trademark or other intellectual property right, ownership or possession by a Party, or, where expressly provided, its Affiliates, of the ability (without taking into account any rights granted by one Party to the other Party under the terms of this Agreement) to grant access, a license or a sublicense to such Information, Patent, trademark or other intellectual property right without violating the terms of any agreement or other arrangement with, or necessitating the consent of, any Third Party, at such time that the Party would be first required under this Agreement to grant the other Party such access, license or sublicense.

1.22 "Cure Period" has the meaning set forth in Section 13.2(a).

1.23 "Designated Clinical Trial" has the meaning set forth in Exhibit I.

1.24 "Development" means all (i) non-clinical and clinical drug development activities, including toxicology, pharmacology, and other non-clinical efforts, statistical analysis, the performance of Clinical Trials, including the Manufacturing of the Product for use in the Clinical Trials, and (ii) other activities reasonably necessary in order to obtain or maintain, Regulatory

Approval of the Product in the Field. When used as a verb, “Develop” means to engage in Development activities.

1.25 “Development Plan” means a detailed written plan prepared by Licensee for the Development activities to which such plan relates, and which plan shall (a) identify the Development objectives, projected timeline and activities to be conducted pursuant to this Agreement with respect to the Product during the Term; and (b) contain a reasonably detailed budget identifying the anticipated expenses associated with such Development activities. “Development Plan” includes the “Initial Development Plan”.

1.26 “Disclosing Party” has the meaning set forth in Section 11.1.

1.27 “Dispute” or “Disputes” has the meaning set forth in Section 14.1.

1.28 “EMA” means the European Medicines Agency or any successor agency or authority having substantially the same function.

1.29 “Europe” means Albania, Andorra, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Monaco, Montenegro, Netherlands, North Macedonia (formerly Macedonia), Norway, Poland, Portugal, Romania, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, and Vatican City (Holy See).

1.30 “Exploit” or “Exploitation” means to research, make, import, export, distribute, use, sell, or offer for sale, including to Develop, Commercialize, register, modify, enhance, improve, hold, keep (whether for disposal or otherwise), transport, distribute, promote, market, or otherwise dispose of, or to have performed any of the foregoing.

1.31 “FDA” means the U.S. Food and Drug Administration, or any successor agency thereto.

1.32 “FFDCA” means the Federal Food, Drug and Cosmetic Act under United States Code, Title 21, as amended.

1.33 “Field” means all human therapeutic uses.

1.34 “First Commercial Sale” means, on a country-by-country basis, the first sale of a Product by Licensee, its Affiliates or its sublicensees to an end user or prescriber for use, consumption or resale of the Product in a country in the Territory in the Field where Regulatory Approval of the Product has been obtained.

1.35 “Force Majeure” means any event beyond the reasonable control of the affected Party including, but not limited to, embargoes; war or acts of war, including terrorism; insurrections, riots, or civil unrest; strikes, lockouts or other labor disturbances; epidemics, fire, floods, earthquakes or other acts of nature; or acts, omissions or delays in acting by any governmental authority (including, but not limited to, the refusal of the competent government agencies to issue required Regulatory Approvals due to reasons other than the affected Party’s negligence or willful misconduct or any other cause within the reasonable control of the affected Party), and failure of

plant or machinery (provided that such failure could not have been prevented by the exercise of skill, diligence, and prudence that would be reasonably and ordinarily expected from a skilled and experienced person engaged in the same type of undertaking under the same or similar circumstances).

1.36 “Fully Diluted Capitalization” means the outstanding shares of Common Stock of Licensee on a fully diluted basis, including (i) outstanding shares of preferred stock (on an as-converted basis), (ii) outstanding vested and unvested stock options (on an as-exercised basis) and all shares of Common Stock held in reserve in any of the Company’s equity incentive plans that are not then yet allocated for outstanding and unexercised stock options, (iii) outstanding warrants (on an as-exercised basis), and (iv) other outstanding convertible securities (on an as-converted basis).

1.37 “GAAP” means generally accepted accounting principles current in the U.S.

1.38 “Generic Competition Percentage” means, with respect to a particular Product in a particular country in the Territory, all units of the Generic Product(s) for such Product sold in such country in the Territory divided by the sum of: (a) all units of such Product sold in such country in the Territory, plus (b) all units of all Generic Product(s) sold in such country in the Territory, where, in each case, the number of units of a Product and each Generic Product sold shall be based on the average of the monthly IMS data (or IMS-equivalent data if IMS data are not available).

1.39 “Generic Competing Product” means, with respect to any Competing Product (other than an Over-The-Counter Competing Product) sold by a Third Party in the Territory, any pharmaceutical product that is Therapeutically Equivalent to the applicable Competing Product.

For the purposes of this definition, a drug product will be deemed “Therapeutically Equivalent” to the applicable Competing Product (the “Reference Listed Drug”) if each of the following criteria are met regarding that drug product: (1) same active ingredient; (2) same dosage form; (3) same route of administration; (4) same strength; and, in the United States only: (5) assigned by the FDA the same therapeutic equivalence code, starting with the letter “A” and further demonstrates that the Generic Competing Product is bioequivalent; and (6) designates such Competing Product to be the Reference Listed Drug.

1.40 “Generic Product” means, on a Product-by-Product basis, any pharmaceutical product sold by a Third Party in the Territory, other than as a sublicensee under the license granted to Licensee under this Agreement that: (a) contains the same active ingredients as the applicable Product, including any fixed-dose Combination Product and in the same dosage form (e.g., oral, injectable, intranasal, etc.) as the applicable Product, or Combination Product and has obtained Regulatory Approval in such country and is substitutable for such Product in such country; or (b) is A/B Rated with respect to such Product or Combination Product or otherwise approved by the applicable Regulatory Authority and substituted as a generic for such Product.

For the purposes of this definition, “A/B Rated” means, inside the U.S., “therapeutically equivalent” as determined by the FDA, applying the definition of “therapeutically equivalent” set forth in the preface to the then-current edition of the FDA publication “Approved Drug Products With Therapeutic Equivalence Evaluations.”

1.41 “Good Clinical Practices” or “GCP” means the then-current standards, practices and procedures promulgated or endorsed by the FDA as set forth in the guidelines adopted by the International Conference on Harmonization (“ICH”), titled “Guidance for Industry E6 Good Clinical Practice: Consolidated Guidance,” (or any successor document) including related regulatory requirements imposed by the FDA and comparable regulatory standards, practices and procedures promulgated by the EMA or other Regulatory Authority applicable to the Territory, as they may be updated from time to time.

1.42 “Good Laboratory Practices”, “GLP”, or “cGLP” means the then-current standards, practices and procedures promulgated or endorsed by the FDA as set forth in 21 C.F.R. Part 58 (or any successor statute or regulation), including related regulatory requirements imposed by the FDA and comparable regulatory standards, practices and procedures promulgated by the EMA or other Regulatory Authority applicable to the Territory, as they may be updated from time to time, including applicable guidelines promulgated under the ICH.

1.43 “Governmental Authority” means any multi-national, federal, state, local, municipal or other government authority of any nature (including any governmental division, subdivision, department, agency, bureau, branch, office, commission, council, court or other tribunal).

1.44 “IFRS” means International Financial Reporting Standards.

1.45 “IND” means an Investigational New Drug application as defined in the FDCA, as amended, and applicable regulations promulgated hereunder by the FDA, or a Clinical Trial authorization application for a product filed with a Regulatory Authority in any other regulatory jurisdiction outside the U.S., the filing of which is necessary to commence or conduct clinical testing of a pharmaceutical product in humans in such jurisdiction.

1.46 “Indemnitee” shall have the meaning set forth in Section 15.3(a).

1.47 “Indemnifying Party” shall have the meaning set forth in Section 15.3(a).

1.48 “Information” means information, Inventions, concepts, compounds, compositions, formulations, formulas, practices, procedures, processes, methods, knowledge, know-how, trade secrets, technology, techniques, designs, drawings, correspondence, computer programs, documents, apparatus, results, strategies, regulatory documentation, information and submissions pertaining to, or made in association with, filings with any Government Authority or patent office, data, including pharmacological, toxicological, non-clinical and clinical data, analytical and quality control data, manufacturing data and descriptions, patent and legal data, market data, financial data or descriptions, devices, assays, chemical formulations, specifications, material, product samples and other samples, physical, chemical and biological materials and compounds, and the like, in written, electronic, oral or other tangible or intangible form, now known or hereafter developed, whether or not patentable.

1.49 “Information Sharing Committee” shall have the meaning set forth in Section 12.1.

1.50 “Initial Development Plan” means the initial Development Plan for the Product attached to this Agreement as Exhibit A.

1.51 “Inventions” means any and all inventions, discoveries and developments, whether or not patentable, made, conceived and/or reduced to practice in the course of performance of activities under this Agreement whether made, conceived and/or reduced to practice solely by, or on behalf of, Takeda, Licensee, the Parties jointly, or any Affiliate of the same.

1.52 “Involved Employee” has the meaning set forth in Section 10.3(d).

1.53 “Joint Know-How” means all Information and Inventions jointly created by Licensee and Takeda under this Agreement and during the Term that is necessary or useful to Exploit the Compound or Product in the Field. Joint Know-How excludes any Information or Inventions contained within a Joint Patent.

1.54 “Joint Intellectual Property” means, collectively, Joint Know-How and Joint Patents.

1.55 “Joint Inventions” shall have the meaning set forth in Section 9.1.

1.56 “Joint Patents” means all Patents covering or claiming any Joint Invention.

1.57 “Knowledge” means, as applied to a Party, that such Party shall be deemed to have knowledge of a particular fact or other matter to the extent that a person within the Knowledge Group knew of such fact or other matter.

1.58 “Knowledge Group” means, with respect to each Party, the officer and directors of such Party, or any Affiliates of such Party.

1.59 “Labeling” means the healthcare professional information or patient information used in the Territory that is part of the Product NDA, including the package insert, medication guides, summary of product characteristics (“SmPC”), patient information leaflets, company core safety information (“CCSI”) and company core data sheet (“CCDS”).

1.60 “Licensee Indemnitee” shall have the meaning set forth in Section 15.2.

1.61 “Licensee Intellectual Property” means, collectively, Licensee Know-How and Licensee Patents.

1.62 “Licensee Know-How” means all Information and Inventions Controlled by Licensee (other than Takeda Know-How licensed to Licensee), as of the Effective Date or during the Term that are necessary to Exploit Compounds or Products in the Field, including any Information disclosed by Licensee to Takeda under Section 12.2. Licensee Know-How excludes any Information or Inventions contained within a Licensee Patent.

1.63 “Licensee Patents” means all Patents Controlled by Licensee, as of the Effective Date or during the Term (other than Takeda Patents licensed to Licensee) that are necessary to Exploit Compounds or Products in the Field. There are no Licensee Patents as of the Effective Date and accordingly there are no Licensee Patents listed in Exhibit B as of the Effective Date. Licensee shall update Exhibit B with any Licensee Patents [\*\*\*] and provide a copy thereof to Takeda.

\*\*\* **Certain Confidential Information Omitted**

1.64 “Losses” shall have the meaning set forth in Section 15.1.

1.65 “MAA” means an application for Regulatory Approval filed with the EMA.

1.66 “Marketing Authorization Holder” or “MAH” means the Person that owns the applicable Regulatory Approval.

1.67 “Manufacture” or “Manufacturing” means all activities related to the manufacturing of the Compound or the Product, or any ingredient thereof, including manufacturing for Development and Commercialization, labeling, packaging, in-process and finished Product testing, release of the Compound or the Product or any ingredient thereof, quality assurance activities related to manufacturing and release of the Compound or the Product, ongoing stability tests and regulatory activities related to any of the foregoing.

1.68 “NDA” means a New Drug Application or supplemental New Drug Application as contemplated by Section 505(b) of the FDCA, as amended, and the regulations promulgated thereunder, submitted to the FDA pursuant to Part 314 of Title 21 of the U.S. C.F.R., including any amendments thereto. References herein to NDA shall include, to the extent applicable, any comparable applications filed in or for jurisdictions outside the United States, such as an MAA with the EMA.

1.69 “Net Sales” means, with respect to any Product, the gross amounts invoiced and/or received (whichever is the first to occur) by Licensee, its Affiliates and sublicensees for sales of such Product to Third Parties, less the following deductions, to the extent such deductions are paid, incurred or otherwise taken, reasonable and customary, provided to Third Parties, and actually allowed with respect to such sales:

- (a) [\*\*\*];
- (b) [\*\*\*];
- (c) [\*\*\*];
- (d) [\*\*\*]; and
- (e) [\*\*\*].

[\*\*\*]

The Net Sales of any Product sold as a component of a combination or bundled product that consists of a Product (or the Compound) together with one or more other therapeutically active products or compounds (a “Combination Product”) shall be calculated as follows:

- (x) [\*\*\*];
- (y) [\*\*\*]; and
- (z) [\*\*\*]

\*\*\* **Certain Confidential Information Omitted**

For the sake of clarity, Licensee shall not be permitted to Develop, Manufacture or Commercialize any Combination Product unless such Combination Product is a Permitted Product Formulation.

1.70 “Non-Breaching Party” has the meaning set forth in Section 13.2(a).

1.71 “Over-The-Counter Competing Product” means any Competing Product that may be sold in the applicable country in the Territory without a doctor’s prescription.

1.72 “Patents” means all: (a) patents, including any utility or design patent; (b) patent applications, including provisionals, substitutions, divisionals, continuations, continuations in-part or renewals; (c) patents of addition, restorations, extensions, supplementary protection certificates, registration or confirmation patents, patents resulting from post-grant proceedings, re-issues and re-examinations; (d) other patents or patent applications claiming priority directly or indirectly to: (i) any such specified patent or patent application specified in (a) through (c), or (ii) any patent or patent application from which a patent or patent application specified in (a) through (c) claim direct or indirect priority; (e) inventor’s certificates; (f) other rights issued from a Governmental Authority similar to any of the foregoing specified in (a) through (e); and (g) in each of (a) through (f), whether such patent, patent application or other right arises in the U.S. or any other jurisdiction in the Territory.

1.73 “Permitted Product Formulations” means the Product formulations set forth in Exhibit C.

1.74 “Permitted Trials and Studies” means the Clinical Trials and other Product related studies included in the Initial Development Plan, and any Additional Required Clinical Trials.

1.75 “Person” means an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, incorporated association, joint venture or similar entity or organization, including a government or political subdivision, department or agency of a government.

1.76 “Phase 1 Clinical Trials” means a Clinical Trial of a Product with the endpoint of determining initial tolerance, safety, pharmacokinetic or pharmacodynamic information in single dose, single ascending dose, multiple dose and/or multiple ascending dose regimens, as more fully described in U.S. federal regulation 21 C.F.R. § 312.21(a) and its equivalents in other jurisdictions.

1.77 “Phase 2 Clinical Trial” means a Clinical Trial of a Product on human subjects, including possibly pharmacokinetic, pharmacodynamic and dose-ranging studies, the principal purposes of which are to make a preliminary determination that such product is safe for its intended use and to obtain sufficient information about such product’s efficacy or dose-response information to permit the design of further clinical trials.

1.78 “Phase 3 Clinical Trial” means a pivotal Clinical Trial of a pharmaceutical product, with a defined dose or a set of defined doses, which trial is designed to ascertain efficacy and safety of such product, in a manner that is generally consistent with 21 CFR § 312.21(c), as amended (or its successor regulation), and its equivalents in other jurisdictions, for the purpose of enabling the preparation and submission of an NDA with the FDA or any other applicable Regulatory Authority.



- 1.79 “Product” means any pharmaceutical product, including all forms, presentations, strengths, doses and formulations (including any method of delivery), containing a Compound alone or in combination with at least one other therapeutically active ingredient.
- 1.80 “Product Complaint” means all Information come to the attention of either Party, its Affiliates or its sub-licensees, concerning any dissatisfaction regarding a Product of such a nature and magnitude that it is required under Applicable Law to be collected, maintained and reported to a Regulatory Authority, including reports of actual or suspected product tampering, contamination, mislabeling or inclusion of improper ingredients.
- 1.81 “Product IND” means any IND filed in the Territory pertaining to a Product filed during the Term, including any supplements or amendments thereto.
- 1.82 “Product Infringement” has the meaning set forth in Section 9.5(b)(i).
- 1.83 “Product NDA” means any NDA filed in the Territory which seeks Regulatory Approval for a Product in the Field, including any supplements or amendments thereto.
- 1.84 “Product Trademarks” means the Trademark(s) to be used by Licensee or its Affiliates or its sublicensees for the Exploitation of Products in the Field in the Territory and any registrations thereof or any pending applications relating thereto in the Territory (excluding, in any event, any trademarks, service marks, names or logos that include any corporate name or logo of the Parties or their Affiliates).
- 1.85 “Qualified Financing” shall have the meaning set forth in Section 2.1.
- 1.86 “Receiving Party” shall have the meaning set forth in Section 11.1.
- 1.87 “Reference Listed Drug” shall have the meaning set forth in Section 1.39.
- 1.88 “Regulatory Approval” means all approvals (including supplement, amendment, or pre-and post-approval), licenses, registrations or authorizations of any national, regional, state or local Regulatory Authority, department, bureau, commission, council or other Governmental Authority, that are necessary for the Commercialization of the Product in a country or countries (but excluding approval of any application for pricing or reimbursement for the Product by any Governmental Authority).
- 1.89 “Regulatory Authority” means any applicable Governmental Authority involved in granting Regulatory Approval, including in the U.S., the FDA and any other applicable Governmental Authority having jurisdiction over the approval of a Compound or a Product.
- 1.90 “Regulatory Exclusivity” means any exclusive marketing rights or data protection or other exclusivity rights conferred by any Regulatory Authority with respect to a Product in a country or jurisdiction in the Territory, other than a Patent right, including orphan drug exclusivity, pediatric exclusivity, rights conferred in the U.S. under the Drug Price Competition and Patent Term Restoration Act, 21 U.S.C. 355, as amended (the “Hatch-Waxman Act”).

1.91 “Regulatory Materials” means all regulatory applications, submissions, notifications, registrations, Regulatory Approvals or other submissions, including any written correspondence or meeting minutes, made to, made with, or received from a Regulatory Authority that are necessary or reasonably desirable in order to Develop, Manufacture, market, sell or otherwise Commercialize a Product in the Field. Regulatory Materials include the Product INDs and the Product NDAs, and amendments and supplements thereto.

1.92 “Royalty Term” means, on a country-by-country and Product-by-Product basis, the period commencing on the First Commercial Sale of a Product in such country and continuing until the later of:

(a) the expiration of the last to expire Valid Claim in a Takeda Patent or Joint Patent covering the composition of matter, Manufacture or approved use of such Product in such country;

(b) the expiration of the applicable Regulatory Exclusivity in such country; or

(c) [\*\*\*] years after First Commercial Sale of such Product in such country.

1.93 “Sole Inventions” shall have the meaning set forth in Section 9.1.

1.94 “Takeda Compound Patents” means all Patents Controlled by Takeda as of the Effective Date or during the Term that claim the composition of matter of, formulation of, or a method of making or using, the Compound or Product in the Field in the Territory. The Takeda Compound Patents in the Territory as of the Effective Date are set forth in Exhibit D. Takeda shall update Exhibit D from time to time as necessary and provide a copy thereof to Licensee.

1.95 “Takeda General Patents” means all Patents Controlled by Takeda as of the Effective Date or during the Term that are not Takeda Compound Patents, but which are necessary to Exploit vonoprazan or a salt thereof, or a Product comprising a Permitted Product Formulation, in the Field in the Territory.

1.96 “Takeda Indemnitee” shall have the meaning set forth in Section 15.1.

1.97 “Takeda Intellectual Property” means, collectively, Takeda Know-How and Takeda Patents.

1.98 “Takeda Know-How” means collectively (i) any Information and Inventions Controlled by Takeda as of the Effective Date that are necessary to Exploit a Compound or Product in the Field in the Territory and (ii) any Information and Inventions which first become Controlled by Takeda after the Effective Date that are directed to a Compound or Product in the Field in the Territory, including any Information disclosed by Takeda to Licensee under Section 12.2. Takeda Know-How excludes any Information contained within a Takeda Patent. For clarity, as of the Effective Date, Takeda Know-How consists solely of Information and Inventions that are directed to vonoprazan fumarate.

1.99 “Takeda Patents” means the Takeda Compound Patents and the Takeda General Patents.

\*\*\* **Certain Confidential Information Omitted**

1.100 “Takeda Product Trademarks” means the Trademarks set forth on Exhibit E and any other Trademarks Controlled by Takeda or its Affiliates and used in connection with the Exploitation of Products in the Territory (excluding, in any event, any trademarks, service marks, names or logos that include any corporate name or logo of Takeda, its Affiliates or licensees).

1.101 “Tax” or “Taxes” shall mean any form of tax or taxation, levy, duty, charge, social security charge, contribution or withholding of whatever nature (including any related fine, penalty, surcharge or interest) imposed by, or payable to, any government, state or municipality, or any local, state, federal or other fiscal, revenue, customs, or excise authority, body or official in the Territory.

1.102 “Territory” means the United States, Canada, the countries within Europe, and any successors to, or new countries created from, any of the foregoing, and shall include any and all of such countries’ respective territories and possessions.

1.103 “Term” shall have the meaning set forth in Section 13.1.

1.104 “Third Party” means a Person other than Takeda and Licensee and their respective Affiliates.

1.105 “Third Party License” has the meaning set forth in Section 8.7(a).

1.106 “Third Party Royalties” shall have the meaning set forth in Section 8.7(a).

1.107 “Top-Line Data” means, with respect to a Clinical Trial, a summary of demographic data, the data for the primary endpoint(s), the data for any secondary endpoint(s), if such secondary endpoint(s) are applicable, and a summary of safety data, in each case which are based on an unblinded, locked database and wherein all data are collected in a 21 CFR 11 validated database with a complete audit trail.

1.108 “Trademark” means (a) any word, name, symbol, color, designation or device or any combination thereof that functions as a source identifier, including any trademark, trade dress, brand mark, service mark, trade name, brand name, logo, business symbol or domain names, whether or not registered, or any application, renewal, extension, or modification thereto; and (b) all goodwill associated therewith.

1.109 “Transition Plan” means the transition plan set forth in Exhibit F.

1.110 “Up-Front Shares” shall have the meaning set forth in Section 2.2(a).

1.111 “Valid Claim” means (a) a claim of an issued and unexpired Patent included within the Takeda Patents, the Licensee Patents or the Joint Patents, to the extent such claim has not been revoked, held invalid or unenforceable by a patent office, court or other governmental agency of competent jurisdiction in a final order, from which no further appeal can be taken, and which claim has not been disclaimed, denied or admitted to be invalid or unenforceable through reissue, re-examination or disclaimer; or (b) a claim of any patent application (where such claim was filed in good faith) within the Takeda Patents, the Licensee Patents or the Joint Patents, to the extent such

claim has not been canceled, withdrawn, or abandoned or pending for more than [\*\*\*] from its earliest priority date.

1.112 “Warrant” shall have the meaning set forth in Section 2.2(b).

## ARTICLE 2 – QUALIFIED FINANCING; WARRANT

2.1 **Qualified Financing.** The licenses granted by the Parties pursuant to Article 4 below are conditioned upon the consummation of a financing resulting in gross aggregate cash proceeds to Licensee of at least \$[\*\*\*] (the “Qualified Financing”).

### 2.2 Up-Front Equity and Warrant.

(a) **Up-Front Equity.** In partial consideration for Licensee’s rights in and to the Takeda Intellectual Property licensed hereunder and other rights granted hereunder, on or before the Effective Date, Licensee will issue and deliver to Takeda five hundred thousand (500,000) shares (the “Up-Front Shares”) of Common Stock, par value \$0.0001 (“Common Stock”), which represents [\*\*\*] percent ([\*\*%]) of the Fully-Diluted Capitalization calculated immediately prior to the closing of the Qualified Financing (and, for the avoidance of doubt, excluding any convertible promissory notes that are converted into the securities issued in the Qualified Financing). To implement the issuance of the Up-Front Shares, the Parties shall execute and deliver to one another a Stock Issuance Agreement in the form attached hereto as Exhibit G. The Up-Front Shares shall be of the same class as the initial founders’ shares of Common Stock issued to Frazier Life Sciences IX.

(b) **Warrant Coverage.** In partial consideration for Licensee’s rights in and to the Takeda Intellectual Property licensed hereunder and other rights granted hereunder, on the Effective Date, Licensee will issue to Takeda a warrant to purchase additional shares of Common Stock with an exercise price equal to the par value of \$0.0001 per share, in the form attached hereto as Exhibit H (the “Warrant”). The number of shares of Common Stock subject to the Warrant shall be equal to [\*\*\*]% of the Fully-Diluted Capitalization calculated immediately prior to the closing of the Qualified Financing (and, for the avoidance of doubt, excluding any convertible promissory notes that are converted into the securities issued in the Qualified Financing). The Warrant will be exercisable by Takeda on a cashless, net-exercise basis as more particularly set forth in the Warrant.

(c) **Additional Warrant Coverage; Minimum IPO Ownership.** In partial consideration for Licensee’s rights in and to the Takeda Intellectual Property licensed hereunder and other rights granted hereunder, in the event that the shares of Common Stock issued to Takeda pursuant to Section 2.2(a) and issued or issuable upon cashless, net exercise of the Warrant issued pursuant to Section 2.2(b) together represent less than [\*\*\*] percent [\*\*\*] of the Fully-Diluted Capitalization calculated immediately prior to the closing of the first underwritten initial public offering of the Common Stock (including, for the avoidance of doubt, any shares of Common Stock issued upon conversion of convertible promissory notes that are issued in the Qualified Financing, but excluding shares of Common Stock newly issued in such initial public offering itself) then Licensee shall issue an additional Warrant to Takeda upon the closing of such initial public offering. The number of shares of Common Stock subject to such additional Warrant shall

\*\*\* **Certain Confidential Information Omitted**

be calculated such that the additional shares issuable upon cashless, net exercise of such additional Warrant, together with the shares of Common Stock issued to Takeda pursuant to Section 2.2(a) and issued or issuable upon cashless, net exercise of the Warrant issued pursuant to Section 2.2(b), represent an aggregate of [\*\*\*] percent [\*\*\*] of the Fully-Diluted Capitalization calculated immediately prior to the closing of the first underwritten initial public offering of the Common Stock (including, for the avoidance of doubt, any shares of Common Stock issued upon conversion of convertible promissory notes that are issued in the Qualified Financing, but excluding shares of Common Stock newly issued in such initial public offering itself).

(d) **Exercise of Warrant.** The Warrants will be exercisable as set forth therein.

(e) **Ancillary Documents.** Upon receipt of the initial Warrant, Takeda shall be required to enter into any agreements related to the Common Stock that other holders of Common Stock are required to enter into in connection with the Qualified Equity Financing.

(f) **No Partnership Interest.** Licensee and Takeda hereby acknowledge they do not intend to create a partnership interest for Takeda under U.S. tax laws by reason of Licensee's issuance of the Warrant.

### ARTICLE 3 – FINANCIAL STATEMENTS

3.1 **Licensee Financial Statements.** Licensee shall provide Takeda with a copy of Licensee's annual and quarterly financial statements in accordance with its obligations under Qualified Financing documents, as in effect on the Effective Date, to its investors and on the same time frame.

### ARTICLE 4 – LICENSES

4.1 **Licenses from Takeda to Licensee.** Subject to the terms and conditions of this Agreement, Takeda on behalf of itself and its Affiliates hereby grants to Licensee (a) an exclusive (even as to Takeda and its Affiliates), nontransferable (except as provided in Section 16.4) license, with the right to grant sublicenses solely in accordance with Section 4.3, under the Takeda Intellectual Property (excluding the Takeda General Patents) and Takeda's rights to the Joint Intellectual Property, to Commercialize Products in the Field in the Territory, (b) a non-exclusive, nontransferable (except as provided in Section 16.4) license, with the right to grant sublicenses solely in accordance with Section 4.3, under the Takeda General Patents to Commercialize Products in the Field in the Territory, (c) a non-exclusive, nontransferable (except as provided in Section 16.4) license, with the right to grant sublicenses solely in accordance with Section 4.3, under the Takeda Intellectual Property, and Takeda's rights to the Joint Intellectual Property, to Develop anywhere in the world (subject to Takeda's prior written consent, not to be unreasonably withheld, conditioned or delayed, with respect to any Clinical Trials outside of the Territory) and Manufacture Compounds and Products, in each case, solely for the Commercialization of Products in the Field in the Territory, and (d) in the case where the Product contains vonoprazan fumarate as the sole active ingredient, an exclusive nontransferable (except as provided in Section 16.4) license, with the right to grant sublicenses solely in accordance with Section 4.3 to use the Takeda Product Trademarks in connection with the Commercialization of a Product in the Field in the Territory. Notwithstanding any language to the contrary in this Agreement, including the previous

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sentence, (i) except for the Permitted Product Formulations, Licensee shall not have the right to Develop, Manufacture or Commercialize any other Product formulation, (ii) except for the Permitted Trials and Studies, Licensee shall not have the right to perform any other Clinical Trials or Product related studies, and (iii) Takeda and its Affiliates and sublicensee shall have the right to use the Takeda Product Trademarks in the Territory for any purpose directly or indirectly related to Exploitation of Products outside of the Territory, including the following uses in the Territory (a) manufacturing branded primary or secondary packaging, (b) packaging products in labeled packs, (c) conducting Clinical Trials, (d) issuing press releases, (e) conferences, and (f) intercompany license agreements. Licensee shall have the right to Manufacture Compound and Product anywhere in the world solely for the Commercialization of Product in the Field in the Territory, however, Takeda shall have the right to approve any Third Party Manufacturer of the Compound active pharmaceutical ingredient, bulk drug Product or finished drug Product. Takeda's approval of any such Third Party Manufacturer shall not be unreasonably withheld, conditioned or delayed, but may be contingent on Takeda's approval, not to be unreasonably withheld, conditioned or delayed, of an appropriate quality agreement with such Third Party Manufacturer. Notwithstanding any language to the contrary, Takeda retains (x) the right to Develop and Manufacture Compound and Product anywhere in the world, including inside the Territory, (subject to Licensee's prior written consent, not to be unreasonably withheld, conditioned or delayed, with respect to any Clinical Trials in the Territory and which is hereby given with respect to the Designated Clinical Trial, (y) the exclusive right to Commercialize the Compound and Product outside of the Territory, and (z) the exclusive right to Commercialize the Compound and Product outside of the Field.

#### **4.2 Licenses and Grant-Back Sub-Licenses from Licensee to Takeda.**

(a) Subject to the terms and conditions of this Agreement, Licensee hereby grants to Takeda (i) a limited, non-exclusive, fully paid-up, royalty-free, non-transferable (except as provided in Section 16.4) license, with the right to grant sublicenses solely in accordance with Section 4.3, under the Licensee Intellectual Property and Licensee's rights to the Joint Intellectual Property which is necessary or useful to enable Takeda in the Field in the Territory, to exercise its express rights (including Developing and Manufacturing the Compound and Product anywhere in the world, including inside the Territory, but with respect to Clinical Trials inside the Territory, subject to the last sentence of Section 4.1) and perform its obligations under this Agreement, and (ii) a limited, exclusive, fully paid-up, royalty-free, non-transferable (except as provided in Section 16.4) license, with the right to grant sublicenses solely in accordance with Section 4.3, under the Licensee Intellectual Property and Licensee's rights to the Joint Intellectual Property, to (1) Commercialize Compounds and Products outside of the Territory, and (2) Commercialize Compounds and Products outside of the Field.

(b) Subject to the terms and conditions of this Agreement, Licensee hereby grants back to Takeda a limited, exclusive, fully paid-up, royalty-free, non-transferable (except as provided in Section 16.4) sublicense, with the right to further sublicense solely in accordance with Section 4.3, under the Takeda Intellectual Property and Takeda's rights to the Joint Intellectual Property solely as, and to the extent necessary or useful, to enable Takeda in the Field in the Territory, to exercise its express rights and perform its obligations under this Agreement.

#### 4.3 Sublicensing.

(a) [\*\*\*] Licensee shall have the right to grant sublicenses to Commercialize the Product in the Field in the Territory, through multiple tiers, under the rights granted to Licensee under Section 4.1, to its Affiliates and to one or more Third Parties. Licensee shall have the right to grant sublicenses to its rights to Develop and Manufacture the Compound and Product (i) to its Affiliates, with the right to sublicense in accordance with this Section 4.3(a), (ii) to any Third Party to whom Licensee, in accordance with the previous sentence, has granted a sublicense to Commercialize the Product in the Field in the Territory, and (iii) to one or more vendors, contract research organizations and the like to the extent necessary or useful to Develop and/or Commercialize the Product in accordance with Licensee's express rights under this Agreement.

(b) Takeda shall have the right to grant one or more licenses or sublicenses, as the case may be, under the rights granted to Takeda under Section 4.2, (i) to its Affiliates, with the right to sublicense in accordance with this Section 4.3(b), (ii) to any Third Party to whom Takeda or its Affiliates has granted a sublicense to Commercialize the Compound and/or Product outside of the Territory, and (iii) to one or more vendors, contract research organizations and the like, to the extent necessary or useful to Develop and/or Commercialize the Product in accordance with Takeda's express rights under this Agreement.

(c) Each sublicense shall refer to and be subordinate to this Agreement and, except to the extent the Parties otherwise agree in writing, any such sublicense must be consistent in all material respects with the terms and conditions of this Agreement. Each Party shall remain responsible for the performance of this Agreement and the performance of its sublicensees hereunder.

(d) Upon an early termination of Licensee's license rights under this Agreement (i) pursuant to Section 13.2 or (ii) pursuant to Section 13.5, Takeda shall offer any Third Party sublicensee under a Commercial sublicense granted by Licensee or its Affiliates pursuant to Section 4.3(a) that was in effect on the effective date of termination of Licensee's license rights under this Agreement the right to enter into a license agreement directly with Takeda on substantially the same terms and conditions under which such rights and licenses were granted to such sublicensee, provided that (A) such sublicensee is not then in breach of its sublicense, (B) such sublicensee agrees to comply with all the terms of this Agreement to the extent applicable to the rights sublicensed to it by Licensee or its Affiliate, and (C) such agreement does not impose any obligations upon Takeda that exceed the obligations of Takeda under this Agreement. [\*\*\*]

4.4 **No Implied Licenses.** No license or other right is or shall be created or granted hereunder by implication, estoppel, or otherwise. All licenses and rights are or shall be granted only as expressly provided in this Agreement. All rights not expressly granted by a Party under this Agreement are reserved by the Party and may not be used by the other Party for any purpose.

#### 4.5 Exports and Restrictions on Competition.

(a) **Exports.** Licensee shall neither, and shall cause its Affiliates and sublicensees to neither, whether directly or indirectly through a Third Party, (i) sell or promote a Product outside

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of the Field or outside of the Territory, (ii) nor export or distribute a Product outside of the Territory other than for Commercialization in the Field in the Territory.

(b) **Competing Product Activities.** During the Term, Licensee shall not, and shall cause its Affiliates not to, whether directly or indirectly through a Third Party (including any sublicensee) Commercialize any Competing Product in any country in the Territory except for, as applicable in any such country, any Generic Competing Products and any Over-The-Counter Competing Products. In the event Licensee assigns or transfers its rights and obligations under this Agreement to any permitted successor or assignee pursuant to Section 16.4, and at the time of such assignment or transfer to such permitted successor or assignee, such permitted successor or assignee is Commercializing one or more Competing Product(s) (other than any Generic Competing Products and any Over-The-Counter Competing Products) in any country(ies) in the Territory, then only if the applicable Competing Product is the Reference Listed Drug to one or more Generic Competing Products which Generic Competing Products have been continuously Commercialized in such applicable country in the Territory for a period of at least [\*\*\*] prior to the transfer or assignment of Licensee's rights and obligations under this Agreement to such applicable permitted successor or assignee, such permitted successor or assignee may continue to Commercialize such Competing Product in such country in the Territory without being deemed to be in breach of this Section 4.5(b). Solely with respect to use of "Commercialize" in this Section 4.5(b), the word "Product" in the definition of "Commercialization" shall be deemed to mean as applicable "Competing Product" and "Generic Competing Product".

## ARTICLE 5 – DEVELOPMENT AND SUPPLY

5.1 **Overview of Product Development.** Licensee's Development of the Compound and the Product in the Field in or for the Territory shall be conducted in a manner consistent with the principle of seeking and maintaining Regulatory Approvals in the Field in the Territory that include the appropriate Labeling for the Product in light of the clinical data. Notwithstanding any language to the contrary in this Agreement, including the previous sentence, (i) except for the Permitted Product Formulations, Licensee shall not have the right to Develop any other Product formulation, and (ii) except for the Permitted Trials and Studies, Licensee shall not have any right to perform any other Clinical Trials or Product related studies.

5.2 **Licensee Development.** Licensee (itself or through its Affiliates or sublicensees) shall be solely responsible for: (a) all of Licensee's, and its Affiliates' and their respective sublicensees' and Third Party contractors' activities related to the Development of the Compound and the Product in the Field in the Territory; and (b) all expenses, including Third Party expenses, related to such Development activities. Notwithstanding the foregoing, Takeda will be responsible for all activities and costs related to the Designated Clinical Trial.

5.3 **Development Efforts.** Licensee shall use Commercially Reasonable Efforts to Develop the Compound and the Product in order to Commercialize the Product in the Field in the Territory.

5.4 **Development Plan.** The Initial Development Plan is set forth in Exhibit A. [\*\*\*] Licensee shall update and amend, as appropriate, the then-current Development Plan and shall provide a copy of a proposed updated and amended Development Plan to Takeda. Licensee shall provide Takeda with an opportunity to review and comment on the proposed updated and amended Development Plan. Licensee shall consider in good faith any such comments of Takeda when finalizing the updated and amended Development Plan. Promptly after finalizing the updated and amended

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Development Plan, Licensee shall provide a copy thereof to Takeda. [\*\*\*] After the Licensee notifies the Information Sharing Committee of any Additional Required Clinical Trials, Licensee shall promptly update the Development Plan to include such Additional Required Clinical Trial and shall promptly provide a copy of the updated and amended Development Plan to Takeda. Licensee, itself and/or through its sublicensees, will be responsible for all Development and regulatory activities, and the associated costs of such activities, for the Product in the Field and in the Territory in accordance with the Development Plan.

5.5 **Transfer of Information and Assistance.** In accordance with the Transition Plan set forth in Exhibit F, Takeda will (i) transfer to Licensee the existing technical and clinical information for the Compound and Product identified on Exhibit F at no charge, and (ii) provide reasonable assistance from and access to Takeda employees with relevant knowledge related to the Compound and Product. Takeda shall provide Licensee, without charge, up to a total aggregate of [\*\*\*] of assistance and access described in subsection (ii) above. Once such total aggregate [\*\*\*] has been reached, Takeda shall provide Licensee up to a total aggregate of an additional [\*\*\*] of assistance and access described in subsection (ii) above, which assistance will be charged by Takeda to Licensee at an hourly rate of [\*\*\*]. Once such total aggregate [\*\*\*] has been reached, any additional reasonable requests for support made by Licensee may be provided at Takeda's sole discretion and, if provided by Takeda, will be charged by Takeda to Licensee at an hourly rate of [\*\*\*]. Notwithstanding any language to the contrary, Takeda shall not have any obligation to provide, in aggregate including the [\*\*\*] of such assistance and access. Except as expressly provided under the Transition Plan, Takeda shall not be obligated to provide a technical transfer of the current Manufacturing process for the Compound or Product to Licensee or its designated Third Party Manufacturer. Notwithstanding anything to the contrary, the time limitations and hourly charges set forth in this Section 5.5, above, shall not apply with respect to the performance of any of Takeda's obligations expressly set forth in this Agreement (other than the transfer, assistance and access described in this Section 5.5, above).

5.6 **Clinical Supply Agreement.** In accordance with the Clinical Supply Agreement attached as Exhibit J and an associated quality agreement, Takeda will supply the specific quantity of Clinical Trial materials to Licensee for use in the Clinical Trials set forth in the Initial Development Plan and for any Additional Required Clinical Trials, and Licensee will reimburse Takeda's fully loaded cost of Manufacturing for such quantity of Clinical Trial material provided under the Clinical Supply Agreement. Licensee shall be solely responsible for the Manufacture and supply of any and all additional quantities of Product needed by Licensee, including all additional Clinical Trial materials and Product for Commercialization.

5.7 **Commercial Supply Agreement.** If requested by Licensee, the Parties shall enter into good faith negotiations for a supply agreement governing the supply of Product by Takeda or one of its Affiliates to Licensee for Commercialization in the Field in the Territory following Licensee's receipt of the first Regulatory Approval in the Territory (the "Commercial Supply Agreement"). The terms of any such Commercial Supply Agreement shall be negotiated in good faith by the Parties based upon reasonable and customary terms typically associated with supply of pharmaceutical products for Commercialization in the Territory. For the sake of clarity, unless

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and until a Commercial Supply Agreement is executed by the Parties, Takeda shall not be under any obligation to supply Product to Licensee for Commercialization in the Territory.

5.8 **Records; Disclosure of Data and Results.** In conformity with standard pharmaceutical industry practices and the terms and conditions of this Agreement, Licensee shall prepare and maintain, or shall cause to be prepared and maintained, complete and accurate written records of its Development of the Products, for a minimum of [\*\*\*] Licensee shall provide to Takeda a reasonably detailed report consisting of (a) an update on the progress of Licensee's Development and Commercialization activities, including (i) key achievements or milestones to date in the reporting period, and (ii) studies that were run or are in process and (b) [\*\*\*]

## ARTICLE 6 – REGULATORY

### 6.1 Preparation of Regulatory Materials.

(a) Licensee shall have the sole right and responsibility, and shall exercise Commercially Reasonable Efforts, to prepare, obtain, and maintain, as applicable, the Regulatory Materials in the Territory, including the Product INDs and other submissions, and to conduct communications with the relevant Regulatory Authorities, related to or needed for the Commercialization of Product in the Field in the Territory. Notwithstanding the foregoing, Takeda or its applicable Affiliate, or sublicensees, any of their Third Party contractors, will be solely responsible for all Regulatory Materials related to (i) the Designated Clinical Trial, and any other Clinical Trials in the Territory consented to by Licensee pursuant to the last sentence of Section 4.1, (ii) Takeda's, or any of its Affiliates or sublicensees' or any of their Third Party contractors' Development or Manufacture activities in the Territory. Except with respect to the Designated Clinical Trial, and any other Clinical Trials in the Territory consented to by Licensee pursuant to the last sentence of Section 4.1, all Product INDs generated after the Effective Date with respect to the Product in the Field in the Territory under this Agreement shall be owned by, and shall be the sole property and held in the name of, Licensee or its designee.

(b) Licensee shall provide Takeda with an opportunity to review and comment on [\*\*\*] in each case reasonably in advance of when Licensee or any of its Affiliates or sublicensees intends to submit such Regulatory Materials to the applicable Regulatory Authority. Takeda shall provide its comments within [\*\*\*], or such other period of time mutually agreed to by the Parties. Licensee shall consider in good faith any such comments of Takeda. Licensee shall provide Takeda with a copy in electronic form of all material Regulatory Materials filed related to the use of the Products in the Field. Licensee shall be the MAH with respect to Regulatory Approvals in the Territory. Takeda, its Affiliates, and/or their sublicensees or designees shall be the MAH for any and all Regulatory Approvals outside of the Territory.

(c) Notwithstanding the above, Takeda shall file an application for United States Adopted Name (USAN) at its own expense.

6.2 **Regulatory Expenses.** Except with respect to (1) the Designated Clinical Trial, and any other Clinical Trials in the Territory consented to by Licensee pursuant to the last sentence of Section 4.1, and (2) Takeda's, and any of its Affiliates and sublicensees, and any of their Third Party contractors' Development or Manufacture activities in the Territory, Licensee shall bear all

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expenses incurred related to the preparation, maintenance, formatting and filing of the Regulatory Materials in the Field in the Territory.

**6.3 Rights of Reference to Regulatory Materials.** Each Party hereby grants to the other Party a right of reference to all Regulatory Materials filed by such Party for the Products solely for the purpose of seeking, obtaining and maintaining Regulatory Approvals for, and the Commercialization of, the Products in such other Party's respective territory.

**6.4 Labeling Information Exchange/Labeling Agreement.** If requested by either Party, the Parties shall in good faith negotiate the terms of a Labeling agreement that includes methods and/or procedures for sharing information related to Labeling and the management of Labeling information, including CCDS. If the Parties mutually agree upon such a Labeling agreement it shall be attached hereto as Exhibit K. Subject to any limitations in any such Labeling Agreement, Licensee shall be solely responsible for the review and approval of all Labeling for the Product in the Territory.

**6.5 Pharmacovigilance and Drug Safety Agreement.** Before the commencement of any Clinical Trials in or for the Territory (other than the Designated Clinical Trial), the Parties will enter into a mutually acceptable drug safety data sharing agreement setting forth the Parties' respective obligations in detail regarding pharmacovigilance and the exchange of global drug safety data and reporting and will revise it for post-marketing surveillance purposes at an appropriate time before the First Commercial Sale of the Product in the Territory.

**6.6 Additional Required Clinical Trial Communications.** Licensee shall promptly provide Takeda with any communication received by Licensee or any sublicensee from any Regulatory Authority related to any actual or potential Additional Required Clinical Trial. At least [\*\*\*] prior to Licensee or any sublicensee providing any communication to a Regulatory Authority related to any actual or potential Additional Required Clinical Trial, Licensee shall provide Takeda with a draft of such communication and shall consider, and shall require any sublicensee to consider, in good faith any comments provided by Takeda.

**6.7 Regulatory Authority Communications Received by a Party.** Each Party shall keep the other Party informed in a timely manner, compliant with the reporting requirements of Regulatory Authorities in their respective territories, of the notification of any action by, or notification or other information which it receives from any Regulatory Authority which: (a) raises any material concerns regarding the safety or efficacy of a Compound or a Product; (b) indicates or suggests a potential material liability of either Party to Third Parties in connection with a Product; (c) is reasonably likely to lead to a recall or market withdrawal of a Product; or (d) relates to expedited and periodic reports of adverse events with respect to a Product, or Product Complaints, and which may have a material impact on obtaining or maintaining Regulatory Approval or the continued Commercialization of a Product, as then conducted. Each Party shall reasonably cooperate with and assist the other Party in complying with regulatory obligations and communications, including by providing to such other Party, in a timely manner after a request, Information and documentation in such Party's possession as may be necessary or helpful for such other Party to prepare a response to an inquiry from a Regulatory Authority, and by having no more than two (2) of its employees or representatives (one clinical and one regulatory) participate in any meeting with a Regulatory Authority at such other Party's reasonable request and expense. Each Party

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shall provide the other Party in a timely manner with a copy of all correspondence received from a Regulatory Authority specifically regarding the matters referred to above.

#### 6.8 Audit.

(a) If a Regulatory Authority desires to conduct an inspection or audit of any Licensee facility or any Affiliate or Third Party facility under contract with Licensee with regard to a Product, then Licensee shall notify Takeda as soon as practicably possible after receipt of such notification of such audit or inspection and provide copies of any materials provided to it by the applicable Regulatory Authority; provided, that Licensee shall not be required to notify Takeda of audits or inspections that are of a routine nature or that do not relate to a Product, except where such audits result in communications or actions of such Regulatory Authority which have an impact upon the Product. In addition, if a Regulatory Authority conducts an unannounced inspection or audit of any Licensee facility or any Affiliate or Third Party facility under contract with Licensee with regard to a Product, then Licensee shall notify Takeda within [\*\*\*] of commencement of such audit or inspection. Licensee shall cooperate, and shall use reasonable efforts to cause the contract facility to cooperate, with such Regulatory Authority and Takeda during such inspection or audit. Following receipt of the inspection or audit observations of such Regulatory Authority, Licensee shall promptly provide Takeda with a copy of the inspection or audit report and also provide Takeda with copies of any written communications received from Regulatory Authorities with respect to such facilities in a timely manner after receipt, to the extent such written communications relate to Products or the Manufacture thereof, and shall prepare the response to any such observations. Licensee shall provide Takeda with a copy of any proposed response to such communications and shall implement Takeda's reasonable comments with respect to such proposed response. Licensee agrees to conform its activities under this Agreement to any commitments made in such a response.

(b) If a Regulatory Authority in the Territory desires to conduct a GCP inspection or audit of any Takeda facility or any Affiliate or Third Party facility under contract with Takeda, in each case with regard to any Takeda Clinical Trial Information provided to Licensee under this Agreement that Licensee has submitted to such Regulatory Authority in order to obtain Regulatory Approval of the Product, then Takeda shall notify Licensee as soon as practicably possible after receipt of such notification of such audit or inspection and provide copies of any materials provided to it by the applicable Regulatory Authority; provided, that Takeda shall not be required to notify Licensee of audits or inspections that are of a routine nature or that do not relate to Licensee's Regulatory Approval of a Product, except where such audits result in communications or actions of such Regulatory Authority which have an impact upon Licensee's Regulatory Approval for Product in the Territory. In addition, if a Regulatory Authority in the Territory conducts an unannounced GCP inspection or audit of any Takeda facility or any Affiliate or Third Party facility under contract with Takeda, in each case with regard to any Takeda Clinical Trial Information provided to Licensee under this Agreement that Licensee has submitted to such Regulatory Authority in order to obtain Regulatory Approval of a Product, then Takeda shall notify Licensee within [\*\*\*] of commencement of such audit or inspection. Takeda shall cooperate, and shall use reasonable efforts to cause the contract facility to cooperate, with such Regulatory Authority during such inspection or audit. Following receipt of the inspection or audit observations of such Regulatory Authority, Takeda shall promptly provide Licensee with a copy of the inspection or audit report and also provide Licensee with copies of any written communications received from

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Regulatory Authorities with respect to such facilities in a timely manner after receipt, to the extent such written communications relate to any Takeda Clinical Trial Information provided to Licensee under this Agreement that Licensee has submitted to such Regulatory Authority in order to obtain Regulatory Approval for a Product, and shall prepare the response to any such observations. Takeda shall provide Licensee with a copy of any proposed response to such communications and shall consider in good faith including Licensee's reasonable comments with respect to such proposed response.

## ARTICLE 7 – COMMERCIALIZATION

7.1 **Commercialization Efforts.** Licensee (itself or through its Affiliates and sublicensees) shall use Commercially Reasonable Efforts to Commercialize the Product in the Field in the Territory throughout the Term.

7.2 **Commercialization Plan and Activities.** Commencing [\*\*\*] in advance of the expected First Commercial Sale of a Product, Licensee shall submit a Commercialization Plan to the Information Sharing Committee for review and discussion. Thereafter, Licensee shall submit an updated Commercialization Plan to the Information Sharing Committee for review and discussion at least once [\*\*\*] during the Term. Each Commercialization Plan must include at least the information set forth in Exhibit N. Licensee, itself and/or through its sublicensees, will be solely responsible for all Commercialization activities in the Field in the Territory, including the marketing, strategy, pricing, promotion, physician targeting, reimbursement, branding, Manufacturing, supply, distribution and sale of the Product in the Field in the Territory in accordance with the Commercial Plan, [\*\*\*]. Licensee shall be solely responsible for the review and approval of all promotional materials used in the Territory to ensure compliance with Applicable Law, including submission, where appropriate, to the FDA.

7.3 **Commercialization Expenses.** Licensee shall bear all expenses incurred related to the Commercialization of Products in the Field in the Territory, including, but not limited to, the marketing, strategy, pricing, promotion, physician targeting, reimbursement, branding, Manufacturing, supply, distribution and sale of the Product in the Field in the Territory.

7.4 **Commercialization Reports.** Upon the First Commercial Sale of the Product, Licensee will provide Takeda on a Calendar Quarterly basis, sales forecasts in the form attached hereto as Exhibit L for the [\*\*\*] progress reports on Commercialization activities for the Product in the Territory.

## ARTICLE 8 – PAYMENT

8.1 **Upfront Cash Payment.** Upon the Effective Date, and in partial consideration for Licensee's rights in and to the Takeda Intellectual Property licensed hereunder and other rights granted hereunder, Licensee shall pay to Takeda, or Takeda's designated Affiliate, a one-time upfront fee of Twenty-Five Million United States Dollars (USD \$25,000,000). Such upfront payment shall be non-refundable and non-creditable against any other payments made by Licensee hereunder.

8.2 **Commercial Milestones.** In partial consideration for Licensee's rights in and to the Takeda Intellectual Property licensed hereunder and other rights granted hereunder, Licensee shall

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owe to Takeda one-time milestone payments upon the first achievement of each of the events set forth in this Section 8.2 below. Licensee shall promptly notify Takeda in writing following the achievement of each milestone event described below. Thereafter, Takeda shall submit to Licensee an invoice for the corresponding milestone payment set forth below. Within [\*\*\*] of Licensee's receipt of any such invoice, Licensee shall remit the applicable milestone payment to Takeda. Each milestone payment by Licensee pursuant to this Section 8.2 shall be payable only once, regardless of the number of times that such milestone event is achieved for the Products. All amounts listed in are in U.S. Dollars. For clarity, the total amount payable to Takeda under this Section 8.2 if all sales milestone events are achieved is \$[\*\*\*].

Nets Sales Milestones	Payment Amount
First time that total Net Sales of the Products in a Calendar Year exceed \$[***]	\$ [***]
First time that total Net Sales of the Products in a Calendar Year exceed \$[***]	\$ [***]
First time that total Net Sales of the Products in a Calendar Year exceed \$[***]	\$ [***]
First time that total Net Sales of the Products in a Calendar Year exceed \$[***]	\$ [***]

In the event two (2) or more Net Sales Milestone events are achieved in the same Calendar Year, Licensee shall pay to Takeda each milestone payment corresponding to the respective milestone event. For the avoidance of doubt, the aggregate Net Sales of all Products in the Field in the Territory in the applicable Calendar Year period shall be used in determining whether the Net Sales milestones have been achieved.

### 8.3 Royalty.

(a) Subject to Sections 8.5-8.8 below, and during the applicable Royalty Term, in partial consideration for Licensee's rights in and to the Takeda Intellectual Property licensed hereunder and other rights granted hereunder, Licensee shall pay to Takeda a running royalty at the following incremental royalty rates, on aggregate Net Sales of the Product in the Territory during each Calendar Year as further consideration for the rights granted hereunder.

Net Sales in the Territory	Royalty Rate
For that portion of Calendar Year aggregate Net Sales up to and including \$[***]	[***]%
For that portion of Calendar Year aggregate Net Sales greater than \$[***]	[***]%

8.4 **Royalty Term.** Royalties under Section 8.3 shall be payable on Net Sales on a Product-by-Product and country-by-country basis beginning upon the First Commercial Sale of each

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Product in a country in the Territory until the expiration of the Royalty Term in such country (at which time sales in such country shall be excluded from all calculations of aggregate Net Sales hereunder).

**8.5 Royalty Reduction for Generic Competition.** Subject to the limitation set forth in Section 8.8, the royalty rates set forth in Section 8.3 for Net Sales in such country (after any previous reduction(s), if any, made pursuant to Section 8.6) shall be reduced, on a country-by-country basis by [\*\*\*] percent ([\*\*\*]%) at the end of the first to occur Calendar Quarter during which the Generic Competition Percentage in such country of the Territory during such time period is greater than or equal to [\*\*\*] percent ([\*\*\*]%).

**8.6 Royalty Reduction for Patent Expiry.** Subject to the limitation set forth in Section 8.8, during the Royalty Term with respect to any Product being Commercialized in the United States, following expiration of the last to expire Valid Claim in a Takeda Patent published in the FDA's Orange Book, the royalty rates for such Product set forth in Section 8.3 for Net Sales (after any previous reduction(s), if any, made pursuant to this Section 8.5) shall be reduced by [\*\*\*] percent ([\*\*\*]%) of such royalty rates until the end of the Royalty Term.

**8.7 Payment for Third Party Licenses.**

(a) During the Term, Licensee will have the right, following reasonable consultation with Takeda, to negotiate and obtain a license under one or more Patents (other than any license granted in settlement of any litigation as contemplated under Section 9.6) from one or more Third Parties (each such Third Party license is referred to herein as a "Third Party License") if in the absence of a license under such Third Party Patents, the Exploitation of the applicable Compound or Product in the Field in the Territory in a manner consistent with Licensee's obligation to use Commercially Reasonable Efforts to Develop and Commercialize the Compound and the Product under this Agreement would, in Licensee's good faith assessment, upon advice of legal counsel, infringe such Third Party Patents. Except as set forth in Section 8.7(c) or to the extent of any Claim for which Takeda provides indemnification under Section 15.2, or as the Parties may otherwise agree in writing, Licensee shall bear any payments associated with any royalties owed to any Third Party for such a Third Party License (collectively, the "Third Party Royalties").

(b) In the event that Takeda disputes Licensee's determination that any Third Party Royalties are properly subject to the royalty offset provided under this Section 8.7 or Licensee's allocation of any such Third Party Royalties to a Product, Takeda may by written notice to Licensee require that such dispute be resolved in accordance with Article 14; provided that Licensee shall have the right to take royalty reductions pursuant to this Section 8.7 pending resolution of any such dispute; provided further, that if any such dispute is resolved in favor of Takeda, then within [\*\*\*] of such resolution, Licensee shall pay to Takeda any adjustment in royalties due pursuant to this Section 8.7 as required by such resolution.

(c) Subject to the limitation set forth in Section 8.8, Licensee may credit up to [\*\*\*] percent ([\*\*\*]%) of the amount of any Third Party Royalties paid by Licensee under a Third Party License pursuant to Section 8.7(a), or paid under any license granted in settlement of any claim of infringement of any Third Party claim of infringement under Section 9.6, against royalties payable to Takeda under Section 8.3. Licensee may take such credit during the Calendar Quarter for which

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royalties are payable hereunder; provided, that in no event will such credit reduce the royalties payable to Takeda for such Calendar Quarter by more than [\*\*\*] percent ([\*\*\*]%).

(d) This Section 8.7 shall not apply to any Third Party Royalties payable by Licensee or any of its Affiliates or sublicensees under any license or other agreement or understanding, written or oral, between Licensee or any of its Affiliates or sublicensees, on the one hand, and any Third Party, on the other hand, in existence as of the Effective Date.

**8.8 Limitation on Royalty Reductions.** Notwithstanding anything contained in this Agreement to the contrary, the reductions and offsets to royalties provided in Sections 8.5, 8.6, and 8.7 may not, individually or in the aggregate, reduce the royalties payable with respect to Net Sales of any Product sold by Licensee, its Affiliates and its and their sublicensees in any country during a Calendar Quarter during the Royalty Term by more than [\*\*\*] from the original royalty percentage amount owed to Takeda pursuant to Section 8.3 (i.e.; the [\*\*\*] royalties could at most be reduced respectively to be [\*\*\*] royalties on Net Sales).

**8.9 Manner of Payment.** No later than [\*\*\*], Licensee shall provide Takeda with a written report containing Licensee's reasonable good faith estimate of the following information for the [\*\*\*] in order to allow Takeda to comply with internal accounting procedures: the amount of gross sales (U.S. dollars) of the Products in the Territory, an itemized calculation of Net Sales in the Territory showing deductions, to the extent practicable, provided for in the definition of "Net Sales," a calculation of the royalty payment due on such sales, an accounting of the number of units and prices for the Products sold, the application of the reductions, if any, made in accordance with this Article 8, and any information required by Takeda for the purpose of calculating royalties. Within [\*\*\*], Licensee shall provide Takeda with a report containing the actual (not estimated) information described above in respect of such [\*\*\*] for Takeda's review and confirmation within [\*\*\*] from receipt. In the event that either party determines that the calculation of Net Sales for a [\*\*\*] deviates from the amounts previously reported to Takeda for any reason (such as, on account of additional amounts collected or Product returns), Licensee and Takeda shall reasonably cooperate to reconcile any such deviations to the extent necessary under applicable legal or financial reporting requirements. Within the later of (a) [\*\*\*], or (b) [\*\*\*] following Takeda's written confirmation of the applicable [\*\*\*] report, Licensee shall pay all amounts due to Takeda pursuant to this Article 8 with respect to Net Sales for such Calendar Quarter.

**8.10 Exchange Rate.** The rate of exchange to be used in computing the amount of currency equivalent in U.S. Dollars owed to a Party under this Agreement shall be the monthly average exchange rate between each currency of origin and U.S. Dollars as reported by *The Wall Street Journal* East Coast Edition. The monthly average exchange rate shall be the average of (i) the exchange rate published on the last day of the month; and (ii) the exchange rate published on the last day of the preceding month.

**8.11 Taxes.**

(a) **Payment of Tax.** A Party receiving a payment pursuant to this Article 8 shall pay any and all Taxes levied on such payment. A Party making a payment pursuant to this Article 8 shall make a reasonable effort to obtain the lowest Tax rate under Applicable Law for Taxes required to be deducted and withheld. If Applicable Law require that Taxes be deducted and

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withheld from a payment made pursuant to this Article 8, after a Party making a payment makes a reasonable effort to obtain the lowest Tax rate, the remitting Party shall: (i) deduct those Taxes from the payment; (ii) pay the Taxes to the proper taxing authority; and (iii) send evidence of the obligation together with proof of payment to the other Party within [\*\*\*] following that payment.

(b) **Tax Residence Certificate.** A Party receiving a payment pursuant to this Article 8 shall provide the remitting Party appropriate certification from relevant revenue authorities that such Party is a tax resident of a jurisdiction, if such receiving Party wishes to claim the benefits of an income tax treaty to which that jurisdiction is a party. Upon the receipt thereof, any deduction and withholding of Taxes shall be made at the appropriate treaty tax rate.

(c) **Assessment.** Either Party may, at its own expense, protest any assessment, proposed assessment, or other claim by any Governmental Authority for any additional amount of taxes, interest or penalties or seek a refund of such amounts paid if permitted to do so by Applicable Law. The Parties shall cooperate with each other in any protest by providing records and such additional information as may reasonably be necessary for a Party to pursue such protest.

(d) **Assignment.** If Licensee assigns its rights and obligations hereunder to an Affiliate or Third Party in compliance with Section 16.4 and if such Affiliate or Third Party shall be required by Applicable Law to withhold any additional Taxes from or in respect of any amount payable under this Agreement as a result of such assignment, then any such amount payable under this Agreement shall be increased to take into account the additional Taxes withheld as may be necessary so that, after making all required withholdings, Takeda receives an amount equal to the sum it would have received as of the Effective Date. For the avoidance of doubt, if Takeda assigns its right and obligations under this Agreement in compliance with Section 16.4, Takeda shall not be entitled to any additional payments with respect to Taxes arising as a result of Takeda's assignment.

8.12 **Audit.** Licensee shall maintain complete and accurate records in sufficient detail to permit Takeda to confirm the accuracy of the calculation of royalty and other payments under this Agreement. Upon reasonable prior notice, such records shall be available during regular business hours for a period of [\*\*\*] from the end of the Calendar Year to which they pertain for examination at Takeda's expense, and not more often than [\*\*\*], by an independent certified public accountant selected by Takeda and reasonably acceptable to Licensee, for the sole purpose of verifying the accuracy of the financial reports furnished by Licensee pursuant to this Agreement. Any such auditor shall not disclose Licensee's Confidential Information, except to the extent such disclosure is necessary to verify the accuracy of the financial reports furnished by Licensee or the amount of payments due to Takeda under this Agreement during the prior [\*\*\*]. Any amounts shown to be owed to Takeda but unpaid shall be paid within [\*\*\*] from the accountant's report, plus interest (as set forth in Section 8.13) from the original due date. Any amounts shown to have been overpaid shall be refunded within [\*\*\*] from the accountant's report. Takeda shall bear the full expense of such audit unless such audit discloses an underpayment by Licensee of more than [\*\*\*] percent ([\*\*\*]%) of the amount due, in which case Licensee shall bear the full expense of such audit.

8.13 **Manner of Payment, Late Payment.** All payments due to Takeda hereunder shall be made in U.S. Dollars by wire transfer of immediately available funds into an account designated by Takeda. If Takeda does not receive payment of any sum due to it on or before the due date,

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simple interest shall thereafter accrue on the sum due to until the date of payment at the per annum rate of [\*\*\*] percent ([\*\*\*]%) over the then-current prime rate quoted by Citibank in New York City or the maximum rate allowable by Applicable Law, whichever is lower.

## ARTICLE 9 – INTELLECTUAL PROPERTY MATTERS

9.1 **Ownership of Inventions.** Inventorship shall be determined in accordance with U.S. patent laws. Each Party shall own any inventions made solely by its own employees, agents, or independent contractors in the course of conducting any activities under this Agreement, together with all intellectual property rights therein (the “Sole Inventions”). The Parties shall jointly own any inventions that are made jointly by employees, agents, or independent contractors of each Party in the course of performing activities under this Agreement, together with all intellectual property rights therein (the “Joint Inventions”).

### 9.2 Disclosure of Inventions.

(a) Each Party shall promptly disclose to the other Party any Inventions that such Party believes are patentable Joint Inventions.

(b) Takeda shall inform Licensee of any Sole Inventions discovered or generated by its employees, agents or independent contractors, and all Information relating to such inventions to the extent necessary for the use of such Invention in the Exploitation of a Product in the Field in the Territory and, to the extent patentable, for the preparation, filing and maintenance of any Patent with respect to such invention in accordance with Section 9.3.

(c) Licensee shall inform Takeda of any Sole Inventions discovered or generated by its employees, agents or independent contractors, and all Information relating to such Inventions to the extent necessary for the use of such Invention in the Exploitation of a Product in the Field and, to the extent patentable, for the preparation, filing and maintenance of any Patent with respect to such invention in accordance with Section 9.3.

### 9.3 Prosecution of Patents.

(a) **Takeda Patents.** Takeda shall have the sole right and authority to prepare, file, prosecute and maintain the Takeda Patents at its own expense on a worldwide basis. Takeda shall provide Licensee a reasonable opportunity to review and comment on material communications from any patent authority in the Territory regarding any Takeda Compound Patents and drafts of any material filings or responses to be made to such patent authorities in advance of submitting such filings or responses. Takeda shall consider Licensee’s comments regarding such communications and drafts in good faith. In the event that Takeda elects not to continue the prosecution or maintenance of a Takeda Compound Patent in any country in the Territory, then Takeda shall provide Licensee with written notice of such determination within a period of time reasonably necessary to allow Licensee to determine its interest in such Takeda Compound Patent(s) (which notice from Takeda shall be given no later than [\*\*\*] prior to any final deadline for any pending action or response that may be due with respect to such Takeda Compound Patent(s) with the applicable patent authority). In the event Licensee provides written notice expressing its interest in assuming responsibility for all costs and responsibility associated with the prosecution and maintenance of such Takeda Compound Patent in such country, Takeda will

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provide any assistance reasonably requested by Licensee associated with the prosecution and maintenance of such Takeda Compound Patent.

(b) **Licensee Patents.** Except as otherwise provided in this Section 9.3(b), Licensee shall have the sole right and authority to prepare, file, prosecute and maintain the Licensee Patents on a worldwide basis at its own expense. Licensee shall provide Takeda a reasonable opportunity to review and comment on material communications from any patent authority regarding the Licensee Patents and drafts of any material filings or responses to be made to such patent authorities in advance of submitting such filings or responses. Licensee shall consider Takeda's comments regarding such communications and drafts in good faith. In the event that Licensee elects not to continue the prosecution or maintenance of a Licensee Patent in any country, then Licensee shall provide Takeda with written notice of such determination within a period of time reasonably necessary to allow Takeda to determine its interest in such Licensee Patent(s) (which notice from Licensee shall be given no later than [\*\*\*] prior to any final deadline for any pending action or response that may be due with respect to such Licensee Patent(s) with the applicable patent authority). In the event Takeda provides written notice expressing its interest in assuming responsibility for all costs and responsibility associated with the prosecution and maintenance of such Licensee Patent in such country, Licensee will provide any assistance reasonably requested by Licensee associated with the prosecution and maintenance of such Licensee Patent. In such circumstances, Licensee shall and hereby does grant to Takeda an exclusive license to all of its right, title and interest in the relevant Licensee Patent.

(c) **Joint Patents.** Except as otherwise provided in this Section 9.3(c), Takeda shall have the primary right and responsibility to prepare, file, prosecute and maintain Joint Patents on a worldwide basis at its own expense. The Parties shall confer and mutually agree to a filing strategy, including the jurisdictions in which to file a patent application, and Takeda shall provide Licensee a reasonable opportunity to review and comment on material communications from any patent authority regarding the Joint Patents and drafts of any material filings or responses to be made to such patent authorities in advance of submitting such filings or responses. Takeda shall consider Licensee's comments regarding such communications and drafts in good faith. In the event that Takeda elects not to continue the prosecution or maintenance of a Joint Patent in any country, then Takeda shall provide Licensee with written notice of such determination within a period of time reasonably necessary to allow Licensee to determine its interest in such Joint Patent(s) (which notice from Takeda shall be given no later than [\*\*\*] prior to any final deadline for any pending action or response that may be due with respect to such Joint Patent(s) with the applicable patent authority). In the event Licensee provides written notice expressing its interest assuming responsibility for all costs and responsibility associated with the prosecution and maintenance of such Joint Patent in such country, Takeda will provide any assistance reasonably requested by Licensee associated with the prosecution and maintenance of such Licensee Patent. In such circumstances, Takeda shall and hereby does grant to Licensee an exclusive license to all of its right, title and interest in the relevant Joint Patent.

(d) **Cooperation in Prosecution.** Each Party shall provide the other Party reasonable assistance and cooperation in the Patent prosecution efforts provided above in this Section 9.3, including providing any necessary powers of attorney and executing any other required documents or instruments for such prosecution, as well as further actions as set forth below.

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(i) The Parties shall respectively prepare, file, maintain and prosecute the Takeda Compound Patents, Licensee Patents and Joint Patents as set forth in this Section 9.3. As used herein, "prosecution" of such Patents shall include all communication and other interaction with any patent office or patent authority having jurisdiction over a patent application in connection with pre-grant proceedings.

(ii) All communications between the Parties relating to the preparation, filing, prosecution or maintenance of the Takeda Compound Patents the Licensee Patents and the Joint Patents, including copies of any draft or final documents or any communications received from or sent to patent offices or patenting authorities with respect to such Patents, shall be considered Confidential Information and subject to the confidentiality provisions of Article 11.

(iii) Assignments to Licensee Patents and Joint Patents shall be effected as follows: (1) employees or agents of Licensee that are named as inventors on Licensee Patents shall assign their interest in such Patents to Licensee; and (2) employees or agents of Takeda or Licensee that are named as inventors on Joint Patents shall assign their interest in such Patents to their respective employer.

(iv) As between the Parties, Licensee shall have the sole right to make decisions regarding, and Licensee, at its sole cost and expense, shall have the right to apply for, patent term extensions, in the Territory with respect to extensions pursuant to 35 U.S.C. §156 et. seq. and in other jurisdictions pursuant to supplementary protection certificates, and in all jurisdictions with respect to any other extensions that are now or become available in the future, wherever applicable, for the Takeda Compound Patents, Licensee Patents or Joint Patents that cover the Product. Takeda shall cooperate with Licensee to provide necessary information and assistance, as Licensee may reasonably request, in obtaining patent term extension or supplemental protection certificates in any country in the Territory where applicable to a Takeda Compound Patent, Licensee Patent and Joint Patent.

**9.4 Orange Book Listing.** Subject to Section 9.3, Licensee shall be solely responsible for listing and maintaining all appropriate Takeda Compound Patents, Licensee Patents and Joint Patents in the Orange Book in the US or the Patent List in Canada, including payment of all expenses related to such listing and maintenance incurred after the Effective Date. Upon request of Licensee, Takeda shall cooperate with Licensee to file appropriate information with the FDA for listing any Takeda Compound Patents and any Joint Patents in the Orange Book or the Patent List in Canada.

#### **9.5 Infringement of Patents by Third Parties.**

(a) **Notification.** Each Party shall promptly notify the other Party in writing of any existing, alleged or threatened infringement of the Takeda Compound Patents, Joint Patents or Licensee Patents in the Field in the Territory of which it becomes aware, and shall provide all Information in such Party's possession or control demonstrating such infringement. In addition, Licensee shall promptly notify Takeda in writing of any existing, alleged or threatened infringement of the Takeda General Patents in the Field in the Territory of which it becomes aware, and shall provide Takeda all Information in Licensee's possession or control demonstrating such infringement

**(b) Infringement Action.**

(i) Licensee shall have the first right, but not the obligation, to bring an appropriate suit or other action against any Third Party engaged in any existing, alleged or threatened infringement of any Takeda Compound Patent or Joint Patent related to the making, using, importing, offering for sale or selling a Product in the Field in the Territory (a "Product Infringement"), subject to Section 9.5(b)(ii) through 9.5(b)(iv), below.

(ii) Licensee shall notify Takeda of its election to take any action in accordance with Section 9.5(b)(i) within [\*\*\*] before any time limit set forth in an Applicable Law or regulation, including the time limits set forth under the Hatch-Waxman Act (21 U.S.C. § 355). In the event Licensee does not so elect, Licensee shall so notify Takeda in writing, and Takeda shall have the right, but not the obligation, to commence a suit or take action to enforce the applicable Takeda Compound Patent or Joint Patent against such Third Party in the Territory at its own expense. If one Party elects to bring suit or take action against the Product Infringement, then the other Party shall have the right, prior to commencement of the trial, suit or action, to join any such suit or action.

(iii) Each Party shall provide to the Party enforcing any such rights under this Section 9.5(b) reasonable assistance in such enforcement, at such enforcing Party's request and expense, including joining such action as a party plaintiff if required by Applicable Law to pursue such action. The enforcing Party shall keep the other Party regularly informed of the status and progress of such enforcement efforts, shall reasonably consider the other Party's comments on any such efforts, including determination of litigation strategy, filing of important papers to the competent court, which consent shall not be unreasonably withheld, conditioned or delayed.

(iv) Subject to this Section 9.5(b)(iv), the enforcing Party shall be [\*\*\*]

**(c) Settlement. [\*\*\*]**

(d) **Allocation of Proceeds.** If either Party recovers monetary damages from any Third Party in a suit or action brought under Sections 9.5(b), or 9.5(c), or any royalties from a license agreement with a Third Party related to any alleged Product Infringement, whether such damages or royalties result from the infringement of Takeda Compound Patents or Joint Patents, such recovery shall be allocated first to the reimbursement of any expenses incurred by the Parties in such litigation, action or license, and any remaining amounts shall be split as follows: [\*\*\*].

**9.6 Infringement of Third Party Rights in the Territory.**

(a) **Notice.** If any Product used or sold by Licensee, its Affiliates, or sublicensees becomes the subject of a Third Party's claim or assertion of infringement of a Patent granted in the Territory, the Party first having notice of the claim or assertion shall promptly notify the other Party, the Parties shall agree on and enter into an "identity of interest agreement" wherein such Parties agree to their shared, mutual interest in the outcome of such potential dispute, and thereafter, the Parties shall promptly meet to consider the claim or assertion and the appropriate course of action.

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(b) **Defense.** Licensee shall have the first right, but not the obligation, to defend any such Third Party claim or assertion of infringement of a Patent as described in Section 9.6(a) above, at Licensee's expense. If Licensee does not commence actions to defend such claim within [\*\*\*] after it receives notice thereof (or within [\*\*\*] after it should have given notice thereof to Takeda as required by Section 9.6(a)), then to the extent allowed by the Applicable Laws, Takeda shall have the right, but not the obligation, to control the defense of such claim by legal counsel of its choice, at Takeda's expense. The non-defending Party shall reasonably cooperate with the Party conducting the defense of the claim or assertion, including if required to conduct such defense, furnishing a power of attorney. If the defending Party recovers monetary damages from any such Third Party asserting such a claim of infringement as a result of counter claims brought by such defending Party based on any Takeda Compound Patent or Joint Patent, or any royalties from a license agreement with such Third Party, such recovery shall be allocated first to the reimbursement of any expenses incurred by the defending Party in such litigation, action or license, and any remaining amounts shall be split as follows: [\*\*\*].

(c) **Settlement; Licenses.** Neither Party shall enter into any settlement of any claim described in this Section 9.6 that affects the other Party's rights or interests without such other Party's written consent, which consent shall not be unreasonably withheld, conditioned or delayed. Each Party shall have the right to decline to defend or to tender defense of any such claim to the other Party upon reasonable notice, including if the other Party fails to agree to a settlement that such Party proposes.

#### 9.7 Patent Oppositions and Other Proceedings.

(a) **Third-Party Patent Rights.** If either Party desires to bring an opposition, action for declaratory judgment, nullity action, interference, declaration for non-infringement, reexamination or other attack upon the validity, title or enforceability of a Patent owned or controlled by a Third Party and having one or more claims that covers the Product, or the use, sale, offer for sale or importation of the Product (except insofar as such action is a counterclaim to or defense of, or accompanies a defense of, a Third Party's claim or assertion of infringement under Section 9.6, in which case the provisions of Section 9.6 shall govern), such Party shall so notify the other Party and the Parties shall promptly confer to determine whether to bring such action or the manner in which to settle such action. Licensee shall have the exclusive right, but not the obligation, to bring at its own expense and in its sole control such action in the Territory. If Licensee does not bring such an action in the Territory, within [\*\*\*] of notification thereof pursuant to this Section 9.7(a) (or earlier, if required by the nature of the proceeding), then Takeda shall have the right, but not the obligation, to bring, at Takeda's sole expense, such action. The Party not bringing an action under this Section 9.7(a) shall be entitled to separate representation in such proceeding by legal counsel of its own choice and at its own expense, and shall cooperate fully with the Party bringing such action.

(b) **Parties' Patent Rights.** If any Takeda Compound Patent, Joint Patent or Licensee Patent becomes the subject of any proceeding commenced by a Third Party within the Territory in connection with an opposition, reexamination request, action for declaratory judgment, nullity action, interference or other attack upon the validity, title or enforceability thereof (except insofar as such action is a counterclaim to or defense of, or accompanies a defense of, an action for infringement against a Third Party under Section 9.5, in which case the provisions of Section 9.5

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shall govern), then the Party responsible for filing, preparing, prosecuting and maintaining such Patent as set forth in Section 9.3, shall control such defense at its own expense. The controlling Party shall permit the non-controlling Party to participate in the proceeding to the extent permissible under Applicable Law, and to be represented by its own legal counsel in such proceeding, at the non-controlling Party's expense. If either Party decides that it does not wish to defend against such action, then the other Party shall have a backup right to assume defense of such Third-Party action at its own expense. Any awards or amounts received in defending any such Third-Party action shall be allocated between the Parties as provided in Section 9.5(d).

#### 9.8 Product Trademarks.

(a) **Generally.** Licensee shall have the sole right to determine the Trademarks to be used with respect to the Exploitation of a Product in the Field in the Territory.

(b) **Licensee Product Trademarks.** If Licensee, in its sole discretion, elects to use a Licensee Product Trademark with respect to the Exploitation of a Product in the Field in the Territory, Licensee shall own all right, title, and interest to such Licensee Product Trademark, and shall be responsible, at its sole cost and expense, for the registration, prosecution, maintenance and enforcement thereof.

(c) **Takeda Product Trademarks.**

(i) In the case where the Product contains vonoprazan fumarate as the sole active ingredient, Licensee may, in its sole discretion, elect to use a Takeda Product Trademark with respect to the Exploitation of such Product in the Field in the Territory, it may do so under the license grant set forth in Section 4.1. Takeda shall be responsible, at its sole cost and expense, for the registration, prosecution and maintenance of all Takeda Product Trademarks.

(ii) Licensee recognizes Takeda's rights in, under and to the Takeda Product Trademark and shall not at any time impair Takeda's rights to the Takeda Product Trademarks. In particular, Licensee shall not file, register or use any Trademark that is identical or similar to the Takeda Product Trademark.

(iii) Licensee shall not make any representation indicating that it has any right, title or interest in or to the ownership or use of the Takeda Product Trademark except under the terms of this Agreement, and Licensee acknowledges that nothing in this Agreement shall give Licensee any right, title or interest in or to any Takeda Product Trademark except under the terms of this Agreement.

(iv) Each Party shall provide to the other Party prompt written notice of any actual or threatened infringement of any Takeda Product Trademarks in the Territory and of any actual or threatened claim that the use of a Takeda Product Trademarks violates the rights of any Third Party in the Territory. [\*\*\*]

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## ARTICLE 10 – REPRESENTATIONS AND WARRANTIES

10.1 **Mutual Representations, Warranties and Covenants.** Each of the Parties hereby represents and warrants to the other Party as of the Effective Date and covenants that:

(a) **Organization.** It is a corporation duly organized, validly existing, and in good standing under the laws of the jurisdiction of its organization, and has all requisite power and authority, corporate or otherwise, to execute, deliver, and perform this Agreement.

(b) **Binding Agreement.** This Agreement is a legal and valid obligation binding upon such Party and enforceable in accordance with its terms, subject to the effects of bankruptcy, insolvency, or other laws of general application affecting the enforcement of creditor rights, judicial principles affecting the availability of specific performance, and general principles of equity (whether enforceability is considered a proceeding at law or equity).

(c) **Authorization.** The execution, delivery, and performance of this Agreement by such Party have been duly authorized by all necessary corporate action and do not conflict with any agreement, instrument, or understanding, oral or written, to which it is a party or by which it is bound, nor violate any Applicable Law or any order, writ, judgment, injunction, decree, determination, or award of any court or governmental body, or administrative or other agency presently in effect applicable to such Party.

(d) **No Further Approval.** It is not aware of any government authorization, consent, approval, license, exemption of or filing or registration with any court or governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, under any Applicable Law, currently in effect, necessary for, or in connection with, the transactions contemplated by this Agreement or any other agreement or instrument executed in connection herewith, or for the performance by it of its obligations under this Agreement and such other agreements (save for Regulatory Approvals and similar authorizations from Regulatory Authorities necessary for the Exploitation of the Compound and the Product as contemplated hereunder).

(e) **No Inconsistent Obligations.** Neither Party is under any obligation, contractual or otherwise, to any Person that conflicts with or is inconsistent in any material respect with the terms of this Agreement, or that would impede the diligent and complete fulfillment of its obligations hereunder.

(f) **Transparency Reporting.** Each Party shall be responsible for tracking and reporting transfers of value initiated and controlled by its and its Affiliates' employees, contractors, and agents pursuant to the requirements of the marketing reporting laws of any Government Authority in the Territory, including Section 6002 of the Patient Protection and Affordable Care Act, commonly referred to as the "Sunshine Act."

10.2 **Additional Representations, Warranties and Covenants of Takeda.** Takeda represents and warrants as of the Effective Date and covenants to Licensee that:

(a) As of the Effective Date, Takeda has all rights necessary to grant the licenses under the Takeda Compound Patents Listed on Exhibit D as of the Effective Date and the Takeda Know-



How Controlled by Takeda as of the Effective Date, and rights of cross-reference under Regulatory Materials existing as of the Effective Date that it grants to Licensee in this Agreement. As of the date Takeda includes any additional Takeda Compound Patents on Exhibit D, Takeda shall have all rights necessary to grant the license under such additional Takeda Compound Patents that it grants to Licensee in this Agreement.

(b) The Takeda Compound Patents set forth in Exhibit D as of the Effective Date represent all Patents that Takeda or any of its Affiliates Controls that claim vonoprazan fumarate (not including any derivatives thereof) or a Product comprising vonoprazan fumarate (not including any derivatives thereof) as the sole active ingredient in the Field in the Territory. As of the date Takeda provides Licensee any update of Exhibit D, the Takeda Compound Patents set forth in Exhibit D represent all Patents that Takeda or any of its Affiliates Controls that claim vonoprazan fumarate (not including any derivatives thereof) or a Product comprising vonoprazan fumarate (not including any derivatives thereof) as the sole active ingredient in the Field in the Territory. As of the later of the Effective Date or the date on which any Takeda Compound Patent is first set forth on Exhibit D, Takeda is the sole and exclusive owner of the entire right, title and interest in such Takeda Compound Patent free of any encumbrance, lien, or claim of ownership by any Third Party, except to the extent otherwise expressly stated on Exhibit D.

(c) To Takeda's Knowledge, there is no actual or threatened infringement or misappropriation of the Takeda Know-How or Takeda Compound Patents by any Person in the Territory. Takeda shall notify Licensee promptly after becoming aware of any actual or threatened infringement or misappropriation of the Takeda Know-How or Takeda Compound Patents by any Person in the Territory.

(d) As of the date on which any Takeda Compound Patent is first set forth on Exhibit D, such Takeda Compound Patent is being diligently prosecuted in the Territory in accordance with Applicable Law, and, to Takeda's Knowledge, such Takeda Compound Patent has been filed and maintained properly and correctly and all applicable fees have been paid on or before the due date for payment.

(e) As of the date on which any Takeda Compound Patent is first set forth on Exhibit D, to Takeda's Knowledge, such Takeda Compound Patent properly identifies each and every inventor of the claims thereof as determined in accordance with Applicable Law of the jurisdiction in which such Takeda Compound Patent is issued or such application is pending.

(f) To Takeda's Knowledge, the Takeda Know-How has been kept confidential or has been disclosed to Third Parties only under terms of confidentiality. To the Knowledge of Takeda, no breach of such confidentiality has been committed by any Third Party.

(g) The Inventions claimed or disclosed by any Takeda Compound Patent (i) were not conceived, discovered, developed, or otherwise made in connection with any research activities funded, in whole or in part, by the federal government of the U.S. or any agency thereof, (ii) are not a "subject invention" as that term is described in 35 U.S.C. Section 201(f), and (iii) are not otherwise subject to the provisions of the Bayh-Dole Act; except in each case to the extent otherwise expressly stated on Exhibit D as of the date on which any such Takeda Compound Patent is first set forth on Exhibit D.

(h) Neither Takeda nor any of its Affiliates has been debarred by the FDA or is subject to any similar sanction of other Regulatory Authorities in the Territory, and neither Takeda nor any of its Affiliates has used, or will engage, in any capacity, in connection with this Agreement or any ancillary agreements (if any), any Person who either has been debarred by such a Regulatory Authority, or is the subject of a conviction described in Section 306 of the FDCA. Takeda shall inform Licensee in writing promptly if it or any Person engaged by Takeda or any of its Affiliates who is performing any activities under or in connection with this Agreement or any ancillary agreements (if any) is debarred or is the subject of a conviction described in Section 306 of the FDCA, or if any action, suit, claim, investigation or legal or administrative proceeding is pending or, to Takeda's Knowledge, is threatened, relating to the debarment or conviction of Takeda, any of its Affiliates or any such Person performing activities.

(i) To Takeda's Knowledge, there are no material claims, judgments, or settlements against, or amounts with respect thereto, owed by Takeda or any of its Affiliates to any Third Parties relating to the Regulatory Materials licensed by Takeda to Licensee, the Takeda Know-How, or the Takeda Compound Patents in the Territory.

(j) No claim or litigation in the Territory has been brought or, to Takeda's Knowledge, threatened by any Person alleging, and Takeda has no Knowledge of any claim, whether or not asserted: (i) that any of the Takeda Compound Patents is invalid or unenforceable, (ii) that the Regulatory Materials licensed by Takeda to Licensee, the Takeda Compound Patents, the Takeda Know-How, or the disclosing, copying, making, assigning, or licensing of the Regulatory Materials by Takeda to Licensee, the Takeda Compound Patents or the Takeda Know-How, violates, infringes, or otherwise conflicts or interferes with, or would violate, infringe, or otherwise conflict or interfere with, any intellectual property or proprietary right of any Person; or (iii) related to the Development of the Product. Takeda shall notify Licensee promptly after becoming aware of any claim or litigation in the Territory that has been brought or threatened by any Person alleging any of the foregoing.

(k) To Takeda's Knowledge, Takeda and its Affiliates have provided or made available to Licensee prior to the Effective Date, true, complete, and correct copies (as of the Effective Date) of all material adverse information known to Takeda with respect to the safety and efficacy of any Compound, and all of the foregoing information and documents provided are true, correct, and complete in all material respects.

(l) Takeda owns or otherwise controls all right, title and interest in and to the Regulatory Materials that Takeda licenses to Licensee hereunder, and to Takeda's Knowledge, Takeda and its Affiliates have generated, prepared, maintained, and retained all material Regulatory Materials in the Field that are required to be maintained or retained pursuant to and in accordance with GCP, GLP and other Applicable Law, and all such information is true, complete and correct in all material respects and what it purports to be.

**10.3 Additional Representations, Warranties and Covenants of Licensee.** Licensee represents and warrants as of the Effective Date and covenants to Takeda that:

(a) Licensee has not been debarred by the FDA (and is not subject to any similar sanction of other Regulatory Authorities in the Territory), and is not subject to any such debarment

or similar sanction by any such Regulatory Authority, and Licensee has not used, and will not engage, in any capacity, in connection with this Agreement, any Person who either has been debarred by such a Regulatory Authority, or is the subject of a conviction described in Section 306 of the FFDC. Licensee shall inform Takeda in writing promptly if it or any Person engaged by Licensee who is performing services under this Agreement is debarred or is the subject of a conviction described in Section 306 of the FFDC, or if any action, suit, claim, investigation or legal or administrative proceeding is pending or, to Licensee's Knowledge, is threatened, relating to the debarment or conviction of Licensee or any such Person performing services hereunder.

(b) To the extent permissible under Applicable Law, all employees of Licensee or its Affiliates performing activities under this Agreement shall be under an obligation to assign all right, title and interest in and to their inventions and other know-how, whether or not patentable, and intellectual property rights therein, to Licensee or its Affiliate(s) as the sole owner thereof. Takeda shall have no obligation to contribute to any remuneration of any inventor employed or previously employed by Licensee or any of its Affiliates in respect of any such inventions, Information and discoveries and intellectual property rights therein that are so assigned to Licensee or its Affiliate(s). Licensee will pay all such remuneration, if any, due to such inventors with respect to such inventions and other know-how and intellectual property rights therein.

(c) In performing its obligations under this Agreement, or any ancillary agreements (if any), Licensee shall, and shall cause its Affiliates and sublicensees to, comply with (i) all Applicable Law, including any applicable anti-corruption or anti-bribery laws or regulation, of any Governmental Authority with jurisdiction over the activities performed by Licensee or its Affiliates or sublicensees in furtherance of such obligations, and (ii) standard pharmaceutical industry accepted guidelines regarding promotional materials, including Pharmaceutical Research and Manufacturers of America (PhRMA) guidelines.

(d) During the period commencing upon the Effective Date and until the first to occur of [\*\*\*] Licensee and its Affiliates, without the prior written consent of Takeda, during the Term, shall not solicit, induce, encourage, or participate in soliciting, inducing, or encouraging any employee of Takeda, or any of its Affiliates who has been as of, or becomes after the Effective Date, involved in the discussion leading to this Agreement, or the Development, Manufacture or Commercialization of any Compound or Product (each, an "Involvement Employee") to terminate his or her relationship with Takeda or Takeda's Affiliate. An offer of employment to any such Involved Employee of Takeda by Licensee or its Affiliates which results directly from unsolicited responses to general advertisements for employment will not be deemed to be in violation of this provision.

(e) The Stock Issuance Agreement attached as Exhibit G is substantially the same as the Common Stock purchase agreements entered into by Licensee and other founders on or prior to the Effective Date.

(f) The Up-Front Shares issued pursuant to Section 2.1 represent [\*\*\*] percent [\*\*\*] of Fully-Diluted Capitalization of Licensee as of the Effective Date, excluding the securities issued in the Qualified Financing (and, for the avoidance of doubt, excluding convertible promissory notes that are converted into the securities issued in the Qualified Financing).

**\*\*\* Certain Confidential Information Omitted**

(g) The capitalization table provided to Takeda (i) reflects the information upon which the calculation of the number of shares of Common Stock issued to Takeda pursuant to this Agreement has been made and (ii) is true, complete and correct as of the Effective Date, assuming the completion of the Qualified Financing.

(h) Licensee has all rights necessary to grant the licenses under the Licensee Intellectual Property and rights of cross-reference under Regulatory Materials that it grants to Takeda in this Agreement.

(i) There are no Licensee Patents as of the Effective Date and accordingly there are no Licensee Patents listed in Exhibit B as of the Effective Date. As of the date Licensee provides Takeda any update of Exhibit B, the Licensee Patents set forth in Exhibit B represent all Licensee Patents that Licensee or any of its Affiliates Controls that claim the Compound or Product in the Field. As of the date on which any Licensee Patent is first set forth on Exhibit B, Licensee is the sole and exclusive owner of the entire right, title and interest in such Licensee Patent free of any encumbrance, lien, or claim of ownership by any Third Party, except to the extent otherwise expressly stated on Exhibit B.

(j) Licensee shall notify Takeda promptly after becoming aware of any actual or threatened infringement or misappropriation of the Licensee Know-How or Licensee Patents by any Person in the Territory.

(k) As of the date on which any Licensee Patent is first set forth on Exhibit B, such Licensee Patent is being diligently prosecuted in the Territory in accordance with Applicable Law, and, to Licensee's Knowledge, such Licensee Patent has been filed and maintained properly and correctly and all applicable fees have been paid on or before the due date for payment.

(l) As of the date on which any Licensee Patent is first set forth on Exhibit B, to Licensee's Knowledge, such Licensee Patent properly identifies each and every inventor of the claims thereof as determined in accordance with Applicable Law of the jurisdiction in which such Licensee Patent is issued or such application is pending.

(m) To Licensee's Knowledge, the Licensee Know-How has been kept confidential or has been disclosed to Third Parties only under terms of confidentiality. To the Knowledge of Licensee, no breach of such confidentiality has been committed by any Third Party.

(n) The Inventions claimed or disclosed by any Licensee Patent (i) were not conceived, discovered, developed, or otherwise made in connection with any research activities funded, in whole or in part, by the federal government of the U.S. or any agency thereof, (ii) are not a "subject invention" as that term is described in 35 U.S.C. Section 201(f), and (iii) are not otherwise subject to the provisions of the Bayh-Dole Act; except in each case to the extent otherwise expressly stated on Exhibit B as of the date on which any such Licensee Patent is first set forth on Exhibit B.

(o) To Licensee's Knowledge, there are no material claims, judgments, or settlements against, or amounts with respect thereto, owed by Licensee or any of its Affiliates to any Third Parties relating to the Regulatory Materials licensed by Licensee to Takeda, the Licensee Know-How, or the Licensee Patents in the Territory.

(p) Licensee shall notify Takeda promptly after becoming aware of any claim or litigation in the Territory that has been brought or threatened by any Person alleging: (i) that any of the Licensee Patents is invalid or unenforceable, (ii) that the Regulatory Materials licensed by Licensee to Takeda, the Licensee Patents, the Licensee Know-How, or the disclosing, copying, making, assigning, or licensing of the Regulatory Materials by Licensee to Takeda, the Licensee Patents or the Licensee Know-How, violates, infringes, or otherwise conflicts or interferes with, or would violate, infringe, or otherwise conflict or interfere with, any intellectual property or proprietary right of any Person; or (iii) related to the Development of the Product.

(q) Licensee owns or otherwise controls all right, title and interest in and to the Regulatory Materials that Licensee licenses to Takeda hereunder, and to Licensee's Knowledge, Licensee and its Affiliates have generated, prepared, maintained, and retained all material Regulatory Materials in the Field that are required to be maintained or retained pursuant to and in accordance with GCP, GLP and other Applicable Law, and all such information is true, complete and correct in all material respects and what it purports to be.

10.4 **No Other Representations or Warranties.** EXCEPT AS EXPRESSLY SET FORTH IN THIS ARTICLE 10, THE PARTIES MAKE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHATSOEVER, EITHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, EITHER IN FACT OR BY OPERATION OF LAW, BY STATUTE OR OTHERWISE, AND EACH PARTY SPECIFICALLY DISCLAIMS ANY OTHER WARRANTIES, INCLUDING ANY EXPRESS OR IMPLIED WARRANTY OF QUALITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OF NON-INFRINGEMENT OR AS TO THE VALIDITY OF ANY PATENTS IN THE TERRITORY.

#### ARTICLE 11 – CONFIDENTIALITY

11.1 **Nondisclosure.** Each Party agrees that, during the Term and for a period of [\*\*\*] thereafter, a Party (the "Receiving Party") receiving Confidential Information of the other Party (the "Disclosing Party") shall (a) maintain in confidence such Confidential Information using not less than the efforts such Receiving Party uses to maintain in confidence its own confidential or proprietary information of similar kind and value, (b) not disclose such Confidential Information to any Third Party without the prior written consent of the Disclosing Party, except for disclosures expressly permitted below, and (c) not use such Confidential Information for any purpose except those permitted by this Agreement (it being understood that this Section 11.1 shall not create or imply any rights or licenses not expressly granted under this Agreement). Notwithstanding anything to the contrary in the foregoing, the obligations of confidentiality and non-use with respect to any trade secret (to the extent understood by a Party to be a trade secret) within such Confidential Information shall survive such [\*\*\*] period for so long as such Confidential Information remains protected as a trade secret under Applicable Law.

11.2 **Exceptions.** The obligations in Section 11.1 shall not apply with respect to any portion of the Confidential Information that the Receiving Party can show by competent evidence:

- (a) is publicly disclosed by the Disclosing Party, either before or after it is disclosed to the Receiving Party hereunder;

\*\*\* **Certain Confidential Information Omitted**

(b) is known to the Receiving Party or any of its Affiliates, without any obligation to keep it confidential or any restriction on its use, prior to disclosure by the Disclosing Party;

(c) is subsequently disclosed to the Receiving Party or any of its Affiliates on a non-confidential basis by a Third Party that, to the Receiving Party's knowledge, is not bound by a similar duty of confidentiality or restriction on its use;

(d) is now, or hereafter becomes, through no act or failure to act on the part of the Receiving Party or any of its Affiliates, generally known or available, either before or after it is disclosed to the Receiving Party;

(e) is independently discovered or developed by or on behalf of the Receiving Party or any of its Affiliates without the use of or access to Confidential Information belonging to the Disclosing Party; or

(f) is the subject of written permission to disclose provided by the Disclosing Party.

**11.3 Authorized Disclosure.** The Receiving Party may disclose Confidential Information belonging to the Disclosing Party only to the extent such disclosure is reasonably necessary in the following instances:

(a) filing or prosecuting Patents as permitted by this Agreement;

(b) filing Regulatory Materials in order to obtain or maintain Regulatory Approvals;

(c) prosecuting or defending litigation, including responding to a subpoena in a Third Party litigation;

(d) complying with Applicable Law or regulations or court or administrative orders; or

(e) to its Affiliates, sublicensees or prospective sublicensees, subcontractors or prospective subcontractors, payors, consultants, agents and advisors on a "need-to-know" basis in order for the Receiving Party to exercise its rights or fulfill its obligations under this Agreement, each of whom prior to disclosure must be bound by obligations of confidentiality and restrictions on use of such Confidential Information that are no less restrictive (except for the duration of such restrictions, which shall be [\*\*\*]) than those set forth in this Article 11; provided, however, that, in each of the above situations, the Receiving Party shall remain responsible for any failure by any Person who receives Confidential Information pursuant to this Section 11.3(e) to treat such Confidential Information as required under this Article 11.

(f) to its actual or prospective investors, acquirers, merger-partners, and to any investment advisors, each of whom prior to disclosure must be bound by obligations of confidentiality and restrictions on use of such Confidential Information that are no less restrictive than those set forth in this Article 11 (except for the duration of such restrictions, which shall be [\*\*\*] or [\*\*\*]); provided, however, that, in each of the above situations, the Receiving Party shall remain responsible for any failure by any Person who receives Confidential Information pursuant to this Section 11.3(f) to treat such Confidential Information as required under this Article 11.

**\*\*\* Certain Confidential Information Omitted**

(g) If and whenever any Confidential Information is disclosed in accordance with this Section 11.3, such disclosure shall not cause any such information to cease to be Confidential Information except to the extent that such disclosure results in a public disclosure of such information (other than by breach of this Agreement). Notwithstanding the foregoing, in the event a Party is required to make a disclosure of the other Party's Confidential Information pursuant to clauses (a) through (d) of this Section 11.3, it shall, except where impracticable, give reasonable advance notice to the other Party of such disclosure and use not less than the same efforts to secure confidential treatment of such information as it would to protect its own confidential information from disclosure and shall be jointly and severally liable for any breach of this Article 11 by such Person.

11.4 **Terms of this Agreement.** The Parties acknowledge that this Agreement and all of the respective terms of this Agreement shall be treated as Confidential Information of both Parties.

11.5 **Publicity.** The Parties shall make a joint public announcement of the execution of this Agreement which shall be issued at a time to be mutually agreed by the Parties. The Parties intend that the content of the joint public announcement will be substantially similar to the form of press release attached hereto as Exhibit M, however the final content must be mutually agreed upon by both Parties prior to being issued by either party. Each Party agrees not to issue any other press release or other public statement disclosing other information relating to this Agreement or the transactions contemplated hereby that contains information not previously publicly disclosed in accordance with this Section 11.5 without the prior written consent of the other Party, not to be unreasonably withheld, conditioned or delayed.

11.6 **Securities Filings.** Notwithstanding anything to the contrary in this Article 11, in the event either Party proposes to file with the Securities and Exchange Commission or the securities regulators of any state or other jurisdiction a registration statement or any other disclosure document that describes or refers to the terms and conditions of this Agreement or any related agreements between the Parties, such Party shall notify the other Party of such intention and shall provide the other Party with a copy of relevant portions of the proposed filing at least [\*\*\*] prior to such filing (and any revisions to such portions of the proposed filing a reasonable time prior to the filing thereof), including any exhibits thereto that refer to the other Party or the terms and conditions of this Agreement or any related agreements between the Parties. The Party making such filing shall cooperate in good faith with the other Party to obtain confidential treatment of the terms and conditions of this Agreement or any related agreements between the Parties that the other Party requests to be kept confidential or otherwise afforded confidential treatment, and shall only disclose Confidential Information that it is reasonably advised by legal counsel is legally required to be disclosed. No such notice shall be required if the description of or reference to this Agreement or a related agreement between the Parties contained in the proposed filing has been included in any previous filing made by the either Party in accordance with this Section 11.6 or otherwise approved by the other Party or disclosed in a prior press release by the Parties or other prior public disclosure made by a Party in accordance with the terms of this Article 11.

11.7 **Publications and Promotional Materials.** Licensee shall submit to Takeda for its review any proposed academic, scientific or medical peer reviewed publication by Licensee, its Affiliates and its or their sublicensees that relates to the Compound or a Product. Licensee shall also submit to Takeda for its review any proposed academic, scientific or medical publication or public

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presentation that contains Takeda Know-How or Joint Know-How that has not been previously publicly disclosed or otherwise approved by Takeda to be publicly disclosed, for the purposes of determining whether any portion of the proposed publication or presentation should be modified or deleted so as to preserve the value of such Takeda Know-How and Joint Know-How. Licensee shall consider all comments provided by Takeda in good faith, including comments regarding the potential adverse impact on Exploitation of Compound and/or Product outside of the Territory. Takeda shall submit to Licensee for its review any proposed academic, scientific or medical publication or public presentation that contains Joint Know-How that has not been previously publicly disclosed or otherwise approved by Licensee to be publicly disclosed, for the purposes of determining whether any portion of the proposed publication or presentation should be modified or deleted so as to preserve the value of such Joint Know-How. Takeda shall consider all comments provided by Licensee in good faith, including comments regarding the potential adverse impact on Exploitation of Compound and/or Product in the Territory. Written copies of any proposed publication or presentation required to be submitted hereunder shall be submitted to the applicable Party no later than [\*\*\*] before submission for publication or presentation (the “Review Period”). The Party receiving such submission shall provide its comments with respect to such publications and presentations within [\*\*\*] of its receipt of such written copy. The Review Period may be extended for an additional [\*\*\*] in the event such receiving Party can, within [\*\*\*] of receipt of the written copy, demonstrate reasonable need for such extension including for the preparation and filing of patent applications. Each Party shall comply, and shall cause its Affiliates and sublicensees to comply, with (i) standard academic practice regarding authorship of scientific publications and recognition of contribution of the other Party in any publication governed by this Section 11.7, including International Committee of Medical Journal Editors standards regarding authorship and contributions, and (ii) standard pharmaceutical industry accepted guidelines regarding promotional materials, including Pharmaceutical Research and Manufacturers of America (PhRMA) guidelines.

11.8 **Equitable Relief.** Given the nature of the Confidential and the competitive damage that could result to a Party upon unauthorized disclosure, use or transfer of its Confidential Information to any Third Party, the Parties agree that monetary damages may not be a sufficient remedy for any breach of this Article 11. In addition to all other remedies, a Party shall be entitled to seek specific performance and injunctive and other equitable relief as a remedy for any breach or threatened breach of this Article 11.

## ARTICLE 12 – COMMITTEE

12.1 **Information Sharing Committee.** [\*\*\*] after the Effective Date, the Parties will establish an information sharing committee (the “Information Sharing Committee”). The Information Sharing Committee will be comprised of [\*\*\*] representatives from each Party, or such other number of equal representatives as the Parties may mutually agree upon. From time to time each Party may replace its Information Sharing Committee representatives by written notice to the other Party specifying the prior representative(s) and their replacement(s). The Information Sharing Committee will meet at least [\*\*\*], or as frequently as agreed to by the members of the Information Sharing Committee, on such dates and at such times and places as agreed to by the members of the Information Sharing Committee, provided that at least [\*\*\*] will be held in person. Each Party will be responsible for its own expenses relating to attendance at or participation in Information Sharing Committee meetings. The purpose of the Information Committee will be for (i) Licensee

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to provide Takeda with updates regarding progress of Licensee's and its Affiliates' and sublicensees' Development, Manufacturing, and Commercialization activities with respect to the Compound and Product, and (ii) the Parties, in accordance with Section 12.2, to exchange Licensee Know-How and Takeda Know-How.

## 12.2 Sharing of Know-How.

(a) At one (1) Information Sharing Committee meeting [\*\*\*], the Information Sharing Committee shall discuss, and in good faith attempt to agree upon, whether (i) any Takeda Know-How first obtained or generated by Takeda after the Effective Date is reasonably necessary or useful to enable Licensee to perform its obligations under this Agreement, and (ii) any Licensee Know-How is reasonably necessary or useful to enable Takeda: (a) to perform its obligations under this Agreement; (b) Develop or Manufacture the Product; and (c) Commercialize the Product outside of the Territory. Takeda shall disclose to Licensee all Takeda Know-How first obtained or generated by Takeda after the Effective Date that the Information Sharing Committee determines is reasonably necessary or useful to enable Licensee to perform its obligations under this Agreement. Licensee shall disclose to Takeda all Licensee Know-How that the Information Sharing Committee determines is reasonably necessary or useful to enable Takeda: (A) to perform its obligations under this Agreement; (B) Develop or Manufacture the Product; and (C) Commercialize the Product outside of the Territory. All decisions by the Information Sharing Committee as to any Information to be shared pursuant to this Section 12.2(a) shall be taken only [\*\*\*].

(b) In addition to the foregoing, during the Term, at either Party's reasonable request, the other Party will cooperate with the requesting party to transfer Information created after the Effective Date to the extent relating to Permitted Formulations of the Product, CMC data, and Clinical Trial data.

12.3 **Non-Member Participation.** Additional non-members of the Information Sharing Committee having relevant experience may from time to time be invited to participate in an Information Sharing Committee meeting, provided that such participants shall have no voting rights or powers. Non-member participants who are not employees of a Party or its Affiliates shall only be allowed to attend if: (1) the other Party's representatives have consented to the attendance (such consent not to be unreasonably withheld, delayed or conditioned); and (2) such non-member participant is subject to confidentiality and non-use obligations at least as restrictive as those set forth in this Agreement.

## ARTICLE 13 – TERM AND TERMINATION

13.1 **Term.** This Agreement shall become effective as of the Effective Date and shall continue in full force and effect until the expiration of this Agreement as described in this Section 13.1, unless earlier terminated pursuant to this Article 13 (the "Term"). This Agreement shall expire as follows:

(a) on a country-by-country and Product-by-Product basis, upon the expiration of the Royalty Term with respect to each Product in each country in the Territory, as applicable; or

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(b) in its entirety, upon the expiration of the Royalty Term with respect to the last Product Commercialized in the last country in the Territory.

### 13.2 Termination for Material Breach.

(a) Either Party (the “Non-breaching Party”) may terminate this Agreement in its entirety in the event the other Party (the “Breaching Party”) has materially breached this Agreement, and such material breach has not been cured within [\*\*\*] (other than any breach for failure to pay, which shall be [\*\*\*] or other than as provided in Section 13.2(b)) after receipt of written notice of such breach by the Breaching Party from the Non-Breaching Party (the “Cure Period”); provided, however, that, to the extent termination is for uncured breach by Licensee, such termination shall apply only to those countries in the Territory to which such breach relates except for an uncured breach affecting the United States, in which case this Agreement will terminate in its entirety. A material breach by Licensee of the Warrant, which is not cured by Licensee within [\*\*\*] after written notice of such material breach to Licensee from Takeda, shall be deemed a material breach of this Agreement which relates to the entire Territory. The written notice describing the alleged material breach shall provide sufficient detail to put the Breaching Party on notice of such material breach. Any termination of this Agreement pursuant to this Section 13.2(a) shall become effective at the end of the Cure Period, unless the Breaching Party has cured any such material breach prior to the expiration of such Cure Period, or unless such allegedly breaching Party disputes such breach. The right of either Party to terminate this Agreement as provided in this Section 13.2(a) shall not be affected in any way by such Party’s waiver of or failure to take action with respect to any previous breach under this Agreement.

(b) If the Parties reasonably and in good faith disagree as to whether there has been a material breach, including whether such breach was material, the Party that disputes whether there has been a material breach may contest the allegation in accordance with Article 14. Notwithstanding anything to the contrary contained in Section 13.2(a), the Cure Period for any Dispute shall run from the date that written notice was first provided to the Breaching Party by the Non-Breaching Party through the resolution of such Dispute pursuant to Article 14, and it is understood and acknowledged that, during the pendency of a Dispute pursuant this Section 13.2(b), all of the terms and conditions of this Agreement shall remain in effect, and the Parties shall continue to perform all of their respective obligations under this Agreement.

### 13.3 Termination by Licensee.

(a) Licensee shall have the unilateral right to terminate this entire Agreement upon [\*\*\*] written notice to Takeda.

(b) Licensee shall have the right to terminate this entire Agreement at any time upon providing [\*\*\*] prior written notice to Takeda if Licensee determines that the Compound or the Product caused or is likely to cause a fatal, life-threatening or other serious adverse event that is reasonably expected, based upon then available data, to preclude continued Development and/or Commercialization of the Product in the Field in the Territory.

(c) The Parties may agree to terminate this Agreement prior to expiration of the [\*\*\*] notice period provided in Section 13.3(b) above, where the Parties: (i) have reached consensus

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regarding the inability to continue Commercializing the Products in the Field in the Territory for the reasons set forth in Section 13.3(b); and (ii) have completed all wind-down and other transition activities, including those set forth in Section 13.7.

**13.4 Termination for Patent Challenge.** Takeda may terminate this entire Agreement at any time upon written notice to Licensee, if Licensee, or any of Licensee's Affiliates, or its or their sublicensees, directly, or indirectly through assistance granted to a Third Party, commences any interference or opposition proceeding, challenges the validity or enforceability of, or opposes any extension of or the grant of a supplementary protection certificate with respect to (a "Patent Proceeding") any Takeda Patent or any other Patent owned or controlled by Takeda that claims or discloses the composition of matter or the method of making or using the Product anywhere in the Territory except for a country in the Territory in which this Agreement has been terminated prior to the commencement of any such Patent Proceeding. However, Takeda's right to terminate this Agreement under this Section 13.4 shall not apply to any Affiliate of Licensee that first becomes an Affiliate of Licensee after the Effective Date in connection with a merger or acquisition event, or any sublicensee, where such Affiliate or sublicensee was undertaking activities in connection with a Legal Proceeding prior to such merger or acquisition event or the grant of such sublicense, provided such Affiliate or sublicensee promptly ceases all activities in the furtherance of such Patent Proceeding and withdraws or terminates with prejudice any such Patent Proceeding within [\*\*\*] of such merger or acquisition event or grant of sublicense.

**13.5 Termination for Insolvency.**

(a) Either Party may terminate this Agreement in its entirety upon providing written notice to the other Party on or after the time that such other Party makes a general assignment for the benefit of creditors, files an insolvency petition in bankruptcy, petitions for or acquiesces in the appointment of any receiver, trustee or similar officer to liquidate or conserve its business or any substantial part of its assets, commences under the laws of any jurisdiction any proceeding involving its insolvency, bankruptcy, reorganization, adjustment of debt, dissolution, liquidation or any other similar proceeding for the release of financially distressed debtors, or becomes a party to any proceeding or action of the type described above, and such proceeding or action remains un-dismissed or un-stayed for a period of more than [\*\*\*].

(b) All rights and licenses granted under or pursuant to this Agreement are, and shall otherwise be deemed to be, for purposes of Section 365(n) of Title 11 of the United States Code and other similar laws in any other jurisdiction outside of the Territory (collectively, the "Bankruptcy Laws"), licenses of rights to "intellectual property" as defined under the Bankruptcy Laws. If a case is commenced during the Term by or against a Party under Bankruptcy Laws then, unless and until this Agreement is rejected as provided pursuant to such Bankruptcy Laws, such Party (in any capacity, including debtor-in-possession) and its successors and assigns (including a Title 11 trustee) shall perform all of the obligations in this Agreement intended to be performed by such Party. If a case is commenced during the Term by or against a Party under the Bankruptcy Laws, this Agreement is rejected as provided for under the Bankruptcy Laws, and the non-bankrupt Party elects to retain its rights hereunder as provided for under the Bankruptcy Laws, then the Party subject to such case under the Bankruptcy Laws (in any capacity, including debtor-in-possession) and its successors and assigns (including a Title 11 trustee), shall provide to the non-bankrupt Party copies of all Patents and Information necessary for the non-bankrupt Party to

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prosecute, maintain and enjoy its rights under the terms of this Agreement. All rights, powers and remedies of the non-bankrupt Party as provided herein are in addition to and not in substitution for any and all other rights, powers and remedies now or hereafter existing at law or in equity (including the Bankruptcy Laws) in the event of the commencement of a case by or against a Party under the Bankruptcy Laws. In particular, it is the intention and understanding of the Parties to this Agreement that the rights granted to the Parties under this Section 13.5 are essential to the Parties' respective businesses and the Parties acknowledge that damages are not an adequate remedy.

**13.6 Effects of Termination.** All of the following effects of termination are in addition to the other rights and remedies that may be available to either of the Parties under this Agreement and shall not be construed to limit any such rights or remedies. Upon the termination of this Agreement:

(a) Notwithstanding anything contained in this Agreement to the contrary, all rights and licenses granted herein to Licensee shall terminate in the terminated countries and Licensee shall cease any and all Development, Manufacture, and Commercialization activities with respect to the Compound and the Product in such terminated countries;

(b) All payment obligations hereunder shall terminate, other than those that are accrued and unpaid as of the effective date of such termination;

(c) [\*\*\*]

(d) [\*\*\*]

(e) [\*\*\*]

(f) Subject to the payment of all amounts required under Sections 13.6(b) above and Sections 8.2 and 8.3, for a period of up to [\*\*\*] after termination of this Agreement, Licensee shall have the right to sell or otherwise dispose of any inventory of the Product on hand at the time of such termination or in the process of Manufacturing;

(g) [\*\*\*]

(h) [\*\*\*]

**13.7 Remedies.** Notwithstanding anything to the contrary in this Agreement, except as otherwise set forth in this Agreement, termination or expiration of this Agreement shall not relieve the Parties of any liability or obligation which accrued hereunder prior to the effective date of such termination or expiration, nor prejudice either Party's right to obtain performance of any obligation. Each Party shall be free, pursuant to Article 14, to seek, without restriction as to the number of times it may seek, damages, expenses and remedies that may be available to it under Applicable Law or in equity and shall be entitled to offset the amount of any damages and expenses obtained against the other Party in a final determination under Section 14.3, against any amounts otherwise due to such other Party under this Agreement.

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13.8 **Survival.** The following provisions shall survive any expiration or termination of this Agreement for the period of time specified therein (or, if no such period is specified, indefinitely): Articles 1, 8 (but only to the extent relating to milestone events occurring on or prior to the date of expiration or termination, and only with respect to royalties owed, if any, on Products sold prior to the date of expiration or termination, or sold after such termination to the extent expressly permitted under this Agreement), 11 (for the period set forth in Section 11.1), 14, 15, and 16 and Sections 2.2 (b), (c), (d) and (e), 3.1, 4.3(d), 4.4, 5.8 (first sentence only), 6.7 (solely following expiration if both Parties (or any of their sublicensees) are Commercializing Product), 9.1, 9.2 (with respect to any disclosure obligations that arise on or prior to expiration or termination), 9.3(b) (with respect to Licensee's obligation to notify Takeda of Licensee's decision to abandon or not maintain Licensee Patents), 9.3(c) (solely with respect to any Joint Patents not assigned to Takeda), 9.3(d)(i)-(iii), 9.5(d) (to the extent any suit or action under that section is still pending upon expiration or termination), 10.3(j) (for [\*\*\*] after expiration or termination), 10.3(p) (for [\*\*\*] after expiration or termination), 10.4, 13.6, 13.7, and 13.8. Following the expiration of this Agreement pursuant to Section 13.1 with respect to a Product in a country of the Territory, Licensee will have a perpetual, irrevocable, non-exclusive, fully-paid and royalty-free right and license, with the right, subject to Takeda's prior written consent, which shall not be unreasonably withheld, conditioned or delayed, to grant sublicenses, under the Takeda Intellectual Property to Exploit such Product in the Field in such country of the Territory.

#### ARTICLE 14 – DISPUTE RESOLUTION

14.1 **Exclusive Dispute Resolution Mechanism.** The Parties agree that the procedures set forth in this Article 14 shall be the exclusive mechanism for resolving any dispute, controversy, or claim between the Parties that may arise from time to time pursuant to this Agreement relating to either Party's rights or obligations hereunder (each, a "Dispute", and collectively, the "Disputes") that is not resolved through good faith negotiation between the Parties.

14.2 **Resolution by Executive Officers.** Except as otherwise provided in this Section 14.2, in the event of any Dispute, the Parties shall first attempt in good faith to resolve such Dispute by negotiation and consultation between themselves. In the event that such Dispute is not resolved on an informal basis within [\*\*\*] after receipt of written notice of such Dispute by a Party, either Party may, by written notice to the other Party, refer the Dispute to the senior executive officer (or his/her delegate) of the other Party for attempted resolution by good faith negotiation within [\*\*\*] after such notice is received. Each Party may, in its sole discretion, seek resolution of any and all Disputes that are not resolved under this Section 14.2 in accordance with Section 14.3.

14.3 **Litigation.** Any unresolved Dispute which was subject to Section 14.2, shall be brought exclusively in a court of competent jurisdiction, federal or state, located in New York, New York, and in no other jurisdiction. Each Party to this Agreement, by its execution hereof, (a) hereby irrevocably submits to the exclusive jurisdiction of the United States District Court and state courts located in New York, New York for the purpose of any and all unresolved Disputes which were subject to Section 14.2; (b) hereby waives to the extent not prohibited by Applicable Law, and agrees not to assert, by way of motion, as a defense or otherwise, in any such action, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that any such action brought in one of the above-named courts in such jurisdiction should be dismissed on grounds of forum non conveniens, should

\*\*\* **Certain Confidential Information Omitted**

be transferred to any court other than one of the above-named courts, or should be stayed by reason of the pendency of some other proceeding in any other court other than one of the above-named courts, or that this Agreement or the subject matter hereof may not be enforced in or by such court, and (c) hereby agrees not to commence any such action other than before one of the above-named courts nor to make any motion or take any other action seeking or intending to cause the transfer or removal of any such action to any court other than one of the above-named courts whether on the grounds of inconvenient forum or otherwise. Notwithstanding the foregoing, application may be made to any court of competent jurisdiction with respect to the enforcement of any judgment or award.

14.4 **Preliminary Injunctions.** Notwithstanding anything in this Agreement to the contrary, a Party may seek a temporary restraining order or a preliminary injunction from any court of competent jurisdiction in order to prevent immediate and irreparable injury, loss, or damage on a provisional basis, pending the decision of the arbitrator(s) on the ultimate merits of any Dispute.

14.5 **Payment Tolling.** During the pendency of any dispute resolution proceeding between the Parties under this Article 14, the obligation to make any payment, or portion thereof, under this Agreement from one Party to the other Party, which payment, or portion thereof, is the subject, in whole or in part, of a proceeding under this Article 14, shall be tolled until the final outcome of such Dispute has been established. Any portion of a payment which is not in dispute shall be paid in accordance with the terms of this Agreement.

14.6 **Confidentiality.** Any and all activities conducted under Article 14, including any and all proceedings and decisions under Section 14.3, shall be deemed Confidential Information of each of the Parties, and shall be subject to Article 11.

14.7 **WAIVER OF RIGHT TO JURY TRIAL.** In connection with the Parties' rights under Section 14.3, EACH PARTY, TO THE EXTENT PERMITTED BY APPLICABLE LAWS, KNOWINGLY, VOLUNTARILY, AND INTENTIONALLY WAIVES ITS RIGHT TO A TRIAL BY JURY IN ANY ACTION OR OTHER LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT AND THE TRANSACTIONS IT CONTEMPLATES. THIS WAIVER APPLIES TO ANY ACTION OR LEGAL PROCEEDING, WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE.

#### ARTICLE 15 – INDEMNIFICATION AND LIMITATION OF LIABILITY

15.1 **Indemnification by Licensee.** Licensee hereby agrees to defend, indemnify and hold harmless Takeda and its Affiliates, and each of their respective directors, officers, employees, agents and representatives (each, a "Takeda Indemnitee") from and against any and all claims, suits, actions, demands, liabilities, expenses and/or loss, including reasonable legal expense and attorneys' fees (collectively, the "Losses"), to which any Takeda Indemnitee may become subject as a result of any claim, demand, action or other proceeding by any Third Party (each, a "Claim") to the extent such Losses arise directly or indirectly out of: (i) the practice by Licensee or its Affiliate of any license granted to it under Article 4; (ii) the use, handling, storage, sale or other disposition of the Compound or the Product by Licensee or its Affiliate or sublicensee, including any use of the Compound or the Product for Development and Commercialization; (iii) the breach by Licensee of any warranty, representation, covenant or agreement made by Licensee in this

Agreement; or (iv) the negligence, gross negligence or willful misconduct of Licensee, its Affiliate or its sublicensee, or any officer, director, employee, agent or representative thereof; except, with respect to each of subsections (i) through (iv) above, to the extent such Losses arise directly or indirectly from the negligence, gross negligence or willful misconduct of any Takeda Indemnitee or the breach by Takeda of any warranty, representation, covenant or agreement made by Takeda in this Agreement, or are subject to Takeda's indemnification obligations pursuant to Section 15.2.

**15.2 Indemnification by Takeda.** Takeda hereby agrees to defend, indemnify and hold harmless Licensee and its Affiliates and each of their respective directors, officers, employees, agents and representatives (each, an "Licensee Indemnitee") from and against any and all Losses to which any Licensee Indemnitee may become subject as a result of any Claim to the extent such Losses arise directly or indirectly out of: (i) the practice by Takeda or its Affiliate of any license granted to it under Article 4; (ii) the manufacture, use, handling, storage, sale or other disposition of the Compound or the Product (other than the manufacture, use, handling, storage, by Takeda or any of its Affiliates or licensees for any of the Licensee Indemnitees or the sale or other disposition of Compound or Product by Takeda or its Affiliate or its licensee to any of the Licensee Indemnitees) by Takeda or its Affiliate or its licensee (other than Licensee or its Affiliate or sublicensee); (iii) the breach by Takeda of any warranty, representation, covenant or agreement made by Takeda in this Agreement; or (iv) the negligence, gross negligence or willful misconduct of Takeda or its Affiliate or its licensee (other than Licensee or its Affiliate), or any officer, director, employee, agent or representative thereof; except, with respect to each of subsections (i) through (iv) above, to the extent such Losses arise directly or indirectly from the negligence, gross negligence or willful misconduct of any Licensee Indemnitee or the breach by Licensee of any warranty, representation, covenant or agreement made by Licensee in this Agreement, or are subject to Licensee's indemnification obligations pursuant to Section 15.1.

**15.3 Indemnification Procedures.**

(a) **Notice.** Promptly after a Takeda Indemnitee or a Licensee Indemnitee (each, an "Indemnitee") receives notice of a pending or threatened Claim, such Indemnitee shall give written notice of the Claim to the Party from whom the Indemnitee is entitled to receive indemnification pursuant to Sections 15.1 or 15.2, as applicable (the "Indemnifying Party"). However, an Indemnitee's delay in providing or failure to provide such notice shall not relieve the Indemnifying Party of its indemnification obligations, except to the extent it can demonstrate prejudice due to the delay or lack of notice.

(b) **Defense.** Upon receipt of notice under Section 15.3(a) from the Indemnitee, the Indemnifying Party shall have the duty to either compromise or defend, at its own expense and by legal counsel (reasonably satisfactory to Indemnitee), such Claim. The Indemnifying Party shall promptly (and in any event not more than [\*\*\*] after receipt of the Indemnitee's original notice) notify the Indemnitee in writing that it acknowledges its obligation to indemnify the Indemnitee with respect to the Claim pursuant to this Article 15 and of its intention either to compromise or defend such Claim. Once the Indemnifying Party gives such notice to the Indemnitee, the Indemnifying Party is not liable to the Indemnitee for the fees of other legal counsel or any other expenses subsequently incurred by the Indemnitee in connection with such defense, other than the Indemnitee's reasonable expenses of investigation and cooperation. However, the Indemnitee

\*\*\* **Certain Confidential Information Omitted**

shall have the right to employ separate legal counsel and to control the defense of a Claim at its own expense.

(c) **Cooperation.** The Indemnitee shall cooperate fully with the Indemnifying Party and its legal representatives in the investigation and defense of any Claim. The Indemnifying Party shall keep the Indemnitee informed on a reasonable and timely basis as to the status of such Claim (to the extent the Indemnitee is not participating in the defense of such Claim) and conduct the defense of such Claim in a prudent manner.

(d) **Settlement.** If an Indemnifying Party assumes the defense of a Claim, no compromise or settlement of such Claim may be effected by the Indemnifying Party without the Indemnitee's written consent (which consent shall not be unreasonably withheld, conditioned or delayed), unless: (i) there is no finding or admission of any violation of law or any violation of the rights of any person and no effect on any other claims that may be made against the Indemnitee; (ii) the sole relief provided is monetary damages that are paid in full by the Indemnifying Party; and (iii) the Indemnitee's rights under this Agreement are not adversely affected. If the Indemnifying Party fails to assume defense of a Claim within a reasonable time, the Indemnitee may settle such Claim on such terms as it deems appropriate with the consent of the Indemnifying Party (which consent shall not be unreasonably withheld, conditioned or delayed), and the Indemnifying Party shall be obligated to indemnify the Indemnitee for such settlement as provided in this Article 15.

15.4 **Limitation of Liability.** EXCEPT FOR A PARTY'S OBLIGATIONS SET FORTH IN THIS ARTICLE 15, AND ANY BREACH OF ARTICLE 11 (CONFIDENTIALITY), IN NO EVENT WILL EITHER PARTY BE LIABLE TO THE OTHER PARTY (OR THE OTHER PARTY'S AFFILIATES OR SUBLICENSEES) IN CONNECTION WITH THIS AGREEMENT FOR LOST REVENUE, LOST PROFITS, LOST SAVINGS, LOSS OF USE, DAMAGE TO GOODWILL, OR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, EXEMPLARY, PUNITIVE OR INDIRECT DAMAGES UNDER ANY THEORY, INCLUDING CONTRACT, NEGLIGENCE, OR STRICT LIABILITY, EVEN IF THAT PARTY HAS BEEN PLACED ON NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.

#### ARTICLE 16 – MISCELLANEOUS

16.1 **Notice.** Any notice, request, or other communication permitted or required under this Agreement shall be in writing, shall refer specifically to this Agreement and shall be hand delivered or sent by a recognized overnight delivery service, expenses prepaid, or by facsimile (with transmission confirmed), to the following addresses or to such other addresses as a Party may designate by written notice in accordance with this Section 16.1:

If to Takeda:

Takeda Pharmaceutical Company Limited  
1-1, Doshomachi 4-chome,  
Chuo-ku, Osaka 540-8645  
Attention: Head of Portfolio Strategic Relations



Copy to (which alone shall not constitute sufficient notice):

Takeda Pharmaceuticals U.S.A., Inc.  
One Takeda Parkway  
Deerfield, IL 60015  
Attention: General Counsel, Legal Department  
Facsimile: 224-554-7831

If to Licensee:

Phathom Pharmaceuticals, Inc.  
70 Willow Road, Suite 200  
Menlo Park, CA 94025  
Attention: Chief Executive Officer

Copy to (which alone shall not constitute sufficient notice):

Latham & Watkins LLP  
12670 High Bluff Drive  
San Diego, CA 92103  
Attention: Cheston J. Larson  
Email: cheston.larson@lw.com  
Facsimile No.: 858-523-5450

16.2 **Designation of Affiliates.** Each Party may discharge any obligations and exercise any rights hereunder through delegation of its obligations or rights to any of its Affiliates. Each Party hereby guarantees the performance by its Affiliates of such Party's obligations under this Agreement, and shall cause its Affiliates to comply with the provisions of this Agreement in connection with such performance. Any breach by a Party's Affiliate of any of such Party's obligations under this Agreement shall be deemed a breach by such Party, and the other Party may proceed directly against such Party without any obligation to first proceed against such Party's Affiliate.

16.3 **Force Majeure.** Both Parties shall be excused from the performance of their obligations under this Agreement to the extent that such performance is prevented by Force Majeure and the nonperforming Party promptly provides notice of the prevention to the other Party. Such excuse shall be continued so long as the condition constituting Force Majeure continues and the nonperforming Party takes reasonable efforts to remove the condition. Notwithstanding the foregoing, a Party shall not be excused from making payments owed hereunder because of a Force Majeure affecting such Party. If a Force Majeure persists for more than [\*\*\*], then the Parties shall discuss in good faith the modification of the Parties' obligations under this Agreement in order to mitigate the delays caused by such Force Majeure.

16.4 **Assignment.** Neither Party may assign or transfer this Agreement or any rights or obligations hereunder without the prior written consent of the other (which consent shall not be unreasonably withheld, conditioned or delayed), except that a Party may assign this Agreement (together with the other agreements between the Parties referenced in this Agreement, including

the Clinical Supply Agreement) without the other Party's consent to any Affiliate or to a successor to all or substantially all of the business of such Party to which this Agreement relates, whether in a merger, sale of stock or units, sale of assets or other transaction. Any other assignment or transfer shall require the prior written consent of the other Party (which consent shall not be unreasonably withheld, conditioned or delayed). Any successor or assignee of rights and/or obligations permitted hereunder shall, in writing to the other Party, expressly assume performance of such rights and/or obligations. Any permitted assignment shall be binding on the successors of the assigning Party. [\*\*\*] Any assignment or attempted assignment by either Party in violation of the terms of this Section 16.4 shall be null, void and of no legal effect.

16.5 **Severability.** If any one or more of the provisions of this Agreement is held to be invalid or unenforceable by any court of competent jurisdiction from which no appeal can be or is taken, the provision shall be considered severed from this Agreement and shall not serve to invalidate any remaining provisions hereof. The Parties shall make a good faith effort to replace any invalid or unenforceable provision with a valid and enforceable one such that the objectives contemplated by the Parties when entering this Agreement may be realized.

16.6 **Waiver and Non-Exclusion of Remedies.** Any term or condition of this Agreement may be waived at any time by the Party that is entitled to the benefit thereof, but no such waiver shall be effective unless set forth in a written instrument duly executed by or on behalf of the Party waiving such term or condition. The waiver by either Party hereto of any right hereunder or of the failure to perform or of a breach by the other Party shall not be deemed a waiver of any other right hereunder or of any other breach or failure by such other Party whether of a similar nature or otherwise. The rights and remedies provided herein are cumulative and do not exclude any other right or remedy provided by Applicable Law or otherwise available except as expressly set forth herein.

16.7 **Further Assurance.** Each Party shall duly execute and deliver, or cause to be duly executed and delivered, such further instruments and do and cause to be done such further acts and things, including the filing of such assignments, agreements, documents, and instruments, as may be necessary or as the other Party may reasonably request in connection with this Agreement or to carry out more effectively the provisions and purposes hereof.

16.8 **Relationship of the Parties.** It is expressly agreed that Takeda, on the one hand, and Licensee, on the other hand, shall be independent contractors and that the relationship between the two Parties shall not constitute a partnership, joint venture or agency, including for Tax purposes. Neither Takeda nor Licensee shall have the authority to make any statements, representations or commitments of any kind, or to take any action which shall be binding on the other, without the prior written consent of the other Party to do so. All persons employed by a Party shall be employees of that Party and not of the other Party and all expenses and obligations incurred by reason of such employment shall be for the account and expense of such Party.

16.9 **Counterparts.** This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Agreement may be executed by facsimile, .pdf or other electronically transmitted signatures and such signatures shall be deemed to bind each Party hereto as if they were the original signatures.

\*\*\* **Certain Confidential Information Omitted**

16.10 **Construction.** Except where the context otherwise requires, wherever used, the singular shall include the plural, the plural the singular, and the use of any gender shall be applicable to all genders. Whenever this Agreement refers to a number of days, such number refers to calendar days. The captions of this Agreement are for the convenience of reference only and in no way define, describe, extend, or limit the scope or intent of this Agreement or the intent of any provision contained in this Agreement. The terms “including,” “include,” or “includes” as used herein shall mean “including, but not limited to,” and shall not limit the generality of any description preceding such term. The language of this Agreement shall be deemed to be the language mutually chosen by the Parties and no rule of strict construction shall be applied against either Party hereto. Each Party represents that it has been represented by legal counsel in connection with this Agreement and acknowledges that it has participated in the drafting hereof. In interpreting and applying the terms and provisions of this Agreement, the Parties agree that no presumption will apply against the Party which drafted such terms and provision.

16.11 **Governing Laws.** This Agreement was prepared in the English language, which language shall govern the interpretation of, and any dispute regarding, the terms of this Agreement. This Agreement and all disputes arising out of or related to this Agreement or any breach hereof shall be governed by and construed under the laws of the State of New York, without giving effect to any choice of law principles that would require the application of the laws of a different state.

16.12 **Entire Agreement.** This Agreement, including the Exhibits hereto, sets forth the complete, final and exclusive agreement and all the covenants, promises, agreements, warranties, representations, conditions and understandings between the Parties with respect to the subject matter hereof and supersedes, as of the Effective Date, all prior agreements and understandings between the Parties with respect to the subject matter hereof. There are no covenants, promises, agreements, warranties, representations, conditions or understandings, either oral or written, between the Parties other than as are set forth herein and therein. No subsequent alteration, amendment, change or addition to this Agreement shall be binding upon the Parties unless reduced to writing and signed by an authorized officer of each Party. In the event of any inconsistency between the body of this Agreement and the Exhibits to this Agreement or any subsequent agreements ancillary to this Agreement, unless otherwise expressly stated to the contrary in such Exhibit or subsequent ancillary agreement, the terms contained in this Agreement shall control.

16.13 **Headings.** The headings of each Article and Section in this Agreement have been inserted for convenience of reference only and are not intended to limit or expand on the meaning of the language contained in the particular Article or Section.

**SIGNATURE PAGE FOLLOWS**

IN WITNESS WHEREOF, the Parties have signed this Agreement as of the Effective Date.

**TAKEDA PHARMACEUTICAL COMPANY LIMITED**

By: /s/ Fumihiko Sato  
Name: Fumihiko Sato  
Title: Head of Portfolio, Strategic Relations  
Date: May 7, 2019

**PHATHOM PHARMACEUTICALS, INC.**

By: /s/ David Socks  
Name: David Socks  
Title: President and Chief Executive Officer  
Date: May 7, 2019

**SIGNATURE PAGE TO LICENSE AGREEMENT**

**LOAN AND SECURITY AGREEMENT**

**THIS LOAN AND SECURITY AGREEMENT** (this “Agreement”) dated as of May 14, 2019 (the “**Effective Date**”), among (a) **SILICON VALLEY BANK**, a California corporation (“**SVB**”), in its capacity as administrative agent and collateral agent (“**Agent**”), (b) **SILICON VALLEY BANK**, a California corporation, as a lender, (c) **WESTRIVER INNOVATION LENDING FUND VIII, L.P.**, a Delaware limited partnership (“**WestRiver**”), as a lender (SVB and WestRiver and each of the other “**Lenders**” from time to time a party hereto are referred to herein collectively as the “**Lenders**” and each individually as a “**Lender**”), and (d) **PHATHOM PHARMACEUTICALS, INC.**, a Delaware corporation (“**Borrower**”), provides the terms on which Agent and the Lenders shall lend to Borrower, and Borrower shall repay Agent and the Lenders. The parties agree as follows:

**1     ACCOUNTING AND OTHER TERMS**

Accounting terms not defined in this Agreement shall be construed following GAAP. Calculations and determinations must be made following GAAP. Capitalized terms not otherwise defined in this Agreement shall have the meanings set forth in Section 14 of this Agreement. All other terms contained in this Agreement, unless otherwise indicated, shall have the meaning provided by the Code to the extent such terms are defined therein.

**2     LOAN AND TERMS OF PAYMENT**

**2.1 Promise to Pay.** Borrower hereby unconditionally promises to pay to Agent, for the ratable benefit of each Lender, the outstanding principal amount of all Credit Extensions advanced to Borrower by such Lender and accrued and unpaid interest thereon, together with any fees as and when due in accordance with this Agreement.

**2.2 Term Loan Advances.**

(a) Availability. Subject to the terms and conditions of this Agreement, upon Borrower’s request, the Lenders, severally and not jointly, shall make one (1) term loan advance to Borrower on or about the Effective Date in an original principal amount of Twenty-Five Million Dollars (\$25,000,000.00) according to each Lender’s Term Loan Commitment as set forth on Schedule 1 hereto (the “**Term A Loan Advance**”). Subject to the terms and conditions of this Agreement, upon Borrower’s request, during the Draw Period, the Lenders, severally and not jointly, shall make one (1) term loan advance available to Borrower in an original principal amount of Twenty-Five Million Dollars (\$25,000,000.00) according to each Lender’s Term Loan Commitment as set forth on Schedule 1 hereto (the “**Term B Loan Advance**”). The Term A Loan Advance and the Term B Loan Advance are hereinafter referred to singly as the “**Term Loan Advance**” and collectively as the “**Term Loan Advances**”. After repayment, no Term Loan Advance (or any portion thereof) may be reborrowed.

(b) Interest Payments. With respect to each Term Loan Advance, commencing on the first (1<sup>st</sup>) Payment Date following the Funding Date of such Term Loan Advance and continuing on the Payment Date of each month thereafter until the Term Loan Amortization Date, Borrower shall make monthly payments of accrued and unpaid interest to Agent, for the account of the Lenders, in arrears, on the outstanding principal amount of each Term Loan Advance, at the rate set forth in Section 2.3(a).

(c) Repayment of the Term Loan Advances. Commencing on the Term Loan Amortization Date, and continuing on each Payment Date thereafter, Borrower shall repay the aggregate outstanding Term Loan Advances to Agent, for the account of the Lenders, in (i) consecutive equal monthly installments of principal based on the Repayment Schedule, plus (ii) monthly payments of accrued and unpaid interest on the outstanding principal amount of each Term Loan Advance at the rate set forth in Section 2.3(a). All outstanding principal and accrued and unpaid interest with respect to the Term Loan Advances, and all other outstanding Obligations under the Term Loan Advances, are due and payable in full on the Term Loan Maturity Date.

(d) Permitted Prepayment. Borrower shall have the option to prepay all or a portion of the Term Loan Advances advanced by the Lenders under this Agreement, provided that any such prepayment shall be in an amount of at least Ten Million Dollars (\$10,000,000.00), provided further that Borrower (i) delivers written notice to Agent of its election to prepay the Term Loan Advances at least thirty (30) days prior to such prepayment, and (ii)

pays to Agent, for the account of the Lenders in accordance with its respective Pro Rata Share, on the date of such prepayment (A) such portion of the outstanding principal plus accrued and unpaid interest with respect to the Term Loan Advances, (B) the Prepayment Premium, (C) the pro rata portion of the Final Payment corresponding with the portion of the Term Loan Advances being prepaid and (D) all other sums, if any, that shall have become due and payable with respect to the Term Loan Advances, including Lenders' Expenses and interest at the Default Rate with respect to any past due amounts. Notwithstanding any terms in this Agreement to the contrary, any partial prepayment of principal on account of the Term Loan Advances shall be applied pro rata (as reasonably calculated by Agent) to any scheduled payments of principal owed thereafter on account of the Term Loan Advances, and in such event the amount of each installment of principal required under Section 2.2(c) with respect to the Term Loan Advances shall be recalculated by Agent to account for such pro rata application.

(e) Mandatory Prepayment Upon an Acceleration. If the Term Loan Advances are accelerated by Agent pursuant to Section 9.1 hereof, following the occurrence and during the continuance of an Event of Default, Borrower shall immediately pay to Agent, for the account of the Lenders in accordance with its respective Pro Rata Share, an amount equal to the sum of (i) all outstanding principal plus accrued and unpaid interest with respect to the Term Loan Advances, (ii) the Prepayment Premium, (iii) the Final Payment and (iv) all other sums, if any, that shall have become due and payable with respect to the Term Loan Advances, including Lenders' Expenses and interest at the Default Rate with respect to any past due amounts.

### 2.3 Payment of Interest on the Credit Extensions.

(a) Interest Rate. Subject to Section 2.3(b), the principal amount outstanding under each Term Loan Advance shall accrue interest at a floating per annum rate equal to the greater of (i) seven and one-quarter of one percent (7.25%) and (ii) one and three-quarters of one percent (1.75%) above the Prime Rate, which interest, in each case, shall be payable monthly in accordance with Section 2.3(d) below.

(b) Default Rate. Immediately upon the occurrence and during the continuance of an Event of Default, Obligations shall bear interest at a rate per annum which is four percent (4.0%) above the rate that is otherwise applicable thereto (the "**Default Rate**") unless Agent otherwise elects from time to time in its sole discretion to impose a smaller increase. Fees and expenses which are required to be paid by Borrower pursuant to the Loan Documents (including, without limitation, Lenders' Expenses) but are not paid when due shall bear interest until paid at a rate equal to the highest rate applicable to the Obligations. Payment or acceptance of the increased interest rate provided in this Section 2.3(b) is not a permitted alternative to timely payment and shall not constitute a waiver of any Event of Default or otherwise prejudice or limit any rights or remedies of Agent or any Lender.

(c) Adjustment to Interest Rate. Changes to the interest rate of any Credit Extension based on changes to the Prime Rate shall be effective on the effective date of any change to the Prime Rate and to the extent of any such change.

(d) Payment; Interest Computation. Interest is payable monthly on the Payment Date of each month and shall be computed on the basis of a 360-day year for the actual number of days elapsed. In computing interest, (i) all payments received after 12:00 p.m. Pacific time on any day shall be deemed received at the opening of business on the next Business Day, and (ii) the date of the making of any Credit Extension shall be included and the date of payment shall be excluded; provided, however, that if any Credit Extension is repaid on the same day on which it is made, such day shall be included in computing interest on such Credit Extension.

### 2.4 Fees. Borrower shall pay to Agent:

(a) Final Payment. The Final Payment, when due hereunder, to be shared between the Lenders pursuant to their respective Term Loan Commitment Percentages;

(b) Prepayment Premium. The Prepayment Premium, when due hereunder, to be shared between the Lenders pursuant to their respective Term Loan Commitment Percentages; and

(c) **Lenders' Expenses.** All Lenders' Expenses (including reasonable and documented attorneys' fees and expenses for documentation and negotiation of this Agreement) incurred through and after the Effective Date, when due (or, if no stated due date, upon demand by Agent).

Unless otherwise provided in this Agreement or in a separate writing by Agent, Borrower shall not be entitled to any credit, rebate, or repayment of any fees earned by Agent or any Lender pursuant to this Agreement notwithstanding any termination of this Agreement or the suspension or termination of any Lender's obligation to make loans and advances hereunder. Agent may deduct amounts owing by Borrower under the clauses of this Section 2.4 pursuant to the terms of Section 2.5(e). Agent shall provide Borrower written notice of deductions made from the Designated Deposit Account pursuant to the terms of the clauses of this Section 2.4.

**2.5 Payments; Pro Rata Treatment; Application of Payments; Debit of Accounts.**

(a) All payments (including prepayments) to be made by Borrower under any Loan Document shall be made to Agent for the account of Lenders, in immediately available funds in Dollars, without setoff or counterclaim, before 12:00 p.m. Pacific time on the date when due. Agent shall distribute such payments to Lenders in like funds as set forth in Section 2.6. Payments of principal and/or interest received after 12:00 p.m. Pacific time are considered received at the opening of business on the next Business Day. When a payment is due on a day that is not a Business Day, the payment shall be due the next Business Day, and additional fees or interest, as applicable, shall continue to accrue until paid.

(b) Each borrowing by Borrower from Lenders hereunder shall be made according to the respective Term Loan Commitment Percentages of the relevant Lenders.

(c) Except as otherwise provided herein, each payment (including each prepayment) by Borrower on account of principal or interest on the Term Loan Advances shall be applied according to each Lender's Pro Rata Share of the outstanding principal amount of the Term Loan Advances. The amount of each principal prepayment of the Term Loan Advances shall be applied to reduce the then remaining installments of the Term Loan Advances based upon each Pro Rata Share of Term Loan Advances.

(d) Prior to the occurrence of an Event of Default, payments shall be applied as directed by Borrower. Upon the occurrence and during the continuance of an Event of Default, Agent has the exclusive right to determine the order and manner in which all payments with respect to the Obligations may be applied. Borrower shall have no right to specify the order or the accounts to which Agent shall allocate or apply any payments required to be made by Borrower to Agent or otherwise received by Agent or any Lender under this Agreement when any such allocation or application is not specified elsewhere in this Agreement.

(e) Agent may debit the Designated Deposit Account and, to the extent sufficient funds are not present in the Designated Deposit Account at the time of such debit, any of Borrower's deposit accounts, for principal and interest payments or any other amounts Borrower owes Agent or any Lender when due. These debits shall not constitute a set-off.

(f) Unless Agent shall have been notified in writing by Borrower prior to the date of any payment due to be made by Borrower hereunder that Borrower will not make such payment to Agent, Agent may assume that Borrower is making such payment, and Agent may, but shall not be required to, in reliance upon such assumption, make available to Lenders their respective Pro Rata Share of a corresponding payment amount. If such payment is not made to Agent by Borrower within three (3) Business Days after such due date, Agent shall be entitled to recover, on demand, from each Lender to which any amount which was made available pursuant to the preceding sentence, such amount with interest thereon at the rate per annum equal to the daily average Federal Funds Effective Rate. Nothing herein shall be deemed to limit the rights of Agent or any Lender against Borrower.

**2.6 Settlement Procedures.** If Agent receives any payment for the account of Lenders on or prior to 12:00 p.m. (Pacific time) on any Business Day, Agent shall pay to each applicable Lender such Lender's Pro Rata Share of such payment on such Business Day. If Agent receives any payment for the account of Lenders after 12:00

p.m. (Pacific time) on any Business Day, Agent shall pay to each applicable Lender such Lender's Pro Rata Share of such payment on the next Business Day.

## 2.7 Taxes.

(a) For purposes of this Section 2.7, the term "applicable law" includes FATCA.

(b) Any and all payments by or on account of any obligation of Borrower under any Loan Document shall be made without deduction or withholding for any Taxes, except as required by applicable law. If any applicable law requires the deduction or withholding of any Tax from any such payment by a Withholding Agent, then the applicable Withholding Agent shall be entitled to make such deduction or withholding and shall timely pay the full amount deducted or withheld to the relevant Governmental Authority in accordance with applicable law and, if such Tax is an Indemnified Tax, then the sum payable by Borrower shall be increased as necessary so that after such deduction or withholding has been made (including such deductions and withholdings applicable to additional sums payable under this Section 2.7(b)), the applicable Recipient receives an amount equal to the sum it would have received had no such deduction or withholding been made.

(c) Borrower shall timely pay to the relevant Governmental Authority in accordance with applicable law, or at the option of Agent timely reimburse it for the payment of, any Other Taxes.

(d) Borrower shall indemnify each Recipient within ten (10) days after demand therefor, for the full amount of any Indemnified Taxes (including Indemnified Taxes imposed or asserted on or attributable to amounts payable under this Section 2.7(d)) payable or paid by such Recipient or required to be withheld or deducted from a payment to such Recipient and any reasonable expenses arising therefrom or with respect thereto, whether or not such Indemnified Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. A certificate as to the amount of such payment or liability delivered to Borrower by a Lender (with a copy to the Agent), or by the Agent on its own behalf or on behalf of a Lender, shall be conclusive absent manifest error.

(e) Each Lender shall severally indemnify Agent, within ten (10) days after demand therefor, for (i) any Indemnified Taxes attributable to such Lender (but only to the extent that Borrower has not already indemnified Agent for such Indemnified Taxes and without limiting the obligation of Borrower to do so) and (ii) any Excluded Taxes attributable to such Lender, in each case, that are payable or paid by Agent in connection with any Loan Document, and any reasonable expenses arising therefrom or with respect thereto, whether or not such Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. A certificate as to the amount of such payment or liability delivered to any Lender by Agent shall be conclusive absent manifest error. Each Lender hereby authorizes Agent to set off and apply any and all amounts at any time owing to such Lender under any Loan Document or otherwise payable by Agent to the Lender from any other source against any amount due to Agent under this paragraph (e).

(f) As soon as practicable after any payment of Taxes by Borrower to a Governmental Authority pursuant to this Section 2.7, Borrower shall deliver to Agent the original or a certified copy of a receipt issued by such Governmental Authority evidencing such payment, a copy of the return reporting such payment or other evidence of such payment reasonably satisfactory to Agent.

(g) Status of Lenders.

(i) Any Lender that is entitled to an exemption from or reduction of withholding Tax with respect to payments made under any Loan Document, shall deliver to Borrower and Agent, at the time or times reasonably requested by Borrower or Agent, such properly completed and executed documentation reasonably requested by Borrower or Agent as will permit such payments to be made without withholding or at a reduced rate of withholding. In addition, any Lender, if reasonably requested by Borrower or Agent, shall deliver such other documentation prescribed by applicable law or reasonably requested by Borrower or Agent as will enable Borrower or Agent to determine whether or not such Lender is subject to backup withholding or information reporting requirements. Notwithstanding anything to the contrary in the preceding



two sentences, the completion, execution and submission of such documentation (other than such documentation set forth below in subparagraphs (ii)(A), (ii)(B) and (ii)(D) of this Section 2.7(g)) shall not be required if in the Lender's reasonable judgment such completion, execution or submission would subject such Lender to any material unreimbursed cost or expense or would materially prejudice the legal or commercial position of such Lender.

(ii) Without limiting the generality of the foregoing,

(A) if requested by Borrower or Agent, any Lender that is a U.S. Person shall deliver to Borrower and Agent on or prior to the date on which such Lender becomes a Lender under this Agreement (and from time to time thereafter upon the reasonable request of Borrower or Agent), executed copies of IRS Form W-9 certifying that such Lender is exempt from U.S. federal backup withholding tax;

(B) any Foreign Lender shall, to the extent it is legally entitled to do so, deliver to Borrower and Agent (in such number of copies as shall be requested by the recipient) on or prior to the date on which such Foreign Lender becomes a Lender under this Agreement (and from time to time thereafter upon the reasonable request of Borrower or Agent), executed copies of the applicable IRS Form W-8, duly completed, together with such supplementary documentation as may be prescribed by applicable law (or reasonably requested by Borrower, including a customary "non-bank" certificate) to permit Borrower or Agent to determine the withholding or deduction required to be made;

(C) any Foreign Lender shall, to the extent it is legally entitled to do so, deliver to Borrower and Agent (in such number of copies as shall be requested by the recipient) on or prior to the date on which such Foreign Lender becomes a Lender under this Agreement (and from time to time thereafter upon the reasonable request of Borrower or Agent), executed copies of any other form prescribed by applicable law as a basis for claiming exemption from or a reduction in U.S. federal withholding Tax, duly completed, together with such supplementary documentation as may be prescribed by applicable law to permit Borrower or Agent to determine the withholding or deduction required to be made; and

(D) if a payment made to any Lender under any Loan Document would be subject to U.S. federal withholding Tax imposed by FATCA if such Recipient were to fail to comply with the applicable reporting requirements of FATCA (including those contained in Section 1471(b) or 1472(b) of the Internal Revenue Code, as applicable), such Lender shall deliver to Borrower and Agent at the time or times prescribed by law and at such time or times reasonably requested by Borrower or Agent such documentation prescribed by applicable law (including as prescribed by Section 1471(b)(3)(C)(i) of the Internal Revenue Code) and such additional documentation reasonably requested by the Borrower or the Agent as may be necessary for Borrower or Agent to comply with their obligations under FATCA and to determine that such Lender has complied with such Lender's obligations under FATCA or to determine the amount, if any, to deduct and withhold from such payment. Solely for purposes of this clause (D), "FATCA" shall include any amendments made to FATCA after the date of this Agreement.

Each Lender agrees that if any form or certification it previously delivered expires or becomes obsolete or inaccurate in any respect, it shall update such form or certification or promptly notify Borrower and Agent in writing of its legal inability to do so.

(h) If any party determines, in its sole discretion exercised in good faith, that it has received a refund of any Taxes as to which it has been indemnified pursuant to this Section 2.7 (including by the payment of additional amounts pursuant to this Section 2.7), it shall pay to the indemnifying party an amount equal to such refund

(but only to the extent of indemnity payments made under this Section 2.7 with respect to the Taxes giving rise to such refund), net of all out-of-pocket expenses (including Taxes) of such indemnified party and without interest (other than any interest paid by the relevant Governmental Authority with respect to such refund). Such indemnifying party, upon the request of such indemnified party, shall repay to such indemnified party the amount paid over pursuant to this paragraph (h) (plus any penalties, interest or other charges imposed by the relevant Governmental Authority) in the event that such indemnified party is required to repay such refund to such Governmental Authority. Notwithstanding anything to the contrary in this paragraph (h), in no event will the indemnified party be required to pay any amount to an indemnifying party pursuant to this paragraph (h) the payment of which would place the indemnified party in a less favorable net after-Tax position than the indemnified party would have been in if the Tax subject to indemnification and giving rise to such refund had not been deducted, withheld or otherwise imposed and the indemnification payments or additional amounts with respect to such Tax had never been paid. This paragraph shall not be construed to require any indemnified party to make available its Tax returns (or any other information relating to its Taxes that it deems confidential) to the indemnifying party or any other Person.

(i) Survival. Each party's obligations under this Section 2.7 shall survive the resignation or replacement of the Agent or any assignment of rights by, or the replacement of, a Lender, termination of this Agreement and the Loan Documents, and the repayment, satisfaction or discharge of all obligations under any Loan Document.

### **3 CONDITIONS OF LOANS**

**3.1 Conditions Precedent to Initial Credit Extension.** Each Lender's obligation to make the initial Credit Extension hereunder is subject to the condition precedent that Agent shall have received, in form and substance satisfactory to Agent and the Lenders, such documents, and completion of such other matters, as Agent may reasonably deem necessary or appropriate, including, without limitation:

(a) duly executed signatures to the Loan Documents;

(b) duly executed original signatures to the Warrant;

(c) the Operating Documents and long-form good standing certificates of Borrower certified by the Secretary of State of Delaware and each jurisdiction in which Borrower is qualified to conduct business, each as of a date no earlier than thirty (30) days prior to the Effective Date;

(d) a secretary's corporate borrowing certificate of Borrower with respect to Borrower's Operating Documents, incumbency and resolutions authorizing the execution and delivery of this Agreement and the other Loan Documents;

(e) duly executed signatures to the completed Borrowing Resolutions for Borrower;

(f) a subordination agreement from the creditors in connection with the Subordinated Debt Event in favor of Agent and the Lenders, together with the duly executed signatures thereto;

(g) certified copies, dated as of a recent date, of financing statement searches, as Agent may request, accompanied by written evidence (including any UCC termination statements) that the Liens indicated in any such financing statements either constitute Permitted Liens or have been or, in connection with the initial Credit Extension, will be terminated or released;

(h) the Perfection Certificate of Borrower, together with the duly executed signature thereto;

(i) evidence that the Subordinated Debt Event has occurred;

(j) evidence satisfactory to Agent that the insurance policies required by Section 6.5 hereof are in full force and effect; and

(k) payment of the fees and Lenders' Expenses then due as specified in Section 2.4 hereof.

**3.2 Conditions Precedent to all Credit Extensions.** Each Lender's obligation to make each Credit Extension, including the initial Credit Extension, is subject to the following conditions precedent:

(a) timely receipt by the Lenders of (i) an executed Disbursement Letter; and (ii) an executed Payment/Advance Form and any materials and documents required by Section 3.4;

(b) the representations and warranties in this Agreement shall be true, accurate, and complete in all material respects on the date of the Disbursement Letter (and the Payment/Advance Form) and on the Funding Date of each Credit Extension; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date, and no Event of Default shall have occurred and be continuing or result from the Credit Extension. Each Credit Extension is Borrower's representation and warranty on that date that the representations and warranties in this Agreement are true, accurate, and complete in all material respects as of such date; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date; and

(c) Agent and each Lender determine to its reasonable satisfaction that there has not been a Material Adverse Change.

**3.3 Covenant to Deliver.** Borrower agrees to deliver to Agent and each Lender each item required to be delivered to Agent and each Lender under this Agreement as a condition precedent to any Credit Extension. Borrower expressly agrees that a Credit Extension made prior to the receipt by Agent and each Lender of any such item shall not constitute a waiver by Agent or Lenders of Borrower's obligation to deliver such item, and the making of any Credit Extension in the absence of a required item shall be in each Lender's sole discretion.

### **3.4 Procedures for Borrowing.**

(a) Term Loan Advances. Subject to the prior satisfaction of all other applicable conditions to the making of a Credit Extension set forth in this Agreement, to obtain a Credit Extension, Borrower shall notify Agent (which notice shall be irrevocable) by electronic mail, facsimile, or telephone by 12:00 p.m. Pacific time at least five (5) Business Days before the proposed Funding Date of such Credit Extension. Together with any such electronic or facsimile notification, Borrower shall deliver to Agent by electronic mail or facsimile a completed Disbursement Letter (and Payment/Advance Form) executed by an Authorized Signer. Agent may rely on any telephone notice given by a person whom Agent reasonably believes is an Authorized Signer. On the Funding Date, Agent shall credit the Credit Extensions to the Designated Deposit Account. Agent may make Credit Extensions under this Agreement based on instructions from an Authorized Signer or without instructions if the Credit Extensions are necessary to meet Obligations which have become due.

(b) Funding. In determining compliance with any condition hereunder to the making of a Credit Extension that, by its terms, must be fulfilled to the satisfaction of a Lender, Agent may presume that such condition is satisfactory to such Lender unless Agent shall have received notice to the contrary from such Lender prior to the making of such Credit Extension. Unless Agent shall have been notified in writing by any Lender prior to the date of any Credit Extension, that such Lender will not make the amount that would constitute its share of such borrowing available to Agent, Agent may assume that such Lender is making such amount available to Agent, and Agent may, in reliance upon such assumption, make available to Borrower a corresponding amount. If such amount is not made available to Agent by the required time on the Funding Date therefor, such Lender shall pay to Agent, on demand, such amount with interest thereon, at a rate equal to the greater of (i) the Federal Funds Effective Rate or (ii) a rate determined by Agent in accordance with banking industry rules on interbank compensation, for the period until such Lender makes such amount immediately available to Agent. If such Lender's share of such Credit Extension is not made available to Agent by such Lender within five (5) Business Days after such Funding Date, Agent shall also

be entitled to recover such amount with interest thereon at the rate per annum applicable to the Term Loan Advances, on demand, from Borrower.

#### **4 CREATION OF SECURITY INTEREST**

**4.1 Grant of Security Interest.** Borrower hereby grants Agent, for the ratable benefit of the Lenders, to secure the payment and performance in full of all of the Obligations, a continuing security interest in, and pledges to Agent, for the ratable benefit of the Lenders, the Collateral, wherever located, whether now owned or hereafter acquired or arising, and all proceeds and products thereof. For clarity, any reference to “Agent’s Lien” or any granting of collateral to Agent in this Agreement or any Loan Document means the Lien granted to Agent for the ratable benefit of the Lenders.

Borrower acknowledges that it previously has entered, and/or may in the future enter, into Bank Services Agreements with SVB. Regardless of the terms of any Bank Services Agreement, Borrower agrees that any amounts Borrower owes SVB thereunder shall be deemed to be Obligations hereunder and that it is the intent of Borrower and SVB to have all such Obligations secured by the first priority perfected security interest in the Collateral granted herein (subject only to Permitted Liens that are permitted pursuant to the terms of this Agreement to have superior priority to Agent’s Lien in this Agreement).

If this Agreement is terminated, Agent’s Lien in the Collateral shall continue until the Obligations (other than inchoate indemnity obligations) are repaid in full in cash. Upon payment in full in cash of the Obligations (other than inchoate indemnity obligations) and at such time as the Lenders’ obligation to make Credit Extensions has terminated, Agent shall, at the sole cost and expense of Borrower, release its Liens in the Collateral and all rights therein shall revert to Borrower. In the event (x) all Obligations (other than inchoate indemnity obligations), except for Bank Services, are satisfied in full, and (y) this Agreement is terminated, Agent shall terminate the security interest granted herein upon Borrower providing to SVB cash collateral acceptable to SVB in its good faith business judgment for Bank Services, if any. In the event such Bank Services consist of outstanding Letters of Credit, Borrower shall provide to SVB cash collateral in an amount equal to (x) if such Letters of Credit are denominated in Dollars, then at least one hundred five percent (105.0%); and (y) if such Letters of Credit are denominated in a Foreign Currency, then at least one hundred ten percent (110.0%), of the Dollar Equivalent of the face amount of all such Letters of Credit plus, in each case, all interest, fees, and costs due or to become due in connection therewith (as estimated by SVB in its good faith business judgment), to secure all of the Obligations relating to such Letters of Credit.

**4.2 Priority of Security Interest.** Borrower represents, warrants, and covenants that the security interests granted herein are and shall at all times continue to be a first priority perfected security interests in the Collateral (subject only to Permitted Liens that are permitted pursuant to the terms of this Agreement to have superior priority to Agent’s Lien under this Agreement). If Borrower shall acquire a commercial tort claim, Borrower shall promptly notify Agent in a writing signed by Borrower of the general details thereof and grant to Agent, for the ratable benefit of the Lenders, in such writing a security interest therein and in the proceeds thereof, all upon the terms of this Agreement, with such writing to be in form and substance reasonably satisfactory to Agent.

**4.3 Authorization to File Financing Statements.** Borrower hereby authorizes Agent, on behalf of the Lenders, to file financing statements, without notice to Borrower, with all appropriate jurisdictions to perfect or protect Agent’s and Lenders’ interest or rights hereunder.

#### **5 REPRESENTATIONS AND WARRANTIES**

Borrower represents and warrants as follows:

**5.1 Due Organization, Authorization; Power and Authority.** Borrower is duly existing and in good standing as a Registered Organization in its jurisdiction of formation and is qualified and licensed to do business and is in good standing in any jurisdiction in which the conduct of its business or its ownership of property requires that it be qualified except where the failure to do so could not reasonably be expected to have a material adverse effect on Borrower’s business. In connection with this Agreement, Borrower has delivered to Agent and each Lender a completed certificate signed by Borrower, entitled “Perfection Certificate” (the “**Perfection Certificate**”) (it being understood and agreed that Borrower may from time to time update certain information in the Perfection Certificate

after the Effective Date to the extent permitted by one or more specific provisions of this Agreement, and all references in this Agreement to “Perfection Certificate” shall hereinafter be deemed to be a reference to the new Perfection Certificate). Borrower represents and warrants to Agent and each Lender that (a) Borrower’s exact legal name is that indicated on the Perfection Certificate and on the signature page hereof; (b) Borrower is an organization of the type and is organized in the jurisdiction set forth in the Perfection Certificate; (c) the Perfection Certificate accurately sets forth Borrower’s organizational identification number or accurately states that Borrower has none; (d) the Perfection Certificate accurately sets forth Borrower’s place of business, or, if more than one, its chief executive office as well as Borrower’s mailing address (if different than its chief executive office); (e) Borrower (and each of its predecessors) has not, in the past five (5) years, changed its jurisdiction of formation, organizational structure or type, or any organizational number assigned by its jurisdiction; and (f) all other information set forth on the Perfection Certificate pertaining to Borrower and each of its Subsidiaries is accurate and complete in all material respects (it being understood and agreed that Borrower may from time to time update certain information in the Perfection Certificate after the Effective Date to the extent permitted by one or more specific provisions in this Agreement). If Borrower is not now a Registered Organization but later becomes one, Borrower shall promptly notify Agent of such occurrence and provide Agent with Borrower’s organizational identification number.

The execution, delivery and performance by Borrower of the Loan Documents to which it is a party have been duly authorized, and do not (i) conflict with any of Borrower’s organizational documents, (ii) contravene, conflict with, constitute a default under or violate any material Requirement of Law, (iii) contravene, conflict or violate any applicable material order, writ, judgment, injunction, decree, determination or award of any Governmental Authority by which Borrower or any of its Subsidiaries or any of their property or assets may be bound or affected, (iv) require any action by, filing, registration, or qualification with, or Governmental Approval from, any Governmental Authority (except such Governmental Approvals which have already been obtained and are in full force and effect (or are being obtained pursuant to Section 6.1(b))), or (v) conflict with, contravene, constitute a default or breach under, or result in or permit the termination or acceleration of, any material agreement by which Borrower is bound. Borrower is not in default under any agreement to which it is a party or by which it is bound in which the default could reasonably be expected to have a material adverse effect on Borrower’s business.

**5.2 Collateral.** Borrower has good title to, rights in, and the power to transfer each item of the Collateral upon which it purports to grant a Lien hereunder, free and clear of any and all Liens except Permitted Liens. Borrower has no Collateral Accounts at or with any bank or financial institution other than SVB or SVB’s Affiliates except for the Collateral Accounts described in the Perfection Certificate delivered to Agent and the Lenders in connection herewith and which Borrower has taken such actions as are necessary to give Agent, for the ratable benefit of the Lenders, a perfected security interest therein, pursuant to the terms of Section 6.6(b). The Accounts are bona fide, existing obligations of the Account Debtors.

The Collateral is not in the possession of any third party bailee (such as a warehouse) except as otherwise provided in the Perfection Certificate or as permitted pursuant to Section 7.2. None of the components of the Collateral shall be maintained at locations other than as provided in the Perfection Certificate or as permitted pursuant to Section 7.2.

All Inventory is in all material respects of good and marketable quality, free from material defects.

Borrower is the sole owner of the Intellectual Property (other than Intellectual Property which is immaterial to Borrower’s business) which it owns or purports to own except for (a) licenses permitted hereunder, (b) over-the-counter software that is commercially available to the public, and (c) material Intellectual Property licensed to Borrower in the ordinary course of business and noted on the Perfection Certificate or by giving notice in accordance with this Agreement. Each Patent which it owns or purports to own and which is material to Borrower’s business is valid and enforceable, and no part of the Intellectual Property which Borrower owns or purports to own and which is material to Borrower’s business has, to the best of its knowledge, been judged invalid or unenforceable, in whole or in part. To the best of Borrower’s knowledge, no claim has been made that any part of the Intellectual Property violates the rights of any third party except to the extent such claim would not reasonably be expected to have a material adverse effect on Borrower’s business.

Except as noted on the Perfection Certificate or as disclosed pursuant to Section 6.7(b), Borrower is not a party to, nor is bound by, any Restricted License.

**5.3 Litigation.** Other than those of which Borrower has notified Agent pursuant to Section 6.2(g), there are no actions or proceedings pending or, to the knowledge of any Responsible Officer, threatened in writing by or against Borrower or any of its Subsidiaries involving more than, individually or in the aggregate, Five Hundred Thousand Dollars (\$500,000.00).

**5.4 Financial Statements; Financial Condition.** All consolidated financial statements for Borrower and any of its Subsidiaries delivered to Agent and the Lenders fairly present in all material respects Borrower's consolidated financial condition and Borrower's consolidated results of operations. Other than as disclosed in writing to Agent, there has not been any material deterioration in Borrower's consolidated financial condition since the date of the most recent financial statements submitted to Agent and the Lenders.

**5.5 Solvency.** The fair salable value of Borrower's consolidated assets (including goodwill minus disposition costs) exceeds the fair value of Borrower's liabilities; Borrower is not left with unreasonably small capital after the transactions in this Agreement; and Borrower is able to pay its debts (including trade debts) as they mature.

**5.6 Regulatory Compliance.** Borrower is not an "investment company" or a company "controlled" by an "investment company" under the Investment Company Act of 1940, as amended. Borrower is not engaged as one of its important activities in extending credit for margin stock (under Regulations X, T and U of the Federal Reserve Board of Governors). Borrower (a) has complied in all material respects with all Requirements of Law, and (b) has not violated any Requirements of Law the violation of which could reasonably be expected to have a material adverse effect on its business. None of Borrower's or any of its Subsidiaries' properties or assets has been used by Borrower or any Subsidiary or, to the best of Borrower's knowledge, by previous Persons, in disposing, producing, storing, treating, or transporting any hazardous substance other than legally. Borrower and each of its Subsidiaries have obtained all consents, approvals and authorizations of, made all declarations or filings with, and given all notices to, all Governmental Authorities that are necessary to continue their respective businesses as currently conducted, except to the extent the failure to do so would not reasonably be expected to have a material adverse effect on Borrower's business or operations.

**5.7 Subsidiaries; Investments.** Borrower does not own any stock, partnership, or other ownership interest or other equity securities except for Permitted Investments.

**5.8 Tax Returns and Payments; Pension Contributions.** Borrower and its Subsidiaries have timely filed (i) all required foreign, federal, and state Tax returns and reports and (ii) all required local Tax returns and reports, except with respect to Taxes not exceeding Fifty Thousand Dollars (\$50,000.00) individually or in the aggregate, and (b) timely paid all foreign, federal, state and local Taxes, assessments, deposits and contributions owed, except (x) to the extent such Taxes are being contested in good faith by appropriate proceedings promptly instituted and diligently conducted, so long as such reserve or other appropriate provision, if any, as shall be required in conformity with GAAP shall have been made therefor, or (y) if such Taxes, assessments, deposits and contributions do not, individually or in the aggregate, exceed Two Hundred Fifty Thousand Dollars (\$250,000.00).

To the extent Borrower defers payment of any contested Taxes, Borrower shall (i) notify Agent in writing of the commencement of, and any material development in, the proceedings, and (ii) post bonds or take any other steps required to prevent the Governmental Authority levying such contested Taxes from obtaining a Lien upon any of the Collateral that is other than a "Permitted Lien." Borrower is unaware of any claims or adjustments proposed for any of Borrower's prior tax years which could reasonably be expected to result in additional Taxes becoming due and payable by Borrower in excess of Two Hundred Fifty Thousand Dollars (\$250,000.00). If and to the extent applicable, Borrower has paid all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms, and Borrower has not withdrawn from participation in, and has not permitted partial or complete termination of, or permitted the occurrence of any other event with respect to, any such plan which could reasonably be expected to result in any liability of Borrower, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

**5.9 Use of Proceeds.** Borrower shall use the proceeds of the Credit Extensions as working capital and to fund its general business requirements and not for personal, family, household or agricultural purposes.

**5.10 Full Disclosure.** No written representation, warranty or other statement of Borrower in any certificate or written statement given to Agent or any Lender in connection with the Loan Documents or the transactions contemplated thereby, as of the date such representation, warranty, or other statement was made, taken together with all such written certificates and written statements given to Agent or any Lender, contains any untrue statement of a material fact or omits to state a material fact necessary to make the statements contained in the certificates or statements, in light of the circumstances in which they were made, not misleading (it being recognized by Agent and each Lender that the projections and forecasts provided by Borrower in good faith and based upon reasonable assumptions are not viewed as facts and that actual results during the period or periods covered by such projections and forecasts may differ from the projected or forecasted results).

**5.11 Definition of "Knowledge."** For purposes of the Loan Documents, whenever a representation or warranty is made to Borrower's knowledge or awareness, to the "best of" Borrower's knowledge, or with a similar qualification, knowledge or awareness means the actual knowledge, after reasonable investigation, of any Responsible Officer.

## **6 AFFIRMATIVE COVENANTS**

Borrower shall do all of the following:

### **6.1 Government Compliance.**

(a) Maintain its and (except as permitted by Section 7.3) all its Subsidiaries' legal existence and good standing in their respective jurisdictions of formation and maintain qualification in each jurisdiction in which the failure to so qualify would reasonably be expected to have a material adverse effect on Borrower's business or operations. Borrower shall comply, and have each Subsidiary comply, in all material respects, with all material laws, ordinances and regulations to which it is subject.

(b) Obtain all of the Governmental Approvals necessary for the performance by Borrower of its obligations under the Loan Documents to which it is a party and the grant of a security interest to Agent, for the ratable benefit of the Lenders, in all of the Collateral. Borrower shall promptly provide copies of any such obtained Governmental Approvals to Agent.

### **6.2 Financial Statements, Reports, Certificates.** Provide Agent and each Lender with the following:

(a) Financial Statements. As soon as available, but no later than thirty (30) days after the last day of each month, a company prepared consolidated balance sheet and income statement covering Borrower's consolidated operations for such month certified by a Responsible Officer and in a form of presentation reasonably acceptable to Agent (the "**Financial Statements**"); provided, however, upon the occurrence of an IPO, Borrower shall provide the Financial Statements for each of the first three fiscal quarters of each fiscal year of Borrower as soon as available, but no later than forty-five (45) days after the last day of each fiscal quarter of Borrower consistent with such quarterly financial statements submitted to the SEC; provided that Borrower shall deliver the Financial Statements for the last fiscal quarter of each fiscal year of Borrower within ninety (90) days after the end of such fiscal quarter;

(b) Compliance Certificate. Within thirty (30) days after the last day of each month and together with the Financial Statements, a duly completed Compliance Certificate signed by a Responsible Officer, certifying that as of the end of such month, Borrower was in full compliance with all of the terms and conditions of this Agreement, and setting forth calculations showing compliance with the financial covenants (if any) set forth in this Agreement and such other information as Agent or the Lenders may reasonably request; provided, however, upon the occurrence of an IPO, Borrower shall provide the Compliance Certificate within forty-five (45) days after the last day of each of the first three fiscal quarters of each fiscal year of Borrower and together with the Financial Statements, provided that Borrower shall deliver the Compliance Certificate for the last fiscal quarter of each fiscal year of Borrower within ninety (90) days after the end of such fiscal quarter;

(c) Board Projections. At least annually, and in any event no later than within sixty (60) days after the end of each fiscal year of Borrower, and within seven (7) days after any updates or changes thereto, annual Board-approved operating budget and financial projections, in a form of presentation reasonably acceptable to Agent;

(d) Annual Audited Financial Statements. As soon as available, but no later than one hundred eighty (180) days after the last day of Borrower's fiscal year, beginning with Borrower's fiscal year ending December 31, 2019, audited consolidated financial statements prepared under GAAP, consistently applied, together with an unqualified opinion (other than a qualification as to going concern typical for venture backed companies similar to Borrower) on the financial statements from an independent certified public accounting firm reasonably acceptable to Agent;

(e) Other Statements. Within five (5) days of delivery, copies of all material statements, reports and notices made available to Borrower's security holders or to any holders of Subordinated Debt;

(f) SEC Filings. In the event that Borrower becomes subject to the reporting requirements under the Exchange Act, within five (5) days of filing, copies of all periodic and other reports, proxy statements and other materials filed by Borrower with the SEC, any Governmental Authority succeeding to any or all of the functions of the SEC or with any national securities exchange, or distributed to its shareholders, as the case may be. Documents required to be delivered pursuant to the terms hereof (to the extent any such documents are included in materials otherwise filed with the SEC) may be delivered electronically and if so delivered, shall be deemed to have been delivered on the date on which Borrower posts such documents, or provides a link thereto, on Borrower's website on the Internet at Borrower's website address; provided, however, Borrower shall promptly notify Agent and the Lenders in writing (which may be by electronic mail) of the posting of any such documents;

(g) Legal Action Notice. A prompt report of any legal actions pending or threatened in writing against Borrower or any of its Subsidiaries that could result in damages or costs to Borrower or any of its Subsidiaries of, individually or in the aggregate, Five Hundred Thousand Dollars (\$500,000.00) or more;

(h) Beneficial Ownership Information. Prompt written notice of any changes to the beneficial ownership information set out in Section 14 of the Perfection Certificate. Borrower understands and acknowledges that each Lender relies on such true, accurate and up-to-date beneficial ownership information to meet such Lender's regulatory obligations to obtain, verify and record information about the beneficial owners of its legal entity customers; and

(i) Other Financial Information. Other financial information reasonably requested by Agent or any Lender.

**6.3 Inventory; Returns.** Keep all Inventory in good and marketable condition, free from material defects. Returns and allowances between Borrower and its Account Debtors shall follow Borrower's customary practices as they exist at the Effective Date. Borrower must promptly notify Agent of all returns, recoveries, disputes and claims that involve more than Five Hundred Thousand Dollars (\$500,000.00).

**6.4 Taxes; Pensions.** Timely file and require each of its Subsidiaries to (a) timely file (i) all required foreign, federal, and state Tax returns and reports and (ii) all required local Tax returns and reports, except with respect to Taxes not exceeding Fifty Thousand Dollars (\$50,000.00) individually or in the aggregate, and (b) timely pay, and require each of its Subsidiaries to timely pay, all foreign, federal, state and local Taxes, assessments, deposits and contributions owed by Borrower and each of its Subsidiaries, except for (i) any Taxes in an amount less than Two Hundred Fifty Thousand Dollars (\$250,000.00) or (ii) deferred payment of any Taxes contested pursuant to the terms of Section 5.8 hereof or as otherwise permitted in Section 5.8 hereof, and shall deliver to Agent, on reasonable demand, appropriate certificates attesting to such payments, and pay all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms.



## **6.5 Insurance.**

(a) Keep its business and the Collateral insured for risks and in amounts standard for companies in Borrower's industry and location and as Agent may reasonably request. Insurance policies shall be in a form, with financially sound and reputable insurance companies that are not Affiliates of Borrower, and in amounts that are satisfactory to Agent. All property policies shall have a lender's loss payable endorsement showing Agent as the sole lender loss payee. All liability policies shall show, or have endorsements showing, Agent as an additional insured. Agent shall be named as lender loss payee and/or additional insured with respect to any such insurance providing coverage in respect of any Collateral.

(b) Ensure that proceeds payable under any property policy are, at Agent's option, payable to Agent for the ratable benefit of the Lenders on account of the Obligations. Notwithstanding the foregoing, (a) so long as no Event of Default has occurred and is continuing, Borrower shall have the option of applying the proceeds of any casualty policy up to Five Hundred Thousand Dollars (\$500,000.00) with respect to any loss, but not exceeding One Million Dollars (\$1,000,000.00) in the aggregate for all losses under all casualty policies in any one year, toward the replacement or repair of destroyed or damaged property; provided that any such replaced or repaired property (i) shall be of equal or like value as the replaced or repaired Collateral and (ii) shall be deemed Collateral in which Agent has been granted a first priority security interest (subject only to Permitted Liens that are permitted pursuant to the terms of this Agreement to have superior priority to Agent's Lien in this Agreement), and (b) after the occurrence and during the continuance of an Event of Default, all proceeds payable under such casualty policy shall, at the option of Agent, be payable to Agent on account of the Obligations.

(c) At Agent's request, Borrower shall deliver certified copies of insurance policies and evidence of all premium payments. Each provider of any such insurance required under this Section 6.5 shall agree, by endorsement upon the policy or policies issued by it or by independent instruments furnished to Agent, that it will give Agent thirty (30) days prior written notice before any such policy or policies shall be materially altered or canceled. If Borrower fails to obtain insurance as required under this Section 6.5 or to pay any amount or furnish any required proof of payment to third persons and Agent, Agent may make all or part of such payment or obtain such insurance policies required in this Section 6.5, and take any action under the policies Agent deems prudent.

## **6.6 Operating Accounts.**

(a) Maintain all of its and all of its Subsidiaries' cash and Cash Equivalents with SVB and SVB's Affiliates. In addition, Borrower shall conduct all of its primary banking facilities with SVB, including, without limitation, letters of credit and business credit cards.

(b) Provide Agent five (5) days prior written notice before establishing any Collateral Account at or with any bank or financial institution other than SVB or SVB's Affiliates. For each Collateral Account that Borrower at any time maintains, Borrower shall cause the applicable bank or financial institution (other than SVB) at or with which any Collateral Account is maintained to execute and deliver a Control Agreement or other appropriate instrument with respect to such Collateral Account to perfect Agent's Lien in such Collateral Account in accordance with the terms hereunder which Control Agreement may not be terminated without the prior written consent of the Lenders. The provisions of the previous sentence shall not apply to deposit accounts exclusively used for payroll, payroll taxes and other employee wage and benefit payments to or for the benefit of Borrower's employees and identified to Agent and the Lenders by Borrower as such.

## **6.7 Protection of Intellectual Property Rights.**

(a) (i) Borrower shall use commercially reasonable efforts, in the exercise of its business judgment, to: (i) protect, defend and maintain the validity and enforceability of its Intellectual Property that is material to Borrower's business; (ii) promptly advise Agent in writing of material infringements or any other event that could reasonably be expected to materially and adversely affect the value of its Intellectual Property that is material to Borrower's business; and (iii) not allow any Intellectual Property material to Borrower's business to be abandoned, forfeited or dedicated to the public without Agent's written consent.

(b) Provide written notice to Agent within the later of (i) the then-next Compliance Certificate and (ii) thirty (30) days of entering or becoming bound by any Restricted License (other than over-the-counter software that is commercially available to the public). Borrower shall take such commercially reasonable steps as Agent reasonably requests to obtain the consent of, or waiver by, any person whose consent or waiver is necessary for (i) any Restricted License to be deemed "Collateral" and for Agent to have a security interest in it that might otherwise be restricted or prohibited by law or by the terms of any such Restricted License, whether now existing or entered into in the future, and (ii) Agent to have the ability in the event of a liquidation of any Collateral to dispose of such Collateral in accordance with Agent's and the Lenders' rights and remedies under this Agreement and the other Loan Documents.

**6.8 Litigation Cooperation.** From the date hereof and continuing through the termination of this Agreement, make available to Agent, without expense to Agent or any Lender, Borrower and its officers, employees and agents and Borrower's books and records, to the extent that Agent and/or the Lenders may deem them reasonably necessary to prosecute or defend any third-party suit or proceeding instituted by or against Agent and/or any Lender with respect to any Collateral or relating to Borrower.

**6.9 Access to Collateral; Books and Records.** Allow Agent, or its agents, at reasonable times, on three (3) Business Days' notice (provided no notice is required if an Event of Default has occurred and is continuing), to inspect the Collateral and audit and copy Borrower' Books. The foregoing inspections and audits shall be conducted no more often than once every twelve (12) months unless an Event of Default has occurred and is continuing in which case such inspections and audits shall occur as often as Agent shall determine is necessary. The foregoing inspections and audits shall be at Borrower' expense and the charge therefor shall be One Thousand Dollars (\$1,000.00) per person per day (or such higher amount as shall represent Agent's then-current standard charge for the same), plus reasonable and documented out-of-pocket expenses. In the event Borrower and Agent schedule an audit more than eight (8) days in advance, and Borrower cancels or seeks to reschedule the audit with less than eight (8) days written notice to Agent, then (without limiting any of Agent's or any Lender's rights or remedies) Borrower shall pay Agent a fee of Two Thousand Dollars (\$2,000.00) plus any reasonable and documented out-of-pocket expenses incurred by Agent to compensate Agent for the anticipated costs and expenses of the cancellation or rescheduling.

**6.10 Further Assurances.** Execute any further instruments and take further action as Agent and the Lenders reasonably request to perfect or continue Agent's Lien in the Collateral or to effect the purposes of this Agreement. Deliver to Agent and the Lenders, within five (5) days after the same are sent or received, copies of all correspondence, reports, documents and other filings with any Governmental Authority regarding compliance with or maintenance of Governmental Approvals or Requirements of Law or that could reasonably be expected to have a material effect on any of the Governmental Approvals or otherwise on the operations of Borrower or any of its Subsidiaries.

**6.11 Post-Closing Conditions.** Within thirty (30) days of the Effective Date, deliver to Agent evidence satisfactory to Agent that the insurance endorsements required by Section 6.5 hereof are in full force and effect, together with appropriate evidence showing lender loss payable and/or additional insured clauses or endorsements in favor of Agent.

**6.12 Formation or Acquisition of Subsidiaries.** Notwithstanding and without limiting the negative covenants contained in Sections 7.3 and 7.7 hereof, at the time that Borrower forms any direct or indirect Subsidiary or acquires any direct or indirect Subsidiary after the Effective Date (including, without limitation, pursuant to a Division), Borrower shall (a) cause such new Subsidiary to provide to Agent a joinder to this Agreement to become a co-borrower hereunder, together with such appropriate financing statements and/or Control Agreements, all in form and substance satisfactory to Agent (including being sufficient to grant Agent a first priority Lien, for the ratable benefit of the Lenders, (subject to Permitted Liens) in and to the assets of such newly formed or acquired Subsidiary), provided that any Foreign Subsidiary shall not be required to become a co-borrower or secured guarantor, (b) provide to Agent appropriate certificates and powers and financing statements, pledging all of the direct or beneficial ownership interest in such new Subsidiary, in form and substance satisfactory to Agent, provided that, with respect to stock, units, or other evidence of ownership held by Borrower in such Foreign Subsidiary, Borrower shall not be required to grant or pledge a security interest to Agent in more than sixty-five percent (65.0%) of such stock, units, or other evidence of ownership held by Borrower in such Foreign Subsidiary, and (c) provide to Agent all other documentation in form and substance satisfactory to Agent, including one or more opinions of counsel satisfactory to

Agent, which in its opinion is appropriate with respect to the execution and delivery of the applicable documentation referred to above. Any document, agreement, or instrument executed or issued pursuant to this Section 6.12 shall be a Loan Document.

## **7 NEGATIVE COVENANTS**

Borrower shall not do any of the following without the prior written consent of the Lenders:

**7.1 Dispositions.** Convey, sell, lease, transfer, assign, or otherwise dispose of (including, without limitation, pursuant to a Division) (collectively, "**Transfer**"), or permit any of its Subsidiaries to Transfer, all or any part of its business or property, except for Transfers (a) of Inventory in the ordinary course of business; (b) of worn-out, obsolete or surplus Equipment that is, in the reasonable judgment of Borrower, no longer economically practicable to maintain or useful in the ordinary course of business of Borrower; (c) consisting of Permitted Liens, Permitted Indebtedness, and Permitted Investments; (d) consisting of the sale or issuance of any stock of Borrower permitted under Section 7.2 of this Agreement; (e) consisting of Borrower's use or transfer of money or Cash Equivalents in a manner that is not prohibited by the terms of this Agreement or the other Loan Documents; (f) of (i) non-exclusive licenses for the use of the property of Borrower or its Subsidiaries in the ordinary course of business, and (ii) licenses that could not result in a legal transfer of title of the licensed property but that may be exclusive as to limited fields of use for commercialization, sales and marketing purposes, geographic territories outside of the United States and/or time periods in the ordinary course of business; (g) to Borrower from any of its Subsidiaries; (h) consisting of the abandonment, forfeiture or dedication to the public of any Intellectual Property immaterial to Borrower's business; and (i) of other property not to exceed Five Hundred Thousand Dollars (\$500,000.00) in any twelve (12) month period.

**7.2 Changes in Business, Management, Control, or Business Locations.** (a) Engage in or permit any of its Subsidiaries to engage in any business other than the businesses currently engaged in by Borrower and such Subsidiary, as applicable, or reasonably related thereto; (b) liquidate or dissolve; (c) fail to provide notice to Agent and Lenders of any Key Person departing from or ceasing to be employed by Borrower within five (5) days after such Key Person's departure from Borrower; or (d) permit or suffer any Change in Control.

Borrower shall not, without at least ten (10) days prior written notice to Agent: (1) add any new offices or business locations, including warehouses (unless such new offices or business locations contain less than Five Hundred Thousand Dollars (\$500,000.00) in Borrower's assets or property) or deliver any portion of the Collateral valued, individually or in the aggregate, in excess of Seven Hundred Fifty Thousand Dollars (\$750,000.00) to a bailee at a location other than to a bailee and at a location already disclosed in the Perfection Certificate, (2) change its jurisdiction of organization, (3) change its organizational structure or type, (4) change its legal name, or (5) change any organizational number (if any) assigned by its jurisdiction of organization. If Borrower intends to add any new offices or business locations, including warehouses, containing in excess of Five Hundred Thousand Dollars (\$500,000.00) of Borrower's assets or property, then Borrower shall cause the landlord of any such new offices or business locations, including warehouses, to execute and deliver a landlord consent in form and substance satisfactory to Agent. If Borrower intends to deliver any portion of the Collateral valued, individually or in the aggregate, in excess of Seven Hundred Fifty Thousand Dollars (\$750,000.00) to a bailee, and Agent and such bailee are not already parties to a bailee agreement governing both the Collateral and the location to which Borrower intends to deliver the Collateral, then Borrower shall cause such bailee to execute and deliver a bailee agreement in form and substance satisfactory to Agent.

**7.3 Mergers or Acquisitions.** Merge or consolidate, or permit any of its Subsidiaries to merge or consolidate, with any other Person, or acquire, or permit any of its Subsidiaries to acquire, all or substantially all of the capital stock or property of another Person (including, without limitation, by the formation of any Subsidiary or pursuant to a Division). A Subsidiary may merge or consolidate into another Subsidiary or into Borrower.

**7.4 Indebtedness.** Create, incur, assume, or be liable for any Indebtedness, or permit any Subsidiary to do so, other than Permitted Indebtedness.

**7.5 Encumbrance.** Create, incur, allow, or suffer any Lien on any of its property, or assign or convey any right to receive income, including the sale of any Accounts, or permit any of its Subsidiaries to do so, except for Permitted Liens, permit any Collateral not to be subject to the first priority security interest granted herein, or enter

into any agreement, document, instrument or other arrangement (except with or in favor of Agent, for the ratable benefit of the Lenders) with any Person which directly or indirectly prohibits or has the effect of prohibiting Borrower or any Subsidiary from assigning, mortgaging, pledging, granting a security interest in or upon, or encumbering any of Borrower's or any Subsidiary's Intellectual Property, except as is otherwise permitted in Section 7.1 hereof and the definition of "Permitted Liens" herein.

**7.6 Maintenance of Collateral Accounts.** Maintain any Collateral Account except pursuant to the terms of Section 6.6(b) hereof.

**7.7 Distributions; Investments.** (a) Pay any dividends or make any distribution or payment or redeem, retire or purchase any capital stock provided that Borrower may (i) convert any of its convertible securities into other securities pursuant to the terms of such convertible securities or otherwise in exchange thereof, (ii) pay dividends solely in common stock, (iii) repurchase the stock of former employees, directors, officers, or consultants pursuant to stock option or stock repurchase agreements so long as an Event of Default does not exist at the time of any such repurchase and would not exist after giving effect to any such repurchase, provided that the aggregate amount of all such repurchases does not exceed One Million Dollars (\$1,000,000.00) per fiscal year, (iv) make purchases of capital stock arising out of capital stock in connection with the exercise of stock options or stock appreciation by way of a cashless exercise, or (v) make cash payments in an amount not to exceed One Hundred Fifty Thousand Dollars (\$150,000.00) in the aggregate per fiscal year in lieu of the issuance of fractional shares upon the conversion of convertible securities, stock splits, stock combinations, or business combinations; or (b) directly or indirectly make any Investment (including, without limitation, by the formation of any Subsidiary) other than Permitted Investments, or permit any of its Subsidiaries to do so. Notwithstanding the foregoing, Subsidiaries of Borrower shall be permitted to pay dividends to Borrower or any of its Subsidiaries or make distributions to Borrower or any of its Subsidiaries.

**7.8 Transactions with Affiliates.** Directly or indirectly enter into or permit to exist any material transaction with any Affiliate of Borrower, except for (a) transactions that are in the ordinary course of Borrower's business or are otherwise permitted under this Agreement, upon fair and reasonable terms that are no less favorable to Borrower than would be obtained in an arm's length transaction with a non-affiliated Person, (b) Subordinated Debt or equity financings with investors in Borrower for capital raising purposes, (c) reasonable and customary compensation-related transactions in the ordinary course of business or otherwise as approved by the Board or by Agent, and (d) distributions of the type described in and permitted under Section 7.7.

**7.9 Subordinated Debt.** (a) Make or permit any payment on any Subordinated Debt, except under the terms of the subordination, intercreditor, or other similar agreement to which such Subordinated Debt is subject, or (b) amend any provision in any document relating to the Subordinated Debt which would increase the amount thereof owed by Borrower, provide for earlier or greater principal, interest, or other payments thereon, or adversely affect the subordination thereof to Obligations owed to Agent and the Lenders.

**7.10 Compliance.** Become an "investment company" or a company controlled by an "investment company", under the Investment Company Act of 1940, as amended, or undertake as one of its important activities extending credit to purchase or carry margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System), or use the proceeds of any Credit Extension for that purpose; fail to (a) meet the minimum funding requirements of ERISA, (b) prevent a Reportable Event or Prohibited Transaction, as defined in ERISA, from occurring, or (c) comply with the Federal Fair Labor Standards Act, the failure of any of the conditions described in clauses (a) through (c) which could reasonably be expected to have a material adverse effect on Borrower's business; or violate any other law or regulation, if the violation could reasonably be expected to have a material adverse effect on Borrower's business, or permit any of its Subsidiaries to do so; withdraw or permit any Subsidiary to withdraw from participation in, permit partial or complete termination of, or permit the occurrence of any other event with respect to, any present pension, profit sharing and deferred compensation plan which could reasonably be expected to result in any liability of Borrower, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

## **8 EVENTS OF DEFAULT**

Any one of the following shall constitute an event of default (an “**Event of Default**”) under this Agreement:

**8.1 Payment Default.** Borrower fails to (a) make any payment of principal or interest on any Credit Extension when due, or (b) pay any other Obligations within three (3) Business Days after such Obligations are due and payable (which three (3) Business Day cure period shall not apply to payments due on the Term Loan Maturity Date). During the cure period, the failure to make or pay any payment specified under clause (b) hereunder is not an Event of Default (but no Credit Extension will be made during the cure period);

### **8.2 Covenant Default.**

(a) Borrower fails or neglects to perform any obligation in Sections 6.2, 6.4, 6.5, 6.6, 6.7(b), 6.11, or 6.12, or violates any covenant in Section 7; or

(b) Borrower fails or neglects to perform, keep, or observe any other term, provision, condition, covenant or agreement contained in this Agreement or any Loan Documents, and as to any default (other than those specified in this Section 8) under such other term, provision, condition, covenant or agreement that can be cured, has failed to cure the default within ten (10) days after the occurrence thereof; provided, however, that if the default cannot by its nature be cured within the ten (10) day period or cannot after diligent attempts by Borrower be cured within such ten (10) day period, and such default is likely to be cured within a reasonable time, then Borrower shall have an additional period (which shall not in any case exceed thirty (30) days) to attempt to cure such default, and within such reasonable time period the failure to cure the default shall not be deemed an Event of Default (but no Credit Extensions shall be made during such cure period). Cure periods provided under this section shall not apply, among other things, to financial covenants or any other covenants set forth in clause (a) above;

**8.3 Material Adverse Change.** A Material Adverse Change occurs;

### **8.4 Attachment; Levy; Restraint on Business.**

(a) (i) The service of process seeking to attach, by trustee or similar process, any funds of Borrower or of any entity under the control of Borrower (including a Subsidiary), or (ii) a notice of lien or levy is filed against any of Borrower’s assets by any Governmental Authority, and the same under subclauses (i) and (ii) hereof are not, within ten (10) days after the occurrence thereof, discharged or stayed (whether through the posting of a bond or otherwise); provided, however, no Credit Extensions shall be made during any ten (10) day cure period; or

(b) (i) any material portion of Borrower’s assets is attached, seized, levied on, or comes into possession of a trustee or receiver, or (ii) any court order enjoins, restrains, or prevents Borrower from conducting all or any material part of its business;

**8.5 Insolvency.** (a) Borrower is unable to pay its debts (including trade debts) as they become due or otherwise becomes insolvent; (b) Borrower begins an Insolvency Proceeding; or (c) an Insolvency Proceeding is begun against Borrower and is not dismissed or stayed within forty-five (45) days (but no Credit Extensions shall be made while any of the conditions described in clause (a) exist and/or until any Insolvency Proceeding is dismissed);

**8.6 Other Agreements.** There is, under any agreement to which Borrower is a party with a third party or parties, (a) any default resulting in a right by such third party or parties, whether or not exercised, to accelerate the maturity of any Indebtedness in an amount individually or in the aggregate in excess of Five Hundred Thousand Dollars (\$500,000.00); or (b) any breach or default by Borrower, the result of which could have a material adverse effect on Borrower’s business;

**8.7 Judgments; Penalties.** One or more fines, penalties or final judgments, orders or decrees for the payment of money in an amount, individually or in the aggregate, of at least Five Hundred Thousand Dollars (\$500,000.00) (not covered by independent third-party insurance as to which liability has been accepted by such insurance carrier) shall be rendered against Borrower by any Governmental Authority, and the same are not, within

ten (10) days after the entry, assessment or issuance thereof, discharged, satisfied, or paid, or after execution thereof, stayed or bonded pending appeal, or such judgments are not discharged prior to the expiration of any such stay (provided that no Credit Extensions will be made prior to the satisfaction, payment, discharge, stay, or bonding of such fine, penalty, judgment, order or decree);

**8.8 Misrepresentations.** Borrower or any Person acting for Borrower makes any representation, warranty, or other statement now or later in this Agreement, any Loan Document or in any writing delivered to Agent or any Lender in connection with or to induce Agent or any Lender to enter this Agreement or any Loan Document, and such representation, warranty, or other statement is incorrect in any material respect when made;

**8.9 Subordinated Debt.** The Obligations shall for any reason be subordinated or shall not have the priority contemplated by this Agreement or any applicable subordination or intercreditor agreement; or

**8.10 Governmental Approvals.** Any Governmental Approval shall have been (a) revoked, rescinded, suspended, modified in an adverse manner or not renewed in the ordinary course for a full term or (b) subject to any decision by a Governmental Authority that designates a hearing with respect to any applications for renewal of any of such Governmental Approval or that could reasonably be expected to result in the Governmental Authority taking any of the actions described in clause (a) above, and such decision or such revocation, rescission, suspension, modification or non-renewal (i) cause, or could reasonably be expected to cause, a Material Adverse Change, or (ii) materially adversely affects the legal qualifications of Borrower or any of its Subsidiaries to hold such Governmental Approval in any applicable jurisdiction and such revocation, rescission, suspension, modification or non-renewal could reasonably be expected to affect the status of or legal qualifications of Borrower or any of its Subsidiaries to hold any Governmental Approval in any other jurisdiction.

## **9 RIGHTS AND REMEDIES**

**9.1 Rights and Remedies.** Upon the occurrence and during the continuance of an Event of Default, Agent, as directed by each Lender in accordance with the Lender Intercreditor Agreement or, if such rights and remedies are not addressed in the Lender Intercreditor Agreement, as directed by a majority of the Lenders, may, without notice or demand, do any or all of the following, to the extent not prohibited by applicable law:

(a) declare all Obligations immediately due and payable (but if an Event of Default described in Section 8.5 occurs all Obligations are immediately due and payable without any action by Agent or any Lender);

(b) stop advancing money or extending credit for Borrower's benefit under this Agreement or under any other agreement among Borrower, Agent, and/or any Lenders;

(c) demand that Borrower (i) deposit cash with SVB in an amount equal to at least (A) one hundred five percent (105.0%) of the Dollar Equivalent of the aggregate face amount of all Letters of Credit denominated in Dollars remaining undrawn, and (B) one hundred ten percent (110.0%) of the Dollar Equivalent of the aggregate face amount of all Letters of Credit denominated in a Foreign Currency remaining undrawn (plus, in each case, all interest, fees, and costs due or to become due in connection therewith (as estimated by SVB in its good faith business judgment)), to secure all of the Obligations relating to such Letters of Credit, as collateral security for the repayment of any future drawings under such Letters of Credit, and Borrower shall forthwith deposit and pay such amounts, and (ii) pay in advance all letter of credit fees scheduled to be paid or payable over the remaining term of any Letters of Credit;

(d) terminate any FX Contracts;

(e) verify the amount of, demand payment of and performance under, and collect any Accounts and General Intangibles, settle or adjust disputes and claims directly with Account Debtors for amounts on terms and in any order that Agent and/or the Lenders consider advisable, and notify any Person owing Borrower money of Agent's security interest in such funds. Upon the occurrence of an Event of Default, Borrower shall collect all payments in trust for Agent, for the ratable benefit of the Lenders and, if requested by Agent, immediately deliver the

payments to Agent, for the ratable benefit of the Lenders in the form received from the Account Debtor, with proper endorsements for deposit;

(f) make any payments and do any acts Agent or any Lender considers necessary or reasonable to protect the Collateral and/or its security interest in the Collateral. Borrower shall assemble the Collateral if Agent requests and make it available as Agent designates at any location that is reasonably convenient to Agent and Borrower. Agent may enter premises where the Collateral is located, take and maintain possession of any part of the Collateral, and pay, purchase, contest, or compromise any Lien which appears to be prior or superior to its security interest and pay all expenses incurred. Borrower grants Agent a license to enter and occupy any of its premises, without charge, to exercise any of Agent's rights or remedies;

(g) apply to the Obligations (i) any balances and deposits of Borrower it holds, or (ii) any amount held by Agent owing to or for the credit or the account of Borrower;

(h) ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell the Collateral. Agent, for the benefit of the Lenders is hereby granted a non-exclusive, royalty-free license or other right to use, without charge, Borrower's labels, Patents, Copyrights, mask works, rights of use of any name, trade secrets, trade names, Trademarks, and advertising matter, or any similar property as it pertains to the Collateral, in completing production of, advertising for sale, and selling any Collateral and, in connection with Agent's exercise of its rights under this Section, Borrower's rights under all licenses and all franchise agreements inure to Agent, for the ratable benefit of the Lenders;

(i) place a "hold" on any account maintained with SVB and/or deliver a notice of exclusive control, any entitlement order, or other directions or instructions pursuant to any Control Agreement or similar agreements providing control of any Collateral;

(j) demand and receive possession of Borrower's Books; and

(k) exercise all rights and remedies available to Agent and the Lenders under the Loan Documents or at law or equity, including all remedies provided under the Code (including disposal of the Collateral pursuant to the terms thereof).

**9.2 Power of Attorney.** Borrower hereby irrevocably appoints Agent, for the benefit of the Lenders, as its lawful attorney-in-fact, exercisable upon the occurrence and during the continuance of an Event of Default, to: (a) endorse Borrower's name on any checks or other forms of payment or security; (b) sign Borrower's name on any invoice or bill of lading for any Account or drafts against Account Debtors; (c) settle and adjust disputes and claims about the Accounts directly with Account Debtors, for amounts and on terms Agent determines reasonable; (d) make, settle, and adjust all claims under Borrower's insurance policies; (e) pay, contest or settle any Lien, charge, encumbrance, security interest, and adverse claim in or to the Collateral, or any judgment based thereon, or otherwise take any action to terminate or discharge the same; and (f) transfer the Collateral into the name of Agent or a third party as the Code permits. Borrower hereby appoints Agent as its lawful attorney-in-fact to sign Borrower's name on any documents necessary to perfect or continue the perfection of Agent's security interest in the Collateral regardless of whether an Event of Default has occurred until all Obligations have been satisfied in full and Lenders are under no further obligation to make Credit Extensions hereunder. Agent's foregoing appointment as Borrower's attorney in fact, and all of Agent's rights and powers, coupled with an interest, are irrevocable until all Obligations have been fully repaid and performed and each Lender's obligation to provide Credit Extensions terminates.

**9.3 Protective Payments.** If Borrower fails to obtain the insurance called for by Section 6.5 or fails to pay any premium thereon or fails to pay any other amount which Borrower is obligated to pay under this Agreement or any other Loan Document or which may be required to preserve the Collateral, Agent may obtain such insurance or make such payment, and all amounts so paid by Agent are Lenders' Expenses and immediately due and payable, bearing interest at the then highest rate applicable to the Obligations, and secured by the Collateral. Agent will make reasonable efforts to provide Borrower with notice of Agent obtaining such insurance at the time it is obtained or within a reasonable time thereafter. No payments by Agent are deemed an agreement to make similar payments in the future or Agent's and/or Lender's waiver of any Event of Default.

**9.4 Application of Payments and Proceeds Upon Default.** If an Event of Default has occurred and is continuing, Agent shall have the right to apply in any order any funds in its possession, whether from Borrower's account balances, payments, proceeds realized as the result of any collection of Accounts or other disposition of the Collateral, or otherwise, to the Obligations. Agent shall pay any surplus to Borrower by credit to the Designated Deposit Account or to other Persons legally entitled thereto; Borrower shall remain liable to Agent and the Lenders for any deficiency. If Agent, directly or indirectly, enters into a deferred payment or other credit transaction with any purchaser at any sale of Collateral, Agent shall have the option, exercisable at any time, of either reducing the Obligations by the principal amount of the purchase price or deferring the reduction of the Obligations until the actual receipt by Agent of cash therefor.

**9.5 Liability for Collateral.** So long as Agent and Lenders comply with reasonable banking practices regarding the safekeeping of the Collateral in their possession or under the control of Agent and/or Lenders, Agent and Lenders shall not be liable or responsible for: (a) the safekeeping of the Collateral; (b) any loss or damage to the Collateral; (c) any diminution in the value of the Collateral; or (d) any act or default of any carrier, warehouseman, bailee, or other Person. Borrower bears all risk of loss, damage or destruction of the Collateral.

**9.6 No Waiver; Remedies Cumulative.** Agent's and any Lender's failure, at any time or times, to require strict performance by Borrower of any provision of this Agreement or any other Loan Document shall not waive, affect, or diminish any right of Agent or any Lender thereafter to demand strict performance and compliance herewith or therewith. No waiver hereunder shall be effective unless signed by the party granting the waiver and then is only effective for the specific instance and purpose for which it is given. Agent's and each Lender's rights and remedies under this Agreement and the other Loan Documents are cumulative. Agent and each Lender have all rights and remedies provided under the Code, by law, or in equity. Agent's or any Lender's exercise of one right or remedy is not an election and shall not preclude Agent or any Lender from exercising any other remedy under this Agreement or any other Loan Document or other remedy available at law or in equity, and Agent's or any Lender's waiver of any Event of Default is not a continuing waiver. Agent's or any Lender's delay in exercising any remedy is not a waiver, election, or acquiescence.

**9.7 Demand Waiver.** Borrower waives demand, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees held by Agent on which Borrower is liable.

## **10 AGENT**

### **10.1 Appointment and Authority.**

(a) Each Lender hereby irrevocably appoints SVB to act on its behalf as Agent hereunder and under the other Loan Documents and authorizes Agent to take such actions on its behalf and to exercise such powers as are delegated to Agent by the terms hereof or thereof, together with such actions and powers as are reasonably incidental thereto.

(b) The provisions of this Section 10 are solely for the benefit of Agent and Lenders, and Borrower shall not have rights as a third party beneficiary of any of such provisions. Notwithstanding any provision to the contrary elsewhere in this Agreement, Agent shall not have any duties or responsibilities to any Lender or any other Person, except those expressly set forth herein, or any fiduciary relationship with any Lender, and no implied covenants, functions, responsibilities, duties, obligations or liabilities shall be read into this Agreement or any other Loan Document or otherwise exist against Agent.

**10.2 Delegation of Duties.** Agent may perform any and all of its duties and exercise its rights and powers hereunder or under any other Loan Document by or through any one or more sub-agents appointed by Agent. Agent and any such sub-agent may perform any and all of its duties and exercise its rights and powers by or through their respective Indemnified Persons. The exculpatory provisions of this Section 10.2 shall apply to any such sub-agent and to the Indemnified Persons of Agent and any such sub-agent, and shall apply to their respective activities in connection with the syndication of the credit facilities provided for herein as well as activities as Agent.



**10.3 Exculpatory Provisions.** Agent shall have no duties or obligations except those expressly set forth herein and in the other Loan Documents. Without limiting the generality of the foregoing, Agent shall not:

(a) be subject to any fiduciary, trust, agency or other similar duties, regardless of whether any Event of Default has occurred and is continuing;

(b) have any duty to take any discretionary action or exercise any discretionary powers, except discretionary rights and powers expressly contemplated hereby or by the other Loan Documents that Agent is required to exercise as directed in writing by the Lenders, as applicable; provided that Agent shall not be required to take any action that, in its opinion or the opinion of its counsel, may expose Agent to liability or that is contrary to any Loan Document or applicable law; and

(c) except as expressly set forth herein and in the other Loan Documents, have any duty to disclose, and Agent shall not be liable for the failure to disclose, any information relating to Borrower or any of its Affiliates that is communicated to or obtained by any Person serving as Agent or any of its Affiliates in any capacity.

Agent shall not be liable for any action taken or not taken by it (i) with the consent or at the request of the Lenders (or as Agent shall believe in good faith shall be necessary, under the circumstances as provided in Section 13.7) or (ii) in the absence of its own gross negligence or willful misconduct.

Agent shall not be responsible for or have any duty to ascertain or inquire into (i) any statement, warranty or representation made in or in connection with this Agreement or any other Loan Document, (ii) the contents of any certificate, report or other document delivered hereunder or thereunder or in connection herewith or therewith, (iii) the performance or observance of any of the covenants, agreements or other terms or conditions set forth herein or therein or the occurrence of any Event of Default, (iv) the validity, enforceability, effectiveness or genuineness of this Agreement, any other Loan Document or any other agreement, instrument or document or (v) the satisfaction of any condition set forth in Section 3 or elsewhere herein, other than to confirm receipt of items expressly required to be delivered to Agent.

**10.4 Reliance by Agent.** Agent shall be entitled to rely upon, and shall not incur any liability for relying upon, any notice, request, certificate, consent, statement, instrument, document or other writing (including any electronic message, internet or intranet website posting or other distribution) believed by it to be genuine and to have been signed, sent or otherwise authenticated by the proper Person. Agent also may rely upon any statement made to it orally or by telephone and believed by it to have been made by the proper Person, and shall not incur any liability for relying thereon. Agent may consult with legal counsel (who may be counsel for Borrower), independent accountants and other experts selected by it, and shall not be liable for any action taken or not taken by it in accordance with the advice of any such counsel, accountants or experts. In determining compliance with any condition hereunder to the making of a Credit Extension that, by its terms, must be fulfilled to the satisfaction of a Lender, Agent may presume that such condition is satisfactory to such Lender unless Agent shall have received notice to the contrary from such Lender prior to the making of such Credit Extension. Agent shall in all cases be fully protected in acting, or in refraining from acting, under this Agreement and the other Loan Documents in accordance with a request of the Lenders, and such request and any action taken or failure to act pursuant thereto shall be binding upon Lenders and all future holders of the Credit Extensions.

**10.5 Notice of Default.** Agent shall not be deemed to have knowledge or notice of the occurrence of any Event of Default (except with respect to defaults in the payment of principal, interest or fees required to be paid to Agent for the account of Lenders), unless Agent has received notice from a Lender or Borrower referring to this Agreement, describing such Event of Default and stating that such notice is a “notice of default”. In the event that Agent receives such a notice, Agent shall give notice thereof to Lenders. Agent shall take such action with respect to such Event of Default as shall be reasonably directed by the Lenders.

**10.6 Non-Reliance on Agent and Other Lenders.** Each Lender expressly acknowledges that neither Agent nor any of its officers, directors, employees, agents, attorneys in fact or affiliates has made any representations or warranties to it and that no act by Agent hereafter taken, including any review of the affairs of a Group Member or any Affiliate of a Group Member, shall be deemed to constitute any representation or warranty by Agent to any Lender. Each Lender represents to Agent that it has, independently and without reliance upon Agent or any other Lender, and

based on such documents and information as it has deemed appropriate, made its own appraisal of, and investigation into, the business, operations, property, financial and other condition and creditworthiness of the Group Members and their Affiliates and made its own decision to make its Credit Extensions hereunder and enter into this Agreement. Each Lender also represents that it will, independently and without reliance upon Agent or any other Lender, and based on such documents and information as it shall deem appropriate at the time, continue to make its own credit analysis, appraisals and decisions in taking or not taking action under this Agreement and the other Loan Documents, and to make such investigation as it deems necessary to inform itself as to the business, operations, property, financial and other condition and creditworthiness of the Group Members and their Affiliates. Except for notices, reports and other documents expressly required to be furnished to Lenders by Agent hereunder, Agent shall have no duty or responsibility to provide any Lender with any credit or other information concerning the business, operations, property, condition (financial or otherwise), prospects or creditworthiness of any Group Member or any Affiliate of a Group Member that may come into the possession of Agent or any of its officers, directors, employees, agents, attorneys in fact or Affiliates.

**10.7 Indemnification.** Each Lender agrees to indemnify Agent in its capacity as such (to the extent not reimbursed by Borrower and without limiting the obligation of Borrower to do so in accordance with the terms hereof, according to its Term Loan Commitment Percentage in effect on the date on which indemnification is sought under this Section 10.7 (or, if indemnification is sought after the date upon which the Commitments shall have terminated and the Obligations shall have been paid in full, in accordance with its Term Loan Commitment Percentage immediately prior to such date), from and against any and all liabilities, obligations, losses, damages, penalties, actions, judgments, suits, costs, expenses or disbursements of any kind whatsoever that may at any time (whether before or after the payment of the Credit Extensions) be imposed on, incurred by or asserted against Agent in any way relating to or arising out of, the Commitments, this Agreement, any of the other Loan Documents or any documents contemplated by or referred to herein or therein or the transactions contemplated hereby or thereby or any action taken or omitted by Agent under or in connection with any of the foregoing; provided that no Lender shall be liable for the payment of any portion of such liabilities, obligations, losses, damages, penalties, actions, judgments, suits, costs, expenses or disbursements that are found by a final and nonappealable decision of a court of competent jurisdiction to have resulted primarily from Agent's gross negligence or willful misconduct. The agreements in this Section shall survive the payment of the Credit Extensions and all other amounts payable hereunder.

**10.8 Agent in Its Individual Capacity.** The Person serving as Agent hereunder shall have the same rights and powers in its capacity as a Lender as any other Lender and may exercise the same as though it were not Agent and the term "Lender" or "Lenders" shall, unless otherwise expressly indicated or unless the context otherwise requires, include each such Person serving as Agent hereunder in its individual capacity. Such Person and its Affiliates may accept deposits from, lend money to, act as the financial advisor or in any other advisory capacity for and generally engage in any kind of business with Borrower, any Guarantor or any Subsidiary or other Affiliate thereof as if such Person were not Agent hereunder and without any duty to account therefor to Lenders.

**10.9 Successor Agent.** Agent may at any time give notice of its resignation to Lenders and Borrower, which resignation shall not be effective until the time at which (a) the majority of the Lenders have delivered to Agent their written consent to such resignation and (b) prior to the occurrence of an Event of Default, Borrower has delivered to Agent its written consent to such resignation, which consent shall not be unreasonably withheld or delayed. Upon receipt of any such notice of resignation, the Lenders shall have the right, in consultation with Borrower, to appoint a successor, which shall be a financial institution with an office in the State of California, or an Affiliate of any such bank with an office in the State of California. If no such successor shall have been so appointed by the Lenders and shall have accepted such appointment within thirty (30) days after the retiring Agent has received the written consent of the majority of the Lenders to such resignation, then the retiring Agent may on behalf of Lenders, appoint a successor Agent meeting the qualifications set forth above; provided that in no event shall any such successor Agent be a Defaulting Lender and provided further that if the retiring Agent shall notify Borrower and Lenders that no qualifying Person has accepted such appointment, then such resignation shall nonetheless become effective in accordance with such notice and (1) the retiring Agent shall be discharged from its duties and obligations hereunder and under the other Loan Documents (except that in the case of any collateral security held by Agent on behalf of the Lenders under any of the Loan Documents, the retiring Agent shall continue to hold such collateral security until such time as a successor Agent is appointed and such collateral security is assigned to such successor Agent) and (2) all payments, communications and determinations provided to be made by, to or through Agent shall instead be made by or to each Lender directly, until such time as the Lenders appoint a successor Agent as provided for above in this

Section 10.9. Upon the acceptance of a successor's appointment as Agent hereunder, such successor shall succeed to and become vested with all of the rights, powers, privileges and duties of the retiring (or retired) Agent, and the retiring Agent shall be discharged from all of its duties and obligations hereunder or under the other Loan Documents (if not already discharged therefrom as provided above in this Section 10.9). The fees payable by Borrower to a successor Agent shall be the same as those payable to its predecessor unless otherwise agreed between the Borrower and such successor. After the retiring Agent's resignation hereunder and under the other Loan Documents, the provisions of this Section 10 shall continue in effect for the benefit of such retiring Agent, its sub-agents and their respective Indemnified Persons in respect of any actions taken or omitted to be taken by any of them while the retiring Agent was acting as Agent.

#### **10.10 Defaulting Lender.**

(a) Defaulting Lender Adjustments. Notwithstanding anything to the contrary contained in this Agreement, if any Lender becomes a Defaulting Lender, then, until such time as such Lender is no longer a Defaulting Lender, to the extent permitted by applicable law:

(i) Waivers and Amendments. Such Defaulting Lender's right to approve or disapprove any amendment, waiver or consent with respect to this Agreement shall be restricted as long as said Lender is a Defaulting Lender.

(ii) Defaulting Lender Waterfall. Any payment of principal, interest, fees or other amounts received by the Agent for the account of such Defaulting Lender (whether voluntary or mandatory, at maturity, pursuant to Section 8 or otherwise, and including any amounts made available to the Agent by such Defaulting Lender pursuant to Section 13.10), shall be applied at such time or times as may be determined by the Agent as follows: first, to the payment of any amounts owing by such Defaulting Lender to the Agent hereunder; second, as the Borrower may request (so long as no Event of Default exists), to the funding of any Term Loan Advance in respect of which such Defaulting Lender has failed to fund its portion thereof as required by this Agreement, as determined by the Agent; third, if so determined by the Agent and Borrower, to be held in a Deposit Account and released pro rata to satisfy such Defaulting Lender's potential future funding obligations with respect to Term Loan Advances under this Agreement; fourth, so long as no Event of Default has occurred and is continuing, to the payment of any amounts owing to the Borrower as a result of any judgment of a court of competent jurisdiction obtained by the Borrower against such Defaulting Lender as a result of such Defaulting Lender's breach of its obligations under this Agreement; and fifth, to such Defaulting Lender or as otherwise directed by a court of competent jurisdiction; provided that if (A) such payment is a payment of the principal amount of any Term Loan Advances in respect of which such Defaulting Lender has not fully funded its appropriate share and (B) such Term Loan Advances were made at a time when the conditions set forth in Section 3.1 were satisfied or waived, such payment shall be applied solely to pay the Term Loan Advances of all non-Defaulting Lenders on a *pro rata* basis prior to being applied to the payment of any Term Loan Advances of such Defaulting Lender until such time as all Term Loan Advances are held by the Lenders pro rata in accordance with the Term Loan Commitments under this Agreement. Any payments, prepayments or other amounts paid or payable to a Defaulting Lender that are applied (or held) to pay amounts owed by a Defaulting Lender pursuant to this Section 10.10(a)(ii) shall be deemed paid to and redirected by such Defaulting Lender, and each Lender irrevocably consents hereto.

(iii) Certain Fees. No Defaulting Lender shall be entitled to receive any fee pursuant to Section 2.4(a) or Section 2.4(b) for any period during which such Lender is a Defaulting Lender (and the Borrower shall not be required to pay any such fee that otherwise would have been required to have been paid to such Defaulting Lender).

(b) Defaulting Lender Cure. If Borrower and Agent agree in writing that a Lender is no longer a Defaulting Lender, Agent will so notify the parties hereto, whereupon as of the effective date specified in such notice

and subject to any conditions set forth therein, such Lender will, to the extent applicable, purchase at par that portion of outstanding Term Loan Advances of the other Lenders or take such other actions as Agent may determine to be necessary to cause the Term Loan Advances to be held on a *pro rata* basis by the Lenders in accordance with their respective Term Loan Commitment Percentages, whereupon such Lender will cease to be a Defaulting Lender; provided that no adjustments will be made retroactively with respect to fees accrued or payments made by or on behalf of Borrower while such Lender was a Defaulting Lender; and provided further that, except to the extent otherwise expressly agreed by the affected parties, no change hereunder from Defaulting Lender to Lender will constitute a waiver or release of any claim of any party hereunder arising from such Lender having been a Defaulting Lender.

(c) Termination of Defaulting Lender. The Borrower may terminate the unused amount of the Term Loan Commitment of any Lender that is a Defaulting Lender upon not less than ten (10) Business Days' prior notice to Agent (which shall promptly notify the Lenders thereof), and in such event the provisions of Section 10.10(a)(ii) will apply to all amounts thereafter paid by Borrower for the account of such Defaulting Lender under this Agreement (whether on account of principal, interest, fees, indemnity or other amounts); provided that (i) no Event of Default shall have occurred and be continuing, and (ii) such termination shall not be deemed to be a waiver or release of any claim Borrower, Agent or any Lender may have against such Defaulting Lender.

(d) If the Person serving as Agent is a Defaulting Lender pursuant to clause (d) of the definition thereof, the non-Defaulting Lenders may, to the extent permitted by applicable law, by notice in writing to Borrower and such Person, remove such Person as Agent and, in consultation with Borrower, appoint a successor. If no such successor shall have been so appointed by the non-Defaulting Lenders and shall have accepted such appointment within thirty (30) days (or such earlier day as shall be agreed by the non-Defaulting Lenders) (the "**Removal Effective Date**"), then such removal shall nonetheless become effective in accordance with such notice on the Removal Effective Date.

## 11 NOTICES

All notices, consents, requests, approvals, demands, or other communication by any party to this Agreement or any other Loan Document must be in writing and shall be deemed to have been validly served, given, or delivered: (a) upon the earlier of actual receipt and three (3) Business Days after deposit in the U.S. mail, first class, registered or certified mail return receipt requested, with proper postage prepaid; (b) upon transmission, when sent by electronic mail or facsimile transmission; (c) one (1) Business Day after deposit with a reputable overnight courier with all charges prepaid; or (d) when delivered, if hand-delivered by messenger, all of which shall be addressed to the party to be notified and sent to the address, facsimile number, or email address indicated below. Agent or Borrower may change its mailing or electronic mail address or facsimile number by giving the other party written notice thereof in accordance with the terms of this Section 11.

If to Borrower: PHATHOM PHARMACEUTICALS, INC.  
70 Willow Road  
Suite 200  
Menlo Park, California 94025  
Attention: David Socks  
Email:

with a copy to: LATHAM & WATKINS LLP  
12670 High Bluff Drive  
San Diego, CA 92130  
Attn: Cheston Larson  
Email: cheston.larson@lw.com

LATHAM & WATKINS LLP  
505 Montgomery Street, Suite 2000  
San Francisco, CA 94111  
Attn: Haim Zaltzman  
Email: haim.zaltzman@lw.com

If to Agent or SVB: Silicon Valley Bank  
4370 La Jolla Village Drive, Suite 1050  
San Diego, California 92122  
Attn: Anthony Flores  
Email:

with a copy to: Morrison & Foerster LLP  
200 Clarendon Street, 20<sup>th</sup> Floor  
Boston, Massachusetts 02116  
Attn: David A. Ephraim, Esquire  
Email:

If to WestRiver: WestRiver Innovation Lending Fund VIII, L.P.  
c/o WestRiver Management, LLC  
3720 Carillon Point  
Kirkland, Washington 98033-7455  
Attn: Trent Dawson  
Email:

## **12 CHOICE OF LAW, VENUE, JURY TRIAL WAIVER, AND JUDICIAL REFERENCE**

Except as otherwise expressly provided in any of the Loan Documents, California law governs the Loan Documents without regard to principles of conflicts of law. Borrower, Agent, and Lenders each submit to the exclusive jurisdiction of the State and Federal courts in Santa Clara County, California; provided, however, that nothing in this Agreement shall be deemed to operate to preclude Agent or Lenders from bringing suit or taking other legal action in any other jurisdiction to realize on the Collateral or any other security for the Obligations, or to enforce a judgment or other court order in favor of Agent or any Lender. Borrower expressly submits and consents in advance to such jurisdiction in any action or suit commenced in any such court, and Borrower hereby waives any objection that it may have based upon lack of personal jurisdiction, improper venue, or forum non conveniens and hereby consents to the granting of such legal or equitable relief as is deemed appropriate by such court. Borrower hereby waives personal service of the summons, complaints, and other process issued in such action or suit and agrees that service of such summons, complaints, and other process may be made by registered or certified mail addressed to Borrower at the address set forth in, or subsequently provided by Borrower in accordance with, Section 11 of this Agreement and that service so made shall be deemed completed upon the earlier to occur of Borrower's actual receipt thereof or three (3) days after deposit in the U.S. mails, proper postage prepaid.

**TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, BORROWER, AGENT AND EACH LENDER EACH WAIVE THEIR RIGHT TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, THE LOAN DOCUMENTS OR ANY CONTEMPLATED TRANSACTION, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. THIS WAIVER IS A MATERIAL INDUCEMENT FOR ALL PARTIES TO ENTER INTO THIS AGREEMENT. EACH PARTY HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.**

WITHOUT INTENDING IN ANY WAY TO LIMIT THE PARTIES' AGREEMENT TO WAIVE THEIR RESPECTIVE RIGHT TO A TRIAL BY JURY, if the above waiver of the right to a trial by jury is not enforceable, the parties hereto agree that any and all disputes or controversies of any nature between them arising at any time shall be decided by a reference to a private judge, mutually selected by the parties (or, if they cannot agree, by the Presiding Judge of the Santa Clara County, California Superior Court) appointed in accordance with California Code of Civil Procedure Section 638 (or pursuant to comparable provisions of federal law if the dispute falls within the exclusive jurisdiction of the federal courts), sitting without a jury, in Santa Clara County, California; and the parties hereby submit to the jurisdiction of such court. The reference proceedings shall be conducted pursuant to and in accordance with the provisions of California Code of Civil Procedure §§ 638 through 645.1, inclusive. The private judge shall have the power, among others, to grant provisional relief, including without limitation, entering temporary restraining orders, issuing preliminary and permanent injunctions and appointing receivers. All such proceedings shall be closed

to the public and confidential and all records relating thereto shall be permanently sealed. If during the course of any dispute, a party desires to seek provisional relief, but a judge has not been appointed at that point pursuant to the judicial reference procedures, then such party may apply to the Santa Clara County, California Superior Court for such relief. The proceeding before the private judge shall be conducted in the same manner as it would be before a court under the rules of evidence applicable to judicial proceedings. The parties shall be entitled to discovery which shall be conducted in the same manner as it would be before a court under the rules of discovery applicable to judicial proceedings. The private judge shall oversee discovery and may enforce all discovery rules and orders applicable to judicial proceedings in the same manner as a trial court judge. The parties agree that the selected or appointed private judge shall have the power to decide all issues in the action or proceeding, whether of fact or of law, and shall report a statement of decision thereon pursuant to California Code of Civil Procedure § 644(a). Nothing in this paragraph shall limit the right of any party at any time to exercise self-help remedies, foreclose against collateral, or obtain provisional remedies. The private judge shall also determine all issues relating to the applicability, interpretation, and enforceability of this paragraph.

This Section 12 shall survive the termination of this Agreement.

### **13 GENERAL PROVISIONS**

**13.1 Termination Prior to Term Loan Maturity Date; Survival.** All covenants, representations and warranties made in this Agreement continue in full force until this Agreement has terminated pursuant to its terms and all Obligations (other than inchoate indemnity obligations, any other obligations which, by their terms, are to survive the termination of this Agreement, and any Obligations under Bank Services Agreements that are cash collateralized in accordance with Section 4.1 of this Agreement) have been satisfied. So long as Borrower has satisfied the Obligations (other than inchoate indemnity obligations, any other obligations which, by their terms, are to survive the termination of this Agreement, and any Obligations under Bank Services Agreements that are cash collateralized in accordance with Section 4.1 of this Agreement), this Agreement may be terminated prior to the Term Loan Maturity Date by Borrower, effective three (3) Business Days after written notice of termination is given to Agent. Those obligations that are expressly specified in this Agreement as surviving this Agreement's termination shall continue to survive notwithstanding this Agreement's termination. No termination of this Agreement shall in any way affect or impair any right or remedy of Agent or any Lender, nor shall any such termination relieve Borrower of any Obligation to any Lender, until all of the Obligations (other than inchoate indemnity obligations, any other obligations which, by their terms, are to survive the termination of this Agreement, and any Obligations under Bank Services Agreements that are cash collateralized in accordance with Section 4.1 of this Agreement) have been paid and performed in full. Those Obligations that are expressly specified in this Agreement as surviving this Agreement's termination shall continue to survive notwithstanding this Agreement's termination and payment in full of the Obligations then outstanding.

**13.2 Successors and Assigns.** This Agreement binds and is for the benefit of the successors and permitted assigns of each party. Borrower may not assign this Agreement or any rights or obligations under it without Agent and Lenders' prior written consent (which may be granted or withheld in Agent's and Lenders' discretion). Agent and each Lender has the right, without the consent of or notice to Borrower, to sell, transfer, assign, negotiate, or grant participation in all or any part of, or any interest in, such Lender's obligations, rights, and benefits under this Agreement and the other Loan Documents (other than the Warrant, as to which assignment, transfer and other such actions are governed by the terms thereof). Notwithstanding the foregoing, so long as no Event of Default shall have occurred and be continuing, the Lenders shall not assign its interest in the Loan Documents to any Person who, in the reasonable estimation of the Lenders is (a) a direct competitor of Borrower or (b) a vulture fund or distressed debt fund. The Agent, acting solely for this purpose as a non-fiduciary agent of Borrower, shall maintain at one of its offices a copy of each assignment delivered to it and a register for the recordation of the names and addresses of the Lenders, and the Commitments of, and principal amounts (and stated interest) of the Term Loan Advances owing to, each Lender pursuant to the terms hereof from time to time (the "**Register**"). The entries in the Register shall be conclusive absent manifest error, and Borrower, Agent and the Lenders shall treat each Person whose name is recorded in the Register pursuant to the terms hereof as a Lender hereunder for all purposes of this Agreement. The Register shall be available for inspection by Borrower and any Lender, at any reasonable time and from time to time upon reasonable prior notice.

**13.3 Indemnification.** Borrower agrees to indemnify, defend and hold Agent, each Lender and their respective directors, officers, employees, agents, attorneys, or any other Person affiliated with or representing Agent or any Lender (each, an “**Indemnified Person**”) harmless against: (i) all obligations, demands, claims, and liabilities (collectively, “**Claims**”) claimed or asserted by any other party in connection with the transactions contemplated by the Loan Documents; and (ii) all losses or expenses (including Lenders’ Expenses) in any way suffered, incurred, or paid by such Indemnified Person as a result of, following from, consequential to, or arising from transactions between Agent, Lenders and Borrower contemplated by the Loan Documents (other than the Warrant or any equity securities issued or issuable under the Warrant) (including reasonable and documented attorneys’ fees and expenses), except for Claims and/or losses directly caused by such Indemnified Person’s gross negligence or willful misconduct. This Section 13.3 shall not apply with respect to Taxes other than any Taxes that represent losses, claims, damages, etc. arising from any non-Tax claim.

This Section 13.3 shall survive until all statutes of limitation with respect to the Claims, losses, and expenses for which indemnity is given shall have run.

**13.4 Time of Essence.** Time is of the essence for the performance of all Obligations in this Agreement.

**13.5 Severability of Provisions.** Each provision of this Agreement is severable from every other provision in determining the enforceability of any provision.

**13.6 Correction of Loan Documents.** Agent may correct patent errors and fill in any blanks in the Loan Documents consistent with the agreement of the parties so long as Agent provides Borrower with written notice of such correction and allows Borrower at least ten (10) days to object to such correction. In the event of such objection, such correction shall not be made except by an amendment signed by each of Agent, each Lender and Borrower.

**13.7 Amendments in Writing; Waiver; Integration.** No purported amendment or modification of any Loan Document, or waiver, discharge or termination of any obligation under any Loan Document, or release, or subordinate Lenders’ security interest in, or consent to the transfer of, any Collateral shall be enforceable or admissible unless, and only to the extent, expressly set forth in a writing signed by Agent, with the consent of the Lenders in accordance with the Lender Intercreditor Agreement or, if such item is not addressed in the Lender Intercreditor Agreement, as consented to by a majority of the Lenders, and Borrower. Without limiting the generality of the foregoing, no oral promise or statement, nor any action, inaction, delay, failure to require performance or course of conduct shall operate as, or evidence, an amendment, supplement or waiver or have any other effect on any Loan Document. Any waiver granted shall be limited to the specific circumstance expressly described in it, and shall not apply to any subsequent or other circumstance, whether similar or dissimilar, or give rise to, or evidence, any obligation or commitment to grant any further waiver. The Loan Documents represent the entire agreement about this subject matter and supersede prior negotiations or agreements. All prior agreements, understandings, representations, warranties, and negotiations between the parties about the subject matter of the Loan Documents merge into the Loan Documents. In the event any provision of any other Loan Document is inconsistent with the provisions of this Agreement, the provisions of this Agreement shall exclusively control.

**13.8 Counterparts.** This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, is an original, and all taken together, constitute one Agreement.

**13.9 Confidentiality** Agent and the Lenders agree to maintain the confidentiality of Information (as defined below) with the same degree of care that it exercises for its own proprietary information, except that Information may be disclosed (a) to Agent and/or any Lender’s subsidiaries or Affiliates, and their respective employees, directors, investors, potential investors, agents, attorneys, accountants and other professional advisors (collectively, “**Representatives**” and, together with Agent and the Lenders, collectively, “**Lender Entities**”) provided that such Lender Entities are bound by the same provisions set forth in this Section 13.9; (b) to prospective transferees, assignees, credit providers or purchasers of any of the Lenders’ or Agent’s interests under or in connection with this Agreement and their Representatives (provided, however, that any prospective transferee or purchaser shall have entered into an agreement containing provisions substantially the same as those in this Section 13.9); (c) as required by law, regulation, subpoena, or other order; (d) to Agent’s or any Lender’s regulators or as otherwise required in connection with Agent’s or any Lender’s examination or audit; (e) as Agent or any Lender reasonably considers

appropriate in exercising remedies under the Loan Documents; and (f) to third-party service providers of Agent and/or the Lenders so long as such service providers have executed a confidentiality agreement with Agent or the Lenders, as applicable, with terms no less restrictive than those contained herein. The term "Information" means all information received from Borrower regarding Borrower or its business, in each case other than information that is either: (i) in the public domain or in Agent's or any Lender's possession when disclosed to Agent or such Lender, or becomes part of the public domain (other than as a result of its disclosure by Agent or a Lender in violation of this Agreement) after disclosure to Agent and/or the Lenders; or (ii) disclosed to Agent and/or the Lenders by a third party, if Agent/the Lenders do not know that the third party is prohibited from disclosing the information.

Lender Entities may use anonymous forms of confidential information for aggregate datasets, for analyses or reporting, and for any other uses not expressly prohibited in writing by Borrower. The provisions of the immediately preceding sentence shall survive the termination of this Agreement.

**13.10 Right of Setoff.** Borrower hereby grants to Agent, for the ratable benefit of the Lenders a Lien and a right of setoff as security for all Obligations to Agent and the Lenders, whether now existing or hereafter arising upon and against all deposits, credits, collateral and property, now or hereafter in the possession, custody, safekeeping or control of Agent or any entity under the control of Agent (including a subsidiary of Agent) in transit to any of them. At any time after the occurrence and during the continuance of an Event of Default, without demand or notice, Agent or any Lender may setoff the same or any part thereof and apply the same to any liability or Obligation of Borrower then due regardless of the adequacy of any other collateral securing the Obligations. ANY AND ALL RIGHTS TO REQUIRE AGENT OR ANY LENDER TO EXERCISE ITS RIGHTS OR REMEDIES WITH RESPECT TO ANY OTHER COLLATERAL WHICH SECURES THE OBLIGATIONS, PRIOR TO EXERCISING ITS RIGHT OF SETOFF WITH RESPECT TO SUCH DEPOSITS, CREDITS OR OTHER PROPERTY OF BORROWER, ARE HEREBY KNOWINGLY, VOLUNTARILY AND IRREVOCABLY WAIVED.

**13.11 Attorneys' Fees, Costs and Expenses.** In any action or proceeding between Borrower and Agent or the Lenders arising out of or relating to the Loan Documents, the prevailing party shall be entitled to recover its reasonable attorneys' fees and other costs and expenses incurred, in addition to any other relief to which it may be entitled.

**13.12 Electronic Execution of Documents.** The words "execution," "signed," "signature" and words of like import in any Loan Document shall be deemed to include electronic signatures or the keeping of records in electronic form, each of which shall be of the same legal effect, validity and enforceability as a manually executed signature or the use of a paper-based recordkeeping systems, as the case may be, to the extent and as provided for in any applicable law, including, without limitation, any state law based on the Uniform Electronic Transactions Act.

**13.13 Captions.** The headings used in this Agreement are for convenience only and shall not affect the interpretation of this Agreement.

**13.14 Construction of Agreement.** The parties mutually acknowledge that they and their attorneys have participated in the preparation and negotiation of this Agreement. In cases of uncertainty this Agreement shall be construed without regard to which of the parties caused the uncertainty to exist.

**13.15 Relationship.** The relationship of the parties to this Agreement is determined solely by the provisions of this Agreement. The parties do not intend to create any agency, partnership, joint venture, trust, fiduciary or other relationship with duties or incidents different from those of parties to an arm's-length contract.

**13.16 Third Parties.** Nothing in this Agreement, whether express or implied, is intended to: (a) confer any benefits, rights or remedies under or by reason of this Agreement on any persons other than the express parties to it and their respective permitted successors and assigns; (b) relieve or discharge the obligation or liability of any person not an express party to this Agreement; or (c) give any person not an express party to this Agreement any right of subrogation or action against any party to this Agreement.

**13.17 Patriot Act.** Each Lender hereby notifies Borrower that pursuant to the requirements of the USA PATRIOT Act, it is required to obtain, verify and record information that identifies Borrower and each of its



Subsidiaries, which information includes the names and addresses of each Borrower and each of its Subsidiaries and other information that will allow Lender, as applicable, to identify Borrower and each of its Subsidiaries in accordance with the USA PATRIOT Act.

## 14 **DEFINITIONS**

**14.1 Definitions.** As used in the Loan Documents, the word “shall” is mandatory, the word “may” is permissive, the word “or” is not exclusive, the words “includes” and “including” are not limiting, the singular includes the plural, and numbers denoting amounts that are set off in brackets are negative. As used in this Agreement, the following capitalized terms have the following meanings:

“**Account**” is, as to any Person, any “**account**” of such Person as “**account**” is defined in the Code with such additions to such term as may hereafter be made, and includes, without limitation, all accounts receivable and other sums owing to such Person.

“**Account Debtor**” is any “**account debtor**” as defined in the Code with such additions to such term as may hereafter be made.

“**Affiliate**” is, with respect to any Person, each other Person that owns or controls directly or indirectly the Person, any Person that controls or is controlled by or is under common control with the Person, and each of that Person’s senior executive officers, directors, partners and, for any Person that is a limited liability company, that Person’s managers and members.

“**Agent**” is defined in the preamble hereof.

“**Agreement**” is defined in the preamble hereof.

“**Authorized Signer**” is any individual listed in Borrower’s Borrowing Resolution who is authorized to execute the Loan Documents, including making (and executing if applicable) any Credit Extension request, on behalf of Borrower.

“**Bank Services**” are any products, credit services, and/or financial accommodations previously, now, or hereafter provided to Borrower or any of its Subsidiaries by SVB or any SVB Affiliate, including, without limitation, any letters of credit, cash management services (including, without limitation, merchant services, direct deposit of payroll, business credit cards, and check cashing services), interest rate swap arrangements, and foreign exchange services as any such products or services may be identified in SVB’s various agreements related thereto (each, a “**Bank Services Agreement**”).

“**Bank Services Agreement**” is defined in the definition of Bank Services.

“**Board**” means Borrower’s board of directors.

“**Borrower**” is defined in the preamble hereof.

“**Borrower’s Books**” are all Borrower’s books and records including ledgers, federal and state Tax returns, records regarding Borrower’s assets or liabilities, the Collateral, business operations or financial condition, and all computer programs or storage or any equipment containing such information.

“**Borrowing Resolutions**” are, with respect to any Person, those resolutions adopted by such Person’s board of directors (and, if required under the terms of such Person’s Operating Documents, stockholders) and delivered by such Person to Agent approving the Loan Documents to which such Person is a party and the transactions contemplated thereby, together with a certificate executed by its secretary on behalf of such Person certifying (a) such Person has the authority to execute, deliver, and perform its obligations under each of the Loan Documents to which it is a party, (b) that set forth as a part of or attached as an exhibit to such certificate is a true, correct, and complete copy of the resolutions then in full force and effect authorizing and ratifying the execution, delivery, and performance

by such Person of the Loan Documents to which it is a party, (c) the name(s) of the Person(s) authorized to execute the Loan Documents, including making (and executing if applicable) any Credit Extension request, on behalf of such Person, together with a sample of the true signature(s) of such Person(s), and (d) that Agent and the Lenders may conclusively rely on such certificate unless and until such Person shall have delivered to Agent and the Lenders a further certificate canceling or amending such prior certificate.

“**Business Day**” is any day that is not a Saturday, Sunday or a day on which Agent is closed.

“**Cash Equivalents**” means (a) marketable direct obligations issued or unconditionally guaranteed by the United States or any agency or any State thereof having maturities of not more than one (1) year from the date of acquisition; (b) commercial paper maturing no more than one (1) year after its creation and having the highest rating from either Standard & Poor’s Ratings Group or Moody’s Investors Service, Inc.; (c) SVB’s certificates of deposit issued maturing no more than one (1) year after issue; and (d) money market funds at least ninety-five percent (95.0%) of the assets of which constitute Cash Equivalents of the kinds described in clauses (a) through (c) of this definition.

“**Change in Control**” means (a) at any time, any “person” or “group” (as such terms are used in Sections 13(d) and 14(d) of the Exchange Act), shall become, or obtain rights (whether by means of warrants, options or otherwise) to become, the “beneficial owner” (as defined in Rules 13(d)-3 and 13(d)-5 under the Exchange Act), directly or indirectly, of forty-nine percent (49.0%) or more of the ordinary voting power for the election of directors of Borrower (determined on a fully diluted basis) other than by the sale of Borrower’s equity securities in a public offering or to venture capital or private equity investors so long as Borrower identifies to the Agent and the Lenders the venture capital or private equity investors at least seven (7) Business Days prior to the closing of the transaction and provides to Agent and the Lenders a description of the material terms of the transaction; (b) except for a change in the members of the Board or other equivalent body of Borrower resulting from the sale of Borrower’s equity securities in a public offering or to venture capital or private equity investors so long as Borrower identifies to Agent the venture capital or private equity investors at least seven (7) Business Days prior to the closing of the transaction and provides to Agent a description of the material terms of the transaction, during any period of twelve (12) consecutive months, a majority of the members of the board of directors or other equivalent governing body of Borrower cease to be composed of individuals (i) who were members of that board or equivalent governing body on the first day of such period, (ii) whose election or nomination to that board or equivalent governing body was approved by individuals referred to in clause (i) above constituting at the time of such election or nomination at least a majority of that board or equivalent governing body or (iii) whose election or nomination to that board or other equivalent governing body was approved by individuals referred to in clauses (i) and (ii) above constituting at the time of such election or nomination at least a majority of that board or equivalent governing body; or (c) at any time, Borrower shall cease to own and control, of record and beneficially, directly or indirectly, one hundred percent (100.0%) of each class of outstanding capital stock of each Subsidiary of Borrower (unless such Subsidiary is dissolved, merged, consolidated or liquidated into a co-borrower) free and clear of all Liens (except Liens created by this Agreement).

“**Claims**” is defined in Section 13.3.

“**Code**” is the Uniform Commercial Code, as the same may, from time to time, be enacted and in effect in the State of California; provided, that, to the extent that the Code is used to define any term herein or in any Loan Document and such term is defined differently in different Articles or Divisions of the Code, the definition of such term contained in Article or Division 9 shall govern; provided further, that in the event that, by reason of mandatory provisions of law, any or all of the attachment, perfection, or priority of, or remedies with respect to, Agent’s Lien on any Collateral is governed by the Uniform Commercial Code in effect in a jurisdiction other than the State of California, the term “Code” shall mean the Uniform Commercial Code as enacted and in effect in such other jurisdiction solely for purposes of the provisions thereof relating to such attachment, perfection, priority, or remedies and for purposes of definitions relating to such provisions.

“**Collateral**” is any and all properties, rights and assets of Borrower described on Exhibit A.

“**Collateral Account**” is any Deposit Account, Securities Account, or Commodity Account.

“**Commitment**” and “**Commitments**” means the Term Loan Commitment(s).

“**Commodity Account**” is any “commodity account” as defined in the Code with such additions to such term as may hereafter be made.

“**Compliance Certificate**” is that certain certificate in the form attached hereto as Exhibit B.

“**Contingent Obligation**” is, for any Person, any direct or indirect liability, contingent or not, of that Person for (a) any indebtedness, lease, dividend, letter of credit or other obligation of another such as an obligation, in each case, directly or indirectly guaranteed, endorsed, co-made, discounted or sold with recourse by that Person, or for which that Person is directly or indirectly liable; (b) any obligations for undrawn letters of credit for the account of that Person; and (c) all obligations from any interest rate, currency or commodity swap agreement, interest rate cap or collar agreement, or other agreement or arrangement designated to protect a Person against fluctuation in interest rates, currency exchange rates or commodity prices; but “Contingent Obligation” does not include endorsements in the ordinary course of business. The amount of a Contingent Obligation is the stated or determined amount of the primary obligation for which the Contingent Obligation is made or, if not determinable, the maximum reasonably anticipated liability for it determined by the Person in good faith; but the amount may not exceed the maximum of the obligations under any guarantee or other support arrangement.

“**Control Agreement**” is any control agreement entered into among the depository institution at which Borrower maintains a Deposit Account or the securities intermediary or commodity intermediary at which Borrower maintains a Securities Account or a Commodity Account, Borrower, and Agent pursuant to which Agent obtains control (within the meaning of the Code) for the benefit of the Lenders over such Deposit Account, Securities Account, or Commodity Account.

“**Copyrights**” are any and all copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret.

“**Credit Extension**” is any Term Loan Advance, or any other extension of credit by any Lender for Borrower’s benefit.

“**Default Rate**” is defined in Section 2.3(b).

“**Defaulting Lender**” is, subject to Section 10.10(b), any Lender that (a) has failed to (i) fund all or any portion of its Term Loan Advances within two (2) Business Days of the date such Term Loan Advances were required to be funded hereunder unless such Lender notifies Agent and Borrower in writing that such failure is the result of such Lender’s reasonable determination that one or more conditions precedent to funding (each of which conditions precedent, together with any applicable default, shall be specifically identified in such writing) has not been satisfied, or (ii) pay to Agent or any other Lender any other amount required to be paid by it hereunder within two (2) Business Days of the date when due, (b) has notified Borrower or Agent in writing that it does not intend to comply with its funding obligations hereunder, or has made a public statement to that effect (unless such writing or public statement relates to such Lender’s obligation to fund a Term Loan Advance hereunder and states that such position is based on such Lender’s reasonable determination that a condition precedent to funding (which condition precedent, together with any applicable default, shall be specifically identified in such writing or public statement) cannot be satisfied), (c) has failed, within three (3) Business Days after written request by Agent or Borrower, to confirm in writing to Agent and Borrower that it will comply with its prospective funding obligations hereunder (provided that such Lender shall cease to be a Defaulting Lender pursuant to this clause (c) upon receipt of such written confirmation by Agent and Borrower), or (d) has, or has a direct or indirect parent company that has, (i) become the subject of an Insolvency Proceeding, or (ii) had appointed for it a receiver, custodian, conservator, trustee, administrator, assignee for the benefit of creditors or similar Person charged with reorganization or liquidation of its business or assets, including the Federal Deposit Insurance Corporation or any other state or federal regulatory authority acting in such a capacity; provided that a Lender shall not be a Defaulting Lender solely by virtue of the ownership or acquisition of any equity interest in that Lender or any direct or indirect parent company thereof by a Governmental Authority so long as such ownership interest does not result in or provide such Lender with immunity from the jurisdiction of courts within the United States or from the enforcement of judgments or writs of attachment on its assets or permit such Lender (or such Governmental Authority) to reject, repudiate, disavow or disaffirm any contracts or agreements made with such Lender. Any determination by Agent that a Lender is a Defaulting Lender under any one or more of clauses (a)

through (d) above shall be conclusive and binding absent manifest error, and such Lender shall be deemed to be a Defaulting Lender (subject to Section 10.10(b)) upon delivery of written notice of such determination to Borrower and each Lender.

“**Deposit Account**” is any “**deposit account**” as defined in the Code with such additions to such term as may hereafter be made.

“**Designated Deposit Account**” is the account number ending 321 (last three digits) maintained by Borrower with SVB (provided, however, if no such account number is included, then the Designated Deposit Account shall be any deposit account of Borrower maintained with SVB as chosen by the Lenders).

“**Disbursement Letter**” is that certain form attached hereto as Exhibit D.

“**Division**” means, in reference to any Person which is an entity, the division of such Person into two (2) or more separate Persons, with the dividing Person either continuing or terminating its existence as part of such division, including, without limitation, as contemplated under Section 18-217 of the Delaware Limited Liability Company Act for limited liability companies formed under Delaware law, or any analogous action taken pursuant to any other applicable law with respect to any corporation, limited liability company, partnership or other entity.

“**Dollars,**” “**dollars**” or use of the sign “\$” means only lawful money of the United States and not any other currency, regardless of whether that currency uses the “\$” sign to denote its currency or may be readily converted into lawful money of the United States.

“**Dollar Equivalent**” is, at any time, (a) with respect to any amount denominated in Dollars, such amount, and (b) with respect to any amount denominated in a Foreign Currency, the equivalent amount therefor in Dollars as determined by Agent at such time on the basis of the then-prevailing rate of exchange in San Francisco, California, for sales of the Foreign Currency for transfer to the country issuing such Foreign Currency.

“**Domestic Subsidiary**” means a Subsidiary organized under the laws of the United States or any state or territory thereof or the District of Columbia.

“**Draw Period**” is the period of time commencing upon the occurrence of the Milestone Event and continuing through the earlier to occur of (a) March 31, 2020, and (b) an Event of Default.

“**Effective Date**” is defined in the preamble hereof.

“**Equipment**” is all “**equipment**” as defined in the Code with such additions to such term as may hereafter be made, and includes without limitation all machinery, fixtures, goods, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing.

“**Equity Event**” means Borrower has provided Agent with evidence, on or prior to March 31, 2020, that Borrower has received, after April 1, 2019, but on or prior to March 31, 2020, unrestricted and unencumbered net cash proceeds in an amount of at least One Hundred Fifty Million Dollars (\$150,000,000.00) (inclusive of proceeds received in connection with the Subordinated Debt Event) from the issuance and sale by Borrower of its equity securities or Subordinated Debt to investors reasonably acceptable to Agent.

“**ERISA**” is the Employee Retirement Income Security Act of 1974, and its regulations.

“**Event of Default**” is defined in Section 8.

“**Exchange Act**” is the Securities Exchange Act of 1934, as amended.

“**Excluded Taxes**” shall mean any of the following Taxes imposed on or with respect to a Recipient or required to be withheld or deducted from a payment to a Recipient, (a) Taxes imposed on or measured by net income (however denominated), franchise Taxes, and branch profits Taxes, in each case, (i) imposed as a result of such

Recipient being organized under the laws of, or having its principal office or, in the case of any Lender, its applicable lending office located in, the jurisdiction imposing such Tax (or any political subdivision thereof) or (ii) that are Other Connection Taxes, (b) in the case of a Lender, U.S. federal withholding Taxes imposed on amounts payable to or for the account of such Lender with respect to an applicable interest in a Term Loan Advance or Commitment pursuant to a law in effect on the date on which (i) such Lender acquires such interest in the Term Loan Advance or Commitment or (ii) such Lender changes its lending office, except in each case to the extent that, pursuant to Section 2.7 amounts with respect to such Taxes were payable either to such Lender's assignor immediately before such Lender became a party hereto or to such Lender immediately before it changed its lending office, (c) Taxes attributable to such Recipient's failure to comply with Section 2.7(f) and (d) any withholding Taxes imposed under FATCA.

“**FATCA**” shall mean Sections 1471 through 1474 of the Internal Revenue Code, as of the date of this Agreement (or any amended or successor version that is substantively comparable and not materially more onerous to comply with), any current or future regulations or official interpretations thereof, any agreements entered into pursuant to Section 1471(b)(1) of the Internal Revenue Code and any fiscal or regulatory legislation, rules or practices adopted pursuant to any intergovernmental agreement, treaty or convention among Governmental Authorities and implementing such Sections of the Internal Revenue Code.

“**FDA**” shall mean the United States Food and Drug Administration, and any successor thereto.

“**Federal Funds Effective Rate**” means, for any day, the weighted average of the rates on overnight federal funds transactions with members of the Federal Reserve System arranged by federal funds brokers, as published on the next succeeding Business Day by the Federal Reserve Bank of New York, or, if such rate is not so published for any day that is a Business Day, the average of the quotations for the day of such transactions received by SVB from three federal funds brokers of recognized standing selected by it.

“**Final Payment**” is a payment (in addition to and not in substitution for the regular monthly payments of principal plus accrued interest) equal to the original principal amount of each Term Loan Advance extended by the Lenders to Borrower hereunder multiplied by eight and one-quarter of one percent (8.25%) due on the earliest to occur of (a) the Term Loan Maturity Date, (b) the acceleration of the Term Loan Advances, (c) the prepayment of the Term Loan Advances pursuant to Section 2.2(d) or 2.2(e), or (d) the termination of this Agreement.

“**Financial Statements**” is defined in Section 6.2(a).

“**Foreign Currency**” means lawful money of a country other than the United States.

“**Foreign Lender**” means (a) if Borrower is a U.S. Person, a Recipient that is not a U.S. Person, and (b) if Borrower is not a U.S. Person, a Recipient that is resident or organized under the laws of a jurisdiction other than that in which Borrower is resident for tax purposes.

“**Foreign Subsidiary**” means any Subsidiary which is not a Domestic Subsidiary.

“**Funding Date**” is any date on which a Credit Extension is made to or for the account of Borrower which shall be a Business Day.

“**FX Contract**” is any foreign exchange contract by and between Borrower and SVB under which Borrower commits to purchase from or sell to SVB a specific amount of Foreign Currency on a specified date.

“**GAAP**” is generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board or in such other statements by such other Person as may be approved by a significant segment of the accounting profession, which are applicable to the circumstances as of the date of determination.

“**General Intangibles**” is all “general intangibles” as defined in the Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes without limitation, all Intellectual Property, claims,

income and other tax refunds, security and other deposits, payment intangibles, contract rights, options to purchase or sell real or personal property, rights in all litigation presently or hereafter pending (whether in contract, tort or otherwise), insurance policies (including without limitation key man, property damage, and business interruption insurance), payments of insurance and rights to payment of any kind.

“**Governmental Approval**” is any consent, authorization, approval, order, license, franchise, permit, certificate, accreditation, registration, filing or notice, of, issued by, from or to, or other act by or in respect of, any Governmental Authority.

“**Governmental Authority**” is any nation or government, any state or other political subdivision thereof, any agency, authority, instrumentality, regulatory body, court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative functions of or pertaining to government, any securities exchange and any self-regulatory organization.

“**Group Member**” means Borrower and its Subsidiaries.

“**Indebtedness**” is (a) indebtedness for borrowed money or the deferred price of property or services, such as reimbursement and other obligations for surety bonds and letters of credit, (b) obligations evidenced by notes, bonds, debentures or similar instruments, (c) capital lease obligations, and (d) Contingent Obligations.

“**Indemnified Person**” is defined in Section 13.3.

“**Indemnified Taxes**” means (a) Taxes, other than Excluded Taxes, imposed on or with respect to any payment made by or on account of any obligation of Borrower under any Loan Document (excluding the Warrant) and (b) to the extent not otherwise described in (a), Other Taxes.

“**Initiation Event**” means Borrower has provided Agent, on or prior to March 31, 2020, with evidence reasonably satisfactory to Agent in Agent’s reasonable discretion that Borrower has initiated phase 3 clinical trials for Vonoprazan.

“**Insolvency Proceeding**” is any proceeding by or against any Person under the United States Bankruptcy Code, or any other bankruptcy or insolvency law, including assignments for the benefit of creditors, compositions, extensions generally with its creditors, or proceedings seeking reorganization, arrangement, or other relief.

“**Intellectual Property**” means, with respect to any Person, all of such Person’s right, title, and interest in and to the following:

- (a) its Copyrights, Trademarks and Patents;
- (b) any and all trade secrets and trade secret rights, including, without limitation, any rights to unpatented inventions, know-how and operating manuals;
- (c) any and all source code;
- (d) any and all design rights which may be available to such Person;
- (e) any and all claims for damages by way of past, present and future infringement of any of the foregoing, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the Intellectual Property rights identified above; and
- (f) all amendments, renewals and extensions of any of the Copyrights, Trademarks or Patents.

“**Internal Revenue Code**” shall mean the U.S. Internal Revenue Code of 1986, as amended.

**“Inventory”** is all **“inventory”** as defined in the Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes without limitation all merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products, including without limitation such inventory as is temporarily out of Borrower’s custody or possession or in transit and including any returned goods and any documents of title representing any of the above.

**“Investment”** is any beneficial ownership interest in any Person (including stock, partnership interest or other securities), and any loan, advance or capital contribution to any Person.

**“IPO”** means Borrower’s initial, underwritten public offering and sale of its common or ordinary shares pursuant to an effective registration statement under the Securities Act of 1933, as amended.

**“IRS”** means the U.S. Internal Revenue Service.

**“Key Person”** is each of Borrower’s (a) Chief Executive Officer, who is David Socks as of the Effective Date, and (b) Chief Financial Officer.

**“Lender”** and **“Lenders”** is defined in the preamble.

**“Lender Entities”** is defined in Section 13.9.

**“Lender Intercreditor Agreement”** is, collectively, any and all intercreditor agreement, master arrangement agreement or similar agreement by and between WestRiver and SVB, as each may be amended from time to time in accordance with the provisions thereof.

**“Lenders’ Expenses”** are all of Agent’s and the Lenders’ documented audit fees and reasonable and documented expenses, costs, and expenses (including reasonable and documented attorneys’ fees and expenses) for preparing, amending, negotiating, administering, defending and enforcing the Loan Documents (including, without limitation, those incurred in connection with appeals or Insolvency Proceedings) or otherwise incurred with respect to Borrower.

**“Letter of Credit”** is a standby or commercial letter of credit issued by SVB upon request of Borrower based upon an application, guarantee, indemnity, or similar agreement.

**“Lien”** is a claim, mortgage, deed of trust, levy, charge, pledge, security interest or other encumbrance of any kind, whether voluntarily incurred or arising by operation of law or otherwise against any property.

**“Loan Documents”** are, collectively, this Agreement and any schedules, exhibits, certificates, notices, and any other documents related to this Agreement, the Perfection Certificate, each Disbursement Letter, the Warrant, any Bank Services Agreement, any Control Agreement, any subordination agreement, any note, or notes or guaranties executed by Borrower, and any other present or future agreement by Borrower with or for the benefit of Agent and the Lenders in connection with this Agreement or Bank Services, all as amended, restated, or otherwise modified. For the avoidance of doubt, “Loan Documents” shall not include the Lender Intercreditor Agreement.

**“Material Adverse Change”** is (a) a material impairment in the perfection or priority of Agent’s, for the ratable benefit of the Lenders, Lien in the Collateral or in the value of such Collateral; (b) a material adverse change in the business, operations, or financial condition of Borrower; or (c) a material impairment of the prospect of repayment of any portion of the Obligations.

**“Milestone Event”** means Borrower has provided Agent with evidence, on or prior to March 31, 2020, reasonably satisfactory to Agent that both the Equity Event and the Initiation Event have occurred.

**“NDA”** means a new drug application.

**“Obligations”** are Borrower’s obligations to pay when due any debts, principal, interest, fees, Lenders’ Expenses, the Final Payment, the Prepayment Premium and other amounts Borrower owes Agent or any Lender now

or later, whether under this Agreement, the other Loan Documents (other than the Warrant or any equity securities issued or issuable under the Warrant), or otherwise, including, without limitation, all obligations relating to Bank Services, if any, and including any interest accruing after Insolvency Proceedings begin and debts, liabilities, or obligations of Borrower assigned to Agent and/or the Lenders, and to perform Borrower's duties under the Loan Documents (other than the Warrant or any equity securities issued or issuable under the Warrant).

**"Operating Documents"** are, for any Person, such Person's formation documents, as certified by the Secretary of State (or equivalent agency) of such Person's jurisdiction of organization on a date that is no earlier than thirty (30) days prior to the Effective Date, and, (a) if such Person is a corporation, its bylaws in current form, (b) if such Person is a limited liability company, its limited liability company agreement (or similar agreement), and (c) if such Person is a partnership, its partnership agreement (or similar agreement), each of the foregoing with all current amendments or modifications thereto.

**"Other Connection Taxes"** means, with respect to any Recipient, Taxes imposed as a result of a present or former connection between such Recipient and the jurisdiction imposing such Tax (other than connections arising from such Recipient having executed, delivered, become a party to, performed its obligations under, received payments under, received or perfected a security interest under, engaged in any other transaction pursuant to or enforced any Loan Document, or sold or assigned an interest in any Term Loan Advance, Commitment or Loan Document).

**"Other Taxes"** means all present or future stamp, court or documentary, intangible, recording, filing or similar Taxes that arise from any payment made under, from the execution, delivery, performance, enforcement or registration of, from the receipt or perfection of a security interest under, or otherwise with respect to, any Loan Document, except any such Taxes that are Other Connection Taxes imposed with respect to an assignment.

**"Patents"** means all patents, patent applications and like protections including without limitation improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same.

**"Payment/Advance Form"** is that certain form attached hereto as Exhibit C.

**"Payment Date"** is the first (1<sup>st</sup>) calendar day of each month.

**"Perfection Certificate"** is defined in Section 5.1.

**"Permitted Indebtedness"** is:

- (a) Borrower's Indebtedness to Agent and the Lenders under this Agreement and the other Loan Documents;
- (b) Indebtedness existing on the Effective Date which is shown on the Perfection Certificate;
- (c) Subordinated Debt;
- (d) unsecured Indebtedness to trade creditors incurred in the ordinary course of business;
- (e) Indebtedness incurred as a result of endorsing negotiable instruments received in the ordinary course of business;
- (f) Indebtedness secured by Liens permitted under clauses (a) and (c) of the definition of "Permitted Liens" hereunder;

(g) unsecured reimbursement obligations in connection with letters of credit related to real property or manufacturing obligations in the ordinary course of business not exceeding One Million Dollars (\$1,000,000.00) in the aggregate outstanding at any time;



(h) (i) unsecured Indebtedness of Borrower to any Subsidiary which is a co-borrower hereunder; (ii) Contingent Obligations of any Subsidiary with respect to obligations of Borrower (provided that the primary obligations are not prohibited hereby); (iii) Indebtedness of any Subsidiary to Borrower; (iv) Indebtedness of any Foreign Subsidiary to any other Subsidiary or to Borrower in an aggregate principal amount not to exceed One Million Dollars (\$1,000,000.00) in any fiscal year; and (v) Contingent Obligations of any Subsidiary with respect to obligations of any other Subsidiary (provided that the primary obligations are not prohibited hereby);

(i) other unsecured Indebtedness not otherwise permitted by Section 7.4 not exceeding Five Hundred Thousand Dollars (\$500,000.00) in the aggregate outstanding at any time; and

(j) extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness (a) through (g) above, provided that the principal amount thereof is not increased or the terms thereof are not modified to impose more burdensome terms upon Borrower or its Subsidiary, as the case may be.

**“Permitted Investments”** are:

(a) Investments (including, without limitation, Subsidiaries) existing on the Effective Date which are shown on the Perfection Certificate;

(b) (i) Investments consisting of Cash Equivalents and (ii) any Investments permitted by Borrower’s investment policy (if applicable), as amended from time to time, provided that such investment policy (and any such amendment thereto) has been approved in writing by Agent;

(c) Investments consisting of the endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of Borrower;

(d) Investments consisting of deposit and/or securities accounts (but only to the extent that Borrower is permitted to maintain such accounts pursuant to Section 6.6 of this Agreement) in which, to the extent required pursuant to Section 6.6, Agent has a first priority perfected security interest;

(e) Investments accepted in connection with Transfers permitted by Section 7.1;

(f) Investments consisting of (i) travel advances and employee relocation loans and other employee loans and advances in the ordinary course of business, and (ii) loans to employees, officers or directors relating to the purchase of equity securities of Borrower or its Subsidiaries pursuant to employee stock purchase plans or agreements approved by the Board;

(g) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the ordinary course of business;

(h) Investments consisting of notes receivable of, or prepaid royalties and other credit extensions, to customers and suppliers who are not Affiliates, in the ordinary course of business; provided that this paragraph (h) shall not apply to Investments of Borrower in any Subsidiary;

(i) (i) Investments by Borrower in Subsidiaries, including the creation of a Subsidiary, provided that such Subsidiary becomes a co-borrower to this Agreement in accordance with Section 6.12 hereof, (ii) Investments by Borrower in Foreign Subsidiaries provided that such Investments shall not exceed One Million Dollars (\$1,000,000.00) in the aggregate in any fiscal year, and (iii) in each case of (i) and (ii), no Event of Default exists at the time of any such Investment and would not result from any such Investment;

(j) Investments in connection with joint ventures or strategic alliances in the ordinary course of Borrower’s business consisting of the non-exclusive licensing of technology, the development of technology or the providing of technical support, provided that any cash investments by Borrower do not exceed Five Hundred Thousand Dollars (\$500,000.00) in any twelve (12) month period; and

(k) other Investments not otherwise permitted by Section 7.7 not exceeding Five Hundred Thousand Dollars (\$500,000.00) in the aggregate outstanding at any time.

**“Permitted Liens”** are:

(a) Liens existing on the Effective Date which are shown on the Perfection Certificate or arising under this Agreement and the other Loan Documents;

(b) Liens for Taxes, fees, assessments or other government charges or levies, either (i) not due and payable or (ii) being contested in good faith and for which Borrower maintains adequate reserves on its Books, provided that no notice of any such Lien has been filed or recorded under the Internal Revenue Code of 1986, as amended, and the Treasury Regulations adopted thereunder;

(c) purchase money Liens or capital leases (i) on Equipment acquired or held by Borrower incurred for financing the acquisition of the Equipment securing no more than Five Hundred Thousand Dollars (\$500,000.00) in the aggregate amount outstanding, or (ii) existing on Equipment when acquired, if the Lien is confined to the property and improvements and the proceeds of the Equipment;

(d) Liens incurred in the extension, renewal or refinancing of the indebtedness secured by Liens described in (a) through (c), but any extension, renewal or replacement Lien must be limited to the property encumbered by the existing Lien and the principal amount of the indebtedness may not increase;

(e) Liens of carriers, warehousemen, suppliers, or other Persons that are possessory in nature arising in the ordinary course of business so long as such Liens attach only to Inventory, securing liabilities in the aggregate amount not to exceed Five Hundred Thousand Dollars (\$500,000.00) and which are not delinquent or remain payable without penalty or which are being contested in good faith and by appropriate proceedings which proceedings have the effect of preventing the forfeiture or sale of the property subject thereto;

(f) Liens to secure payment of workers' compensation, employment insurance, old-age pensions, social security and other like obligations incurred in the ordinary course of business (other than Liens imposed by ERISA);

(g) Liens incurred in the extension, renewal or refinancing of the Indebtedness secured by Liens described in (a) through (c), but any extension, renewal or replacement Lien must be limited to the property encumbered by the existing Lien and the principal amount of the indebtedness may not increase;

(h) (i) non-exclusive licenses for the use of the property of Borrower or its Subsidiaries in the ordinary course of business and (ii) licenses that could not result in a legal transfer of title of the licensed property but that may be exclusive as to limited fields of use for commercialization, sales and marketing purposes, geographic territories outside of the United States and/or time periods in the ordinary course of business;

(i) Liens arising from attachments or judgments, orders, or decrees in circumstances not constituting an Event of Default under Sections 8.4 and 8.7; and

(j) Liens in favor of other financial institutions arising in connection with Borrower's deposit and/or securities accounts held at such institutions, provided that (i) Agent has a first priority perfected security interest in the amounts held in such deposit and/or securities accounts and (ii) such accounts are permitted to be maintained pursuant to Section 6.6 of this Agreement.

**"Person"** is any individual, sole proprietorship, partnership, limited liability company, joint venture, company, trust, unincorporated organization, association, corporation, institution, public benefit corporation, firm, joint stock company, estate, entity or government agency.

**"Positive Data Event"** means Borrower has provided Agent, on or prior to June 1, 2021, with evidence reasonably satisfactory to Agent in Agent's reasonable discretion that Borrower has received positive data with respect to Borrower's phase 3 clinical trial in both indications for Vonoprazan sufficient to file an NDA with the FDA.

**"Prepayment Premium"** shall be an additional fee, payable to Agent, for the ratable benefit of the Lenders based on their Pro Rata Share, with respect to the Term Loan Advances, in an amount equal to:

(a) for a prepayment of the Term Loan Advances made on or prior to the first (1<sup>st</sup>) anniversary of the Effective Date, two percent (2.0%) of the outstanding principal amount of the Term Loan Advances being prepaid;

(b) for a prepayment of the Term Loan Advances made after the first (1<sup>st</sup>) anniversary of the Effective Date, but on or prior to the second (2<sup>nd</sup>) anniversary of the Effective Date, one percent (1.0%) of the outstanding principal amount of the Term Loan Advances being prepaid; and

(c) for a prepayment of the Term Loan Advances made after the second (2<sup>nd</sup>) anniversary of the Effective Date, but prior to the Term Loan Maturity Date, zero percent (0.0%) of the outstanding principal amount of the Term Loan Advances being prepaid.

“**Prime Rate**” is the rate of interest per annum from time to time published in the money rates section of The Wall Street Journal or any successor publication thereto as the “prime rate” then in effect; provided that, in the event such rate of interest is less than zero, such rate shall be deemed to be zero for purposes of this Agreement; and provided further that if such rate of interest, as set forth from time to time in the money rates section of The Wall Street Journal, becomes unavailable for any reason as determined by Agent, the “Prime Rate” shall mean the rate of interest per annum announced by SVB as its prime rate in effect at its principal office in the State of California (such SVB announced Prime Rate not being intended to be the lowest rate of interest charged by SVB in connection with extensions of credit to debtors); provided that, in the event such rate of interest is less than zero, such rate shall be deemed to be zero for purposes of this Agreement.

“**Pro Rata Share**” is, as of any date of determination, with respect to each Lender, a percentage (expressed as a decimal, rounded to the ninth decimal place) determined by *dividing* the outstanding principal amount of Term Loan Advances held by such Lender by the aggregate outstanding principal amount of all Term Loan Advances.

“**Recipient**” means Agent or any Lender.

“**Register**” is defined in Section 13.2.

“**Registered Organization**” is any “registered organization” as defined in the Code with such additions to such term as may hereafter be made.

“**Removal Effective Date**” is defined in Section 10.10(d).

“**Representative**” is defined in Section 13.9.

“**Repayment Schedule**” means the period of time equal to thirty-six (36) consecutive months; provided, however, upon the occurrence of the Positive Data Event, the Repayment Schedule shall mean the period of time equal to twenty-four (24) consecutive months.

“**Requirement of Law**” is as to any Person, the organizational or governing documents of such Person, and any law (statutory or common), treaty, rule or regulation or determination of an arbitrator or a court or other Governmental Authority, in each case applicable to or binding upon such Person or any of its property or to which such Person or any of its property is subject.

“**Responsible Officer**” is any of the Chief Executive Officer, President, Chief Financial Officer, and Controller of Borrower.

“**Restricted License**” is any material license or other agreement with respect to which Borrower is the licensee (a) that prohibits or otherwise restricts Borrower from granting a security interest in Borrower’s interest in such license or agreement or any other property, or (b) for which a default under or termination of could interfere with the Agent’s right to sell any Collateral.

“**SEC**” shall mean the Securities and Exchange Commission, any successor thereto, and any analogous Governmental Authority.

“**Securities Account**” is any “**securities account**” as defined in the Code with such additions to such term as may hereafter be made.

“**Subordinated Debt**” is indebtedness incurred by Borrower subordinated to all of Borrower’s now or hereafter indebtedness to Agent and the Lenders (pursuant to a subordination, intercreditor, or other similar agreement in form and substance satisfactory to Agent and the Lenders entered into between Agent, the Lenders and the other creditor), on terms acceptable to Agent and the Lenders.

“**Subordinated Debt Event**” means Borrower has provided Agent with evidence satisfactory to Agent in Agent’s reasonable discretion, that Borrower has received, after April 1, 2019, but on or prior to the Effective Date, unrestricted and unencumbered net cash proceeds in an amount of at least Seventy-Five Million Dollars (\$75,000,000.00) from Subordinated Debt.

“**Subsidiary**” is, as to any Person, a corporation, partnership, limited liability company or other entity of which shares of stock or other ownership interests having ordinary voting power (other than stock or such other ownership interests having such power only by reason of the happening of a contingency) to elect a majority of the board of directors or other managers of such corporation, partnership or other entity are at the time owned, or the management of which is otherwise controlled, directly or indirectly through one or more intermediaries, or both, by such Person. Unless the context otherwise requires, each reference to a Subsidiary herein shall be a reference to a Subsidiary of Borrower.

“**SVB**” is defined in the preamble hereof.

“**Tax**” and “**Taxes**” shall mean all present or future taxes, levies, imposts, duties, deductions, withholdings (including backup withholding), assessments, fees or other charges imposed by any Governmental Authority, including any interest, additions to tax or penalties applicable thereto.

“**Term A Loan Advance**” is defined in Section 2.2(a).

“**Term B Loan Advance**” is defined in Section 2.2(a).

“**Term Loan Advance**” and “**Term Loan Advances**” are each defined in Section 2.2(a).

“**Term Loan Amortization Date**” is June 1, 2021; provided, however, upon the occurrence of the Positive Data Event, the Term Loan Amortization Date shall be June 1, 2022.

“**Term Loan Commitment**” means, for any Lender, the obligation of such Lender to make a Term Loan Advance as and when available, up to the principal amount shown on Schedule 1. “**Term Loan Commitments**” means the aggregate amount of such commitments of all Lenders.

“**Term Loan Commitment Percentage**” means, as to any Lender at any time, the percentage (carried out to the fourth decimal place) of the Term Loan Commitments represented by such Lender’s Term Loan Commitment at such time. The initial Term Loan Commitment Percentage of each Lender is set forth opposite the name of such Lender on Schedule 1.

“**Term Loan Maturity Date**” is May 1, 2024.

“**Trademarks**” means any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Borrower connected with and symbolized by such trademarks.

“**Transfer**” is defined in Section 7.1.

“**U.S. Person**” means any Person that is a “United States Person” as defined in Section 7701(a)(30) of the Internal Revenue Code.

“**Warrant**” means, collectively, (a) that certain warrant to purchase stock dated as of the Effective Date between Borrower and SVB and (b) that certain warrant to purchase stock dated as of the Effective Date between Borrower and WestRiver, in each case, as may be amended, modified, supplemented and/or restated from time to time.

“**WestRiver**” is defined in the preamble hereof.

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**“Withholding Agent”** means Borrower and Agent.

[Signature Page Follows.]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the Effective Date.

**BORROWER:**

PHATHOM PHARMACEUTICALS, INC.

By /s/ David A. Socks  
Name: David A. Socks  
Title: President, Chief Executive Officer, Treasurer,  
Secretary

**AGENT:**

SILICON VALLEY BANK, as Agent

By /s/ Anthony Flores  
Name: Anthony Flores  
Title: Managing Director

**LENDERS:**

SILICON VALLEY BANK

By /s/ Anthony Flores  
Name: Anthony Flores  
Title: Managing Director

WESTRIVER INNOVATION LENDING FUND VIII, L.P.

By /s/ Trent Dawson  
Name: Trent Dawson  
Title: CFO

[Signature Page to Loan and Security Agreement]

**SCHEDULE 1**

**LENDERS AND COMMITMENTS**

**TERM LOAN COMMITMENTS**

<b><u>Lender</u></b>	<b><u>Term Loan Commitment</u></b>	<b><u>Term Loan Commitment Percentage</u></b>
Silicon Valley Bank	\$ 25,000,000.00	50.0%
WestRiver Innovation Lending Fund VIII, L.P.	\$ 25,000,000.00	50.0%
<b><u>TOTAL</u></b>	<b><u>\$ 50,000,000.00</u></b>	<b><u>100.0000%</u></b>

## **EXHIBIT A - COLLATERAL DESCRIPTION**

The Collateral consists of all of Borrower's right, title and interest in and to the following personal property:

All goods, Accounts (including health-care receivables), Equipment, Inventory, contract rights or rights to payment of money, leases, license agreements, franchise agreements, General Intangibles (except as provided below), commercial tort claims, documents, instruments (including any promissory notes), chattel paper (whether tangible or electronic), cash, deposit accounts, certificates of deposit, fixtures, letters of credit rights (whether or not the letter of credit is evidenced by a writing), securities, and all other investment property, supporting obligations, and financial assets, whether now owned or hereafter acquired, wherever located; and

all Borrower's Books relating to the foregoing, and any and all claims, rights and interests in any of the above and all substitutions for, additions, attachments, accessories, accessions and improvements to and replacements, products, proceeds and insurance proceeds of any or all of the foregoing.

Notwithstanding the foregoing, the Collateral does not include (a) any interest of Borrower as a lessee or sublessee under a real property lease; (b) rights held under a license that are not assignable by their terms without the consent of the licensor thereof (but only to the extent such restriction on assignment is enforceable under applicable law); (c) any interest of Borrower as a lessee under an Equipment lease if Borrower is prohibited by the terms of such lease from granting a security interest in such lease or under which such an assignment or Lien would cause a default to occur under such lease; provided, however, that upon termination of such prohibition, such interest shall immediately become Collateral without any action by Borrower or Agent or the Lenders; (d) with respect to stock in Foreign Subsidiaries, more than sixty-five percent (65.0%) of the presently existing and hereafter arising issued and outstanding shares of capital stock owned by Borrower of any Foreign Subsidiary which shares entitle the holder thereof to vote for directors or any other matter; and (e) any Intellectual Property; provided, however, the Collateral shall include all Accounts and all proceeds of Intellectual Property.



**EXHIBIT B**  
**COMPLIANCE CERTIFICATE**

TO: SILICON VALLEY BANK, as Agent, SVB, and WESTRIVER      Date:  
FROM: PHATHOM PHARMACEUTICALS, INC.

The undersigned authorized officer of PHATHOM PHARMACEUTICALS, INC. ("**Borrower**") certifies solely as an officer of Borrower, and not in any individual capacity, that under the terms and conditions of the Loan and Security Agreement among Borrower, SVB, and WestRiver (the "**Loan Agreement**"):

(1) Borrower is in compliance for the period ending \_\_\_\_\_ with all required covenants except as noted below, (2) there are no Events of Default except as noted below, (3) all representations and warranties in the Agreement are true and correct in all material respects on this date except as noted below; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date, (4) Borrower, and each of its Subsidiaries, has timely filed all required foreign, federal, state and local Tax returns and reports, and Borrower has timely paid all foreign, federal, state and local Taxes, assessments, deposits and contributions owed by Borrower except as otherwise permitted pursuant to the terms of Section 5.8 of the Agreement or as noted below, and (5) no Liens have been levied or claims made against Borrower or any of its Subsidiaries relating to unpaid employee payroll or benefits of which Borrower has not previously provided written notification to Agent except as noted below, and (6) no Liens have been levied or claims made against Borrower or any of its Subsidiaries relating to unpaid employee payroll or benefits of which Borrower has not previously provided written notification to Agent except as noted below.

Attached are the required documents supporting the certification. The undersigned certifies solely as an officer of Borrower, and not in any individual capacity, that these are prepared in accordance with GAAP consistently applied from one period to the next except as explained in an accompanying letter or footnotes. The undersigned acknowledges that no borrowings may be requested at any time or date of determination that Borrower is not in compliance with any of the terms of the Agreement (subject to Section 3.2(b) with respect to representations and warranties, as applicable), and that compliance is determined not just at the date this certificate is delivered. Capitalized terms used but not otherwise defined herein shall have the meanings given them in the Agreement.

**Please indicate compliance status by circling Yes/No under "Complies" column.**

<u>Reporting Covenants</u>	<u>Required</u>	<u>Complies</u>	
Financial statements with Compliance Certificate	Monthly within 30 days; upon IPO, quarterly within 45 days (Q4 within 90 days)	Yes	No
Annual financial statement (CPA Audited)	FYE within 180 days (beginning FY 2019)	Yes	No
Filed 10-Q, 10-K and 8-K	Within 5 days after filing with SEC	Yes	No
Board-Approved Projections	FYE within 60 days and within 7 days of changes	Yes	No

**Other Matters**

Have there been any amendments of or other changes to the capitalization table of Borrower and to the Operating Documents of Borrower or any of its Subsidiaries? If yes, provide copies of any such amendments or changes with this Compliance Certificate.      Yes      No

The following are the exceptions with respect to the certification above: (If no exceptions exist, state "No exceptions to note.")

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PHATHOM PHARMACEUTICALS, INC.

**AGENT USE ONLY**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

Received by: \_\_\_\_\_  
AUTHORIZED SIGNER

Date: \_\_\_\_\_

Verified: \_\_\_\_\_  
AUTHORIZED SIGNER

Date: \_\_\_\_\_

Compliance Status: Yes No

**EXHIBIT C**  
**LOAN PAYMENT/ADVANCE REQUEST FORM**  
**DEADLINE FOR SAME DAY PROCESSING IS NOON PACIFIC TIME**

Fax To: \_\_\_\_\_

Date: \_\_\_\_\_

**LOAN PAYMENT: PHATHOM PHARMACEUTICALS, INC.**

From Account # \_\_\_\_\_  
(Deposit Account #)

To Account # \_\_\_\_\_  
(Loan Account #)

Principal \$ \_\_\_\_\_

and/or Interest \$ \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Print Name/Title: \_\_\_\_\_

**LOAN ADVANCE:**

Complete *Outgoing Wire Request* section below if all or a portion of the funds from this loan advance are for an outgoing wire.

From Account # \_\_\_\_\_  
(Loan Account #)

To Account # \_\_\_\_\_  
(Deposit Account #)

Amount of Term Loan Advance \$ \_\_\_\_\_

All Borrower's representations and warranties in the Loan and Security Agreement are true, correct and complete in all material respects on the date of the request for an advance; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date:

Authorized Signature: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Print Name/Title: \_\_\_\_\_

**OUTGOING WIRE REQUEST:**

**Complete only if all or a portion of funds from the loan advance above is to be wired.**

Deadline for same day processing is noon, Pacific Time

Beneficiary Name: \_\_\_\_\_

Amount of Wire: \$ \_\_\_\_\_

Beneficiary Bank: \_\_\_\_\_

Account Number: \_\_\_\_\_

City and State: \_\_\_\_\_

Beneficiary Bank Transit (ABA) #: \_\_\_\_\_

Beneficiary Bank Code (Swift, Sort, Chip, etc.): \_\_\_\_\_

**(For International Wire Only)**

Intermediary Bank: \_\_\_\_\_

Transit (ABA) #: \_\_\_\_\_

For Further Credit to: \_\_\_\_\_

Special Instruction: \_\_\_\_\_

*By signing below, I (we) acknowledge and agree that my (our) funds transfer request shall be processed in accordance with and subject to the terms and conditions set forth in the agreements(s) covering funds transfer service(s), which agreements(s) were previously received and executed by me (us).*

Authorized Signature: \_\_\_\_\_

2nd Signature (if required): \_\_\_\_\_

Print Name/Title: \_\_\_\_\_

Print Name/Title: \_\_\_\_\_

Telephone #: \_\_\_\_\_

Telephone #: \_\_\_\_\_

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**EXHIBIT D**

**Form of Disbursement Letter**

[see attached]

**DISBURSEMENT LETTER**

**[DATE]**

The undersigned, being the duly elected and acting \_\_\_\_\_ of **PHATHOM PHARMACEUTICALS, INC.**, a Delaware corporation ("**Borrower**"), does hereby certify to (a) **SILICON VALLEY BANK**, a California corporation ("**SVB**"), in its capacity as administrative agent and collateral agent ("**Agent**"), (b) **SILICON VALLEY BANK**, a California corporation, as a lender, (c) **WESTRIVER INNOVATION LENDING FUND VIII, L.P.**, a Delaware limited partnership ("**WestRiver**"), as a lender (SVB and WestRiver and each of the other "Lenders" from time to time a party hereto are referred to herein collectively as the "**Lenders**" and each individually as a "**Lender**") in connection with that certain Loan and Security Agreement dated as of [ \_\_\_\_\_ ], by and among Borrower, Agent and the Lenders from time to time party thereto (the "**Loan Agreement**"; with other capitalized terms used below having the meanings ascribed thereto in the Loan Agreement) that:

1. The representations and warranties made by Borrower in Section 5 of the Loan Agreement and in the other Loan Documents are true and correct in all material respects as of the date hereof; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date.

2. No event or condition has occurred that would constitute an Event of Default under the Loan Agreement or any other Loan Document.

3. Borrower is in compliance with the covenants and requirements contained in Sections 4, 6 and 7 of the Loan Agreement.

4. All conditions referred to in Section 3 of the Loan Agreement to the making of a Credit Extension to be made on or about the date hereof have been satisfied or waived by Agent.

5. No Material Adverse Change has occurred.

6. The undersigned is an Authorized Signer.

*[Balance of Page Intentionally Left Blank]*

7. The proceeds of the Term Loan Advance shall be disbursed as follows:

<b>Disbursement from SVB:</b>	
Loan Amount	\$ _____
Plus:	
—Deposit Received	\$ _____
Less:	
—Lender’s Legal Fees	(\$ _____)*
<b>Net Proceeds due from SVB:</b>	<b>\$ _____</b>
<b>Disbursement from WestRiver:</b>	
Loan Amount	\$ _____
Plus:	
—Deposit Received	\$ _____
<b>Net Proceeds due from WestRiver:</b>	<b>\$ _____</b>
<b>TOTAL TERM LOAN ADVANCE NET PROCEEDS FROM LENDERS</b>	<b>\$ _____</b>

8. The aggregate net proceeds of the Term Loan Advance shall be transferred to the Designated Deposit Account as follows:

Account Name: \_\_\_\_\_  
Bank Name: Silicon Valley Bank  
Bank Address: 3003 Tasman Drive  
Santa Clara, California 95054  
Account Number: \_\_\_\_\_  
ABA Number: \_\_\_\_\_

*[Balance of Page Intentionally Left Blank]*

\* Legal fees and costs are through the Effective Date. Post-closing legal fees and costs, payable after the Effective Date, to be invoiced and paid post-closing.

Dated as of the date first set forth above.

**BORROWER:**

PHATHOM PHARMACEUTICALS, INC.

By \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**AGENT:**

SILICON VALLEY BANK, as Agent

By \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**LENDER:**

SILICON VALLEY BANK

By \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**LENDER:**

WESTRIVER INNOVATION LENDING FUND VIII, L.P.

By \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

ny-1564279

[Signature page to Disbursement Letter]