TETRAPHASE PHARMACEUTICALS INC
Form 424B4
November 07, 2013
Table of Contents

Filed Pursuant to Rule 424(b)(4)
Registration No. 333-191890

Prospectus

4,500,000 Shares

Common Stock

Tetraphase Pharmaceuticals, Inc.

November 6, 2013

We are offering 4,500,000 shares of our common stock.

Our common stock is listed on The NASDAQ Global Market under the symbol TTPH. On November 6, 2013, the last reported sale price of our common stock on The NASDAQ Global Market was $11.31 per share.

As an emerging growth company, we are eligible for reduced public company reporting requirements. See Prospectus Summary Implications of Being an Emerging Growth Company.

Neither the Securities and Exchange Commission nor any 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
Public offering price	$ 10.00	$ 45,000,000
Underwriting discounts and commissions(1)	$ 0.60	$ 2,700,000
Proceeds to us, before expenses	$ 9.40	$ 42,300,000

(1) We refer you to Underwriting beginning on page 150 of this prospectus for additional information regarding total underwriter compensation.

We have granted the underwriters the option to purchase 675,000 additional shares of common stock on the same terms and conditions set forth above.

The underwriters expect to deliver the shares on or about November 13, 2013.

Investing in our common stock involves risks. See Risk Factors beginning on page 13.

BMO Capital Markets **Stifel**

Guggenheim Securities **JMP Securities** **Needham & Company**

Table of Contents

Table of Contents

You should rely only on the information contained in this prospectus and any free writing prospectus prepared by or on behalf of us or to which we have referred you. We have not authorized anyone to provide you with information that is different. We are offering to sell shares of our common stock, and seeking offers to buy shares of our common stock, only in jurisdictions where offers and sales are permitted. The information in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or any sale of our common stock.

For investors outside the United States: Neither we nor any of the underwriters have taken any action to permit a public offering of the shares of our common stock or the possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus.

We obtained the industry, market and competitive position data in this prospectus from our own internal estimates and research as well as from industry and general publications and research, surveys and studies conducted by third parties. Industry publications, studies and surveys generally state that they have been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information.

Table of Contents

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus. You should read the following summary together with the more detailed information appearing in this prospectus, including our consolidated financial statements and related notes, and the risk factors beginning on page 13 before deciding whether to purchase shares of our common stock. Unless the context otherwise requires, we use the terms Tetraphase, our company, we, us and our in this prospectus to refer to Tetraphase Pharmaceuticals, Inc. and its subsidiaries.

Company Overview

We are a clinical stage biopharmaceutical company using our proprietary chemistry technology to create novel antibiotics for serious and life-threatening multi-drug resistant infections. Our lead product candidate, eravacycline, is a fully synthetic tetracycline derivative that we are developing as a broad-spectrum intravenous and oral antibiotic for use as a first-line empiric monotherapy for the treatment of multi-drug resistant infections, including multi-drug resistant Gram-negative infections. We are conducting a Phase 3 clinical trial of eravacycline with intravenous administration for the treatment of complicated intra-abdominal infections, or cIAI, and are planning to initiate a second Phase 3 clinical trial of eravacycline for the treatment of complicated urinary tract infections, or cUTI, with intravenous-to-oral step-down therapy by the end of 2013. We expect to have top-line data from the Phase 3 cIAI clinical trial in the first quarter of 2015, data from the lead-in portion of the Phase 3 cUTI clinical trial in mid-2014 and top-line data from the Phase 3 cUTI clinical trial in the first half of 2015. Consistent with draft guidance issued by the United States Food and Drug Administration, or FDA, with respect to the development of antibiotics for cIAI and our discussions with the FDA, we expect that positive results from these two Phase 3 clinical trials would be sufficient to support submission of a new drug application, or NDA, for eravacycline in the treatment of cIAI and cUTI. If we complete the Phase 3 clinical trials of eravacycline when we anticipate and the trials are successful, we expect to submit an NDA to the FDA in the second half of 2015 and a marketing authorization application, or MAA, to the European Medicines Agency, or EMA, in the first half of 2016.

In our Phase 2 clinical trial of eravacycline monotherapy for the treatment of cIAI, eravacycline administered intravenously and dosed once or twice per day demonstrated a favorable safety and tolerability profile and a high cure rate, including against multi-drug resistant Gram-negative, Gram-positive and anaerobic bacteria. In *in vitro* experiments, eravacycline has demonstrated the ability to cover a wide variety of multi-drug resistant Gram-negative, Gram-positive, anaerobic and atypical bacteria, including multi-drug resistant *Klebsiella pneumoniae*, the species of Gram-negative bacteria that killed seven patients at the Clinical Center of the National Institutes of Health in 2012. Multi-drug resistant *Klebsiella pneumoniae* is one of the carbapenem-resistant *Enterobacteriaceae* listed as an urgent threat by the Centers for Disease Control and Prevention, or CDC, in a September 2013 report. Gram-negative bacteria that are resistant to all available antibiotics are increasingly common and a growing threat to public health. We believe that the ability of eravacycline to cover multi-drug resistant Gram-negative bacteria, as well as multi-drug resistant Gram-positive, anaerobic and atypical bacteria, and its potential for intravenous-to-oral step-down therapy, will enable eravacycline to become the drug of choice for first-line empiric treatment of a wide variety of serious and life-threatening infections. The FDA has designated the intravenous formulation of eravacycline as a qualified infectious disease product, making it eligible for fast track designation and priority review by the FDA as well as an additional five years of U.S. market exclusivity if eravacycline receives marketing approval from the FDA.

The tetracycline class of antibiotics has been used successfully for more than 50 years. Unlike our tetracycline compounds, all tetracyclines on the market and under development of which we are aware are produced semi-synthetically, first in bacteria and then modified in a limited number of ways by available chemistry. These conventional methods have only been able to produce tetracycline antibiotics with limited chemical diversity, making it difficult for conventional technology to create tetracycline antibiotics that address a

1

wide variety of multi-drug resistant bacteria. In part, because of the challenges in creating novel tetracycline molecules, only one tetracycline antibiotic has been developed and approved by the FDA for sale in the United States in the past 30 years.

We believe that our proprietary chemistry technology, licensed from Harvard University on an exclusive worldwide basis and enhanced by us, represents a significant innovation in the creation of tetracycline drugs that has the potential to reinvigorate the clinical and market potential of the class. Our proprietary chemistry technology makes it possible to create novel tetracycline antibiotics using a practical, fully synthetic process for what we believe is the first time. This fully synthetic process avoids the limitations of bacterially derived tetracyclines and allows us to chemically modify many positions in the tetracycline scaffold, including most of the positions that we believe could not practically be modified by any previous method. Using our proprietary chemistry technology, we can create a wider variety of tetracycline-based compounds than was previously possible, enabling us to pursue novel tetracycline derivatives for the treatment of multi-drug resistant bacteria that are resistant to existing tetracyclines and other classes of antibiotic products. To date, we have used our proprietary chemistry technology to create more than 3,000 new tetracycline derivatives that we believe could not be practically created with conventional methods. We own exclusive worldwide rights to these compounds and our technology.

We have designed our Phase 3 program for eravacycline to enable us to position eravacycline as a first-line empiric monotherapy for the treatment of cIAI and cUTI due to eravacycline s broad-spectrum coverage of multi-drug resistant infections, including multi-drug resistant Gram-negative infections. Our program is consistent with the draft guidance issued by the FDA for drug development for cIAI and cUTI. The cIAI guidance indicates that, for companies developing a drug for cIAI and an additional indication caused by similar bacterial pathogens, such as cUTI, a single trial in cIAI and a single trial in that additional indication could be sufficient to provide evidence of effectiveness in both indications.

In the third quarter of 2013, we initiated a global, multi-center, randomized, double-blind, double-dummy Phase 3 clinical trial to assess the efficacy, safety and pharmacokinetics of eravacycline compared to ertapenem in patients with cIAI. We plan to enroll 536 patients in the trial at approximately 100 clinical sites worldwide. These patients will be randomized into two arms on a 1:1 basis. Patients in the eravacycline arm will receive 1.0 mg/kg of eravacycline administered intravenously twice per day. Patients in the ertapenem arm will receive 1.0 g of ertapenem administered intravenously once per day. We have designed the trial as a non-inferiority study. The primary endpoint of the trial is clinical response at the test-of-cure visit in the microbiological intent-to-treat, or micro-ITT, patient population in the trial. The micro-ITT population consists of all randomized patients in the trial who have baseline bacterial pathogens that cause cIAI and against which the dosed eravacycline or ertapenem has antibacterial activity.

We plan to initiate our Phase 3 clinical trial of eravacycline for the treatment of cUTI by the end of 2013. We have designed this trial as a two-part, multi-center, randomized, double-blind trial to assess the efficacy and safety of eravacycline compared with levofloxacin in the treatment of cUTI. We plan to enroll 120 patients in the lead-in portion of the trial. These patients will be randomized into three arms on a 1:1:1 basis receiving 1.5 mg/kg of eravacycline intravenously every 24 hours followed by 200 mg of eravacycline orally every 12 hours, 1.5 mg/kg of eravacycline intravenously every 24 hours followed by 250 mg of eravacycline orally every 12 hours or 750 mg of levofloxacin intravenously every 24 hours followed by 750 mg of levofloxacin orally every 24 hours. Following treatment of the 120 patients, we plan to evaluate primary efficacy, safety and tolerability endpoints to determine the dose regimen for eravacycline to be studied in the second portion of the trial. We then plan to enroll 720 patients who will be randomized on a 1:1 basis to receive the selected dose regimen of eravacycline or the levofloxacin dose regimen. We have designed the second portion of the trial as a non-inferiority study. The primary endpoint of the second portion of the trial is clinical and microbiological response in the micro-ITT population approximately seven days after completion of treatment.

2

Table of Contents

In 2011 and 2012, the U.S. government awarded contracts for potential funding of over $100 million for the development of our antibiotic compounds. These awards include a contract for up to $67 million from the Biomedical Advanced Research and Development Authority, or BARDA, an agency of the U.S. Department of Health and Human Services, for the development of eravacycline for the treatment of disease caused by bacterial biothreat pathogens, which we refer to as the BARDA Contract. These awards also include a contract for up to $36 million from the National Institute of Allergy and Infectious Diseases, or NIAID, a division of the National Institutes of Health, for the development of TP-271, a preclinical compound that we are developing for respiratory diseases caused by bacterial biothreat pathogens, which we refer to as the NIAID Contract. These awards were made to CUBRC, Inc., or CUBRC, an independent, not-for-profit, research corporation that specializes in U.S. government-based contracts, with which we are collaborating. CUBRC serves as the prime contractor under these awards, primarily carrying out a program management and administrative role with additional responsibility for the management of preclinical studies. We serve as lead technical expert on all aspects of these awards and also serve as a subcontractor of CUBRC responsible for management of chemistry, manufacturing and control activities and clinical studies. Under our subcontracts with CUBRC, we may receive funding of up to approximately $39.8 million reflecting the portion of the BARDA Contract funding that may be paid to us for our activities, and up to approximately $13.3 million reflecting the portion of the NIAID Contract funding that may be paid to us for our activities. The BARDA Contract includes funding for some of the activities that we would otherwise be required to fund on our own in connection with any NDA filing for eravacycline.

In addition to eravacycline and TP-271, we are pursuing the discovery and development of additional antibiotics to target unmet medical needs, including compounds that might for the first time provide coverage with tetracycline-derived antibiotics of *Pseudomonas* bacteria, as well as other multi-drug resistant Gram-negative bacteria. Any efforts by us with respect to these programs will be subject to the availability of resources not allocated to our development of eravacycline.

Drug-Resistant Antibiotic Market

According to IMS Health, in 2011, approximately $41 billion was spent on antibiotic drugs worldwide, of which almost $9 billion was spent in the United States. The widespread use of antibiotics has resulted in a rapid increase in bacterial infections that are resistant to multiple antibacterial agents. As a result of the increasing prevalence of such multi-drug resistant bacteria, some antibiotics targeting these bacteria have been highly successful commercially. These include:

- linezolid, an intravenously and orally administered antibiotic marketed by Pfizer as Zyvox, which had worldwide sales in 2012 of $1.3 billion;

- levofloxacin, an intravenously and orally administered antibiotic marketed by Ortho-McNeil and Johnson & Johnson as Levaquin, which had worldwide sales in 2012 of $75 million, down from worldwide sales of $1.4 billion in 2010 after losing U.S. market exclusivity in June 2011;

- meropenem, an intravenously administered antibiotic marketed by AstraZeneca as Merrem, which had worldwide sales in 2012 of $396 million, down from worldwide sales of $817 million in 2010 after losing U.S. market exclusivity in June 2010; and

daptomycin, an intravenously administered antibiotic marketed by Cubist Pharmaceuticals, Inc. as Cubicin, which had worldwide sales in 2012 of $860 million.

Antibiotics that treat bacterial infections can be classified as broad-spectrum or narrow-spectrum. Antibiotics that are active against a mixture of Gram-positive, Gram-negative and anaerobic bacteria are referred to as broad-spectrum. Antibiotics that are active only against a select subset of bacteria are referred to as narrow-spectrum. Because it usually takes from 24 to 72 hours from the time a specimen is received in the laboratory to definitively diagnose a particular bacterial infection, physicians may be required to prescribe antibiotics for

Table of Contents

serious infections without having identified the bacteria. As such, effective first-line treatment of serious infections requires the use of broad-spectrum antibiotics with activity against a broad range of bacteria at least until the bacterial infection can be diagnosed.

Many strains of bacteria have mutated over time and have developed resistance to existing drugs, resulting in infections that are increasingly serious or more difficult to treat. These drug-resistant pathogens have become a growing menace to all people, regardless of age, gender or socioeconomic background. They endanger people in affluent, industrial societies like the United States, as well as in less-developed nations.

According to a September 2013 report of the CDC, each year in the United States, at least two million people acquire serious infections with bacteria that are resistant to one or more of the antibiotics designed to treat those infections. At least 23,000 people die each year as a direct result of these antibiotic-resistant infections, with many more dying from other conditions that are complicated by the occurrence of an antibiotic-resistant infection. These antibiotic-resistant infections add considerable and avoidable costs to the already overburdened U.S. healthcare system. In the same September 2013 report, the CDC noted that the total economic cost of antibiotic infections to the U.S. economy has been estimated to be as high as $20 billion in excess of direct healthcare costs. In addition, the CDC reported that, among all of the bacterial resistance problems, Gram-negative pathogens are particularly worrisome because they are becoming resistant to nearly all drugs that would be considered for treatment, with the most serious Gram-negative infections being healthcare associated and the most common pathogens being *Enterobacteriaceae*, *Pseudomonas aeruginosa* and *Acinetobacter*.

As such, at present, there is an acute need for new drugs to treat multi-drug resistant Gram-negative bacteria. Currently approved products, such as Merrem and Levaquin, are becoming increasingly ineffective against Gram-negative bacteria due to increasing resistance, limiting patients treatment options, particularly for patients with multi-drug resistant infections, and few new therapeutic agents are in clinical development.

As a further example of the seriousness of the threat of Gram-negative bacteria resistant to all available antibacterial agents, in 2012, the national media including *The New York Times*, *The Wall Street Journal* and *The Washington Post* reported that the Clinical Center of the National Institutes of Health had an outbreak of Gram-negative *Klebsiella pneumoniae* bacteria strains that were resistant to all available antibiotics that resulted in seven deaths. In addition, there have been numerous reports that physicians have resorted to prescribing colistin for Gram- negative bacteria resistant to all other drugs. Colistin was discovered in 1949 and has not been widely used for decades because of serious toxicities, including nephrotoxicity. In our Phase 2 cIAI clinical trial, eravacycline dosed intravenously once or twice per day as a monotherapy was effective against multi-drug resistant *Klebsiella pneumoniae*.

The growing issue of antibiotic-resistant bacterial infections has been widely recognized as an increasingly urgent public health threat, including by the World Health Organization, the CDC and the Infectious Disease Society of America, or IDSA. In April 2011, IDSA issued a report warning that unless significant measures are taken to increase the pipeline of new antibiotics active against drug resistant bacteria, people will start to die from common, formerly treatable infections, and medical interventions such as surgery, chemotherapy, organ transplantation and care of premature infants will become increasingly risky. In the pre-antibiotic era before penicillin began to be available in 1942, patients frequently died from what subsequently became easily cured infections. The important need for new treatment options for serious bacterial infections was further highlighted by the passage in July 2012 of the Generating Antibiotic Incentives Now Act, which provides regulatory incentives for the development of new antibacterial or antifungal drugs intended to treat serious or life-threatening infections that are resistant to existing treatment. In September 2012, the FDA announced the formation of an internal task force to support the development of new antibacterial drugs, which they called a critical public healthcare goal and a priority for the agency.

4

Table of Contents

Limitations of Available Treatment Options

When confronted with a new patient suffering from a serious infection caused by an unknown pathogen, a physician may be required to quickly initiate first-line empiric antibiotic treatment to stabilize the patient prior to definitively diagnosing the particular bacterial infection. However, current antibiotics for first-line empiric treatment of serious bacterial infections suffer from significant limitations, including one or more of the following:

Insufficient Coverage of Multi-Drug Resistant Bacteria. Frequently used products, such as Zyvox and Cubicin, are limited to Gram-positive bacteria and thus are rarely used as a first-line empiric monotherapy if broad bacterial coverage is required. In addition, other popular antibiotics that have been used as first-line empiric monotherapies, such as Levaquin, piperacillin/tazobactam, which is marketed by Pfizer as Zosyn, carbapenems, such as Merrem, and imipenem/cilastatin, which is marketed by Merck as Primaxin, have seen their utility as first-line empiric monotherapies diminished as the number of bacterial strains resistant to these therapies has increased.

Complicated and Expensive Multi-Drug Cocktails and Multi-Dose Regimens. Due to gaps in the spectrum of coverage of antibiotics, physicians are often confronted with the need to design complicated multi-drug cocktails for the first-line empiric treatment of patients with serious infections. The clinical situation is further complicated when each drug in the multi-drug cocktail has a different dosing regimen, such as two, three or four times a day, resulting in an added burden on the pharmacy and nursing staff, higher costs due to multiple drug administrations and an increased potential for medical errors or drug-drug interactions. We believe that, with the exception of eravacycline, most of the antibiotics that are in clinical trials and are being developed to cover a broad spectrum of bacteria, including Gram-negative bacteria, or solely to address Gram-negative bacteria, are being developed to be used in combination with one or more other antibiotics, and require the addition of a third drug such as metronidazole to address the presence of anaerobes.

Safety and Tolerability Concerns. Concerns about antibiotic safety and tolerability are among the leading reasons why patients stop treatment and fail therapy. Antibiotics on the market have been associated with adverse effects such as myelosuppression, seizures, nephrotoxicity and gastrointestinal disorders.

Lack of Oral Dosage Forms to Permit Step-Down Therapy. When a patient comes to the emergency room or hospital for treatment of a serious infection, the patient initially receives intravenous treatment, which allows the drug to be delivered more rapidly and in a larger dose than oral treatment. Once the infection begins to respond to treatment and the patient is stabilized, depending on the infection, hospitals and physicians generally seek to manage in-hospital treatment and, if possible, discharge patients from the hospital in order to reduce costs, avoid hospital-acquired infections, and improve the patients quality of life. Upon discharge, physicians typically prefer to prescribe step-down treatment with an oral formulation of the same antibiotic. A step-down to oral treatment allows for more convenient and cost-effective out-patient treatment, with the oral antibiotic providing enhanced patient comfort and mobility and avoiding the risk of infection from the intravenous catheter. In addition, the use of the same antibiotic allows the physician to avoid switching the patient from the antibiotic that has proven effective during intravenous administration to a different antibiotic that may be less effective and carries the risk of new or different side effects. Many of the antibiotics that are most commonly used as first-line empiric monotherapies are only available in an intravenous formulation. Very few of the antibiotics that cover or are focused on the treatment of Gram-negative bacteria have oral dosage forms.

Eravacycline

Our lead product candidate, eravacycline, is a fully synthetic tetracycline derivative that we are developing as a broad-spectrum intravenous and oral antibiotic for use as a first-line empiric monotherapy for the treatment of

multi-drug resistant infections, including multi-drug Gram-negative infections. We developed eravacycline

Table of Contents

using our proprietary chemistry technology. We believe our fully synthetic process will enable us to have a cost of manufacturing that is sufficiently low to enable us to sell eravacycline, when and if approved, for a cost that is similar to other hospital-based antibiotics. Our patent strategy to broadly protect eravacycline includes the filing of patent applications directed towards the composition of matter of eravacycline as well as our proprietary chemistry technology, which we used to create eravacycline. We own exclusive worldwide rights for the development and commercialization of eravacycline.

We conducted a Phase 2 clinical trial to evaluate the efficacy, safety and pharmacokinetics of eravacycline with intravenous administration compared to ertapenem for the treatment of patients with cIAI. In our Phase 2 clinical trial:

- patients in the eravacycline arms experienced infection cure rates that were 93% and higher, similar to patients in the ertapenem arm;
- eravacycline demonstrated efficacy against confirmed drug-resistant Gram-negative pathogens; and
- eravacycline was well-tolerated with patients in the eravacycline arms experiencing no serious adverse events found to be related to eravacycline.

We are conducting a Phase 3 clinical trial of eravacycline for the treatment of cIAI and are planning to initiate a second Phase 3 clinical trial of eravacycline for the treatment of cUTI by the end of 2013. We expect to have top-line data from the Phase 3 cIAI clinical trial in the first quarter of 2015, data from the lead-in portion of the Phase 3 cUTI clinical trial in mid-2014 and top-line data from the Phase 3 cUTI clinical trial in the first half of 2015. If we complete the Phase 3 clinical trials of eravacycline when we anticipate and the trials are successful, we expect to submit an NDA to the FDA in the second half of 2015 and an MAA to the EMA in the first half of 2016.

We believe that the following key attributes of eravacycline, observed in clinical trials and preclinical studies of eravacycline, differentiate eravacycline from other antibiotics targeting multi-drug resistant infections, including multi-drug resistant Gram-negative infections, and address the limitations of these antibiotics that have created the unmet medical need:

- **Potency and effectiveness against a broad spectrum of bacteria, including multi-drug resistant Gram-negative, Gram-positive, atypical and anaerobic bacteria.** In our clinical and *in vitro* studies, eravacycline has demonstrated the ability to cover a wide variety of these bacteria.
- **Capability of being used as a monotherapy in the majority of patients in the hospital with cIAI, cUTI and other multi-drug resistant infections.** We are developing eravacycline as a monotherapy because of the broad-spectrum coverage it has demonstrated in our clinical and *in vitro* studies.
- **A convenient dosing regimen, such as once or twice daily.** In our Phase 2 clinical trial, we dosed eravacycline once or twice a day as a monotherapy. We believe that eravacycline will be able to be administered as a first-line empiric monotherapy with once- or twice-daily dosing.

A favorable safety and tolerability profile. In our Phase 2 clinical trial, eravacycline demonstrated a favorable safety and tolerability profile. In the clinical trial, no patients suffered any serious adverse events that were found to be related to eravacycline, and safety and tolerability were comparable to ertapenem, the control therapy in the trial.

Potential availability in both intravenous dosage and oral dosage form. In addition to the intravenous formulation of eravacycline, we are also developing an oral formulation of eravacycline. We believe that eravacycline has the potential for use in intravenous-to-oral step-down therapy.

Based on our belief that eravacycline has each of these characteristics, our goal is to develop eravacycline to be the drug of choice for first-line empiric treatment of a wide variety of serious and life-threatening infections. We

Table of Contents

believe eravacycline s attributes will make it a safe and effective treatment for cIAI, cUTI and other serious and life-threatening infections for which we may develop eravacycline, such as hospital-acquired bacterial pneumonias.

Strategy

Our goal is to become a fully integrated biopharmaceutical company that discovers, develops and commercializes novel antibiotics for use in areas of unmet medical need. In order to achieve this goal, we intend to:

- Complete clinical development of eravacycline for the treatment of cIAI and cUTI and seek regulatory approval.
- Directly commercialize eravacycline in the United States with a targeted hospital sales force.
- Establish one or more collaborations for the development and commercialization of eravacycline outside the United States.
- Pursue development of eravacycline for other serious and life-threatening infections, such as hospital-acquired bacterial pneumonias.
- Opportunistically advance development of other product candidates created using our proprietary chemistry technology.

Recent Operating Results

We have presented below preliminary estimates of our cash and cash equivalents balance and our results of operations that we expect to report as of, and for the three months ended, September 30, 2013. We have provided ranges, rather than specific amounts, for these preliminary estimates primarily because we have not yet completed our quarterly closing procedures for the three months ended September 30, 2013. We currently expect that our final cash and cash equivalents balance and operating results will be within the ranges set forth below, but it is possible that our final cash and cash equivalents balance and operating results will not be within these ranges. These preliminary estimates for the three months ended September 30, 2013 are not necessarily indicative of any future period and should be read together with Risk Factors, Cautionary Note Concerning Forward-Looking Statements, Management s Discussion and Analysis of Financial Condition and Results of Operations, Selected Consolidated Financial Data and our financial statements and related notes included elsewhere in this prospectus.

We have prepared our preliminary estimates on the basis of currently available information. These preliminary estimates have been prepared by, and are the responsibility of, our management. Our independent registered public accounting firm, Ernst & Young LLP, has not audited or reviewed, and does not express an opinion with respect to, these estimates. This summary is not a comprehensive statement of our financial results for the three months ended September 30, 2013. Our actual results may differ materially from these estimates due to the completion of our quarterly closing procedures, final adjustments and other developments that may arise between now and the time the financial results for this period are finalized. We expect to complete our closing procedures with respect to the three months ended September 30, 2013 after this offering is consummated. Accordingly, our consolidated financial

statements as of and for the three and nine months ended September 30, 2013 will not be available until after this offering is completed.

We estimate that our cash and cash equivalents balance as of September 30, 2013 will be between $67.5 million and $68.1 million. We believe that our existing cash and cash equivalents will enable us to fund our operating expenses and capital expenditure requirements through the first quarter of 2015. We believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our operating expenses and capital expenditure requirements through at least the end of 2015. We believe that our

Table of Contents

available funds following this offering will be sufficient to enable us to obtain top-line data from our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and our planned Phase 3 clinical trial of eravacycline for the treatment of cUTI and to submit an NDA to the FDA for eravacycline. We expect that these funds will not, however, be sufficient to enable us to commercially launch eravacycline.

We estimate that our contract and grant revenue for the three months ended September 30, 2013 will be between $1.9 million and $2.5 million, a decrease of up to 25% from revenue of $2.5 million for the three months ended September 30, 2012. Any decrease in revenue for the three months ended September 30, 2013 is primarily due to the timing and scope of preclinical activities under our subcontract with respect to the NIAID Contract conducted during the period.

We estimate that our research and development expenses for the three months ended September 30, 2013 will be between $9.7 million and $10.3 million, an increase of between 120% and 133% from research and development expenses of $4.4 million for the three months ended September 30, 2012. The expected increase in research and development expenses for the three months ended September 30, 2013 is primarily related to an increase in costs associated with our Phase 3 clinical trial of eravacycline for the treatment of patients with cIAI, an increase in drug manufacturing costs for clinical supply associated with our ongoing clinical trials, as well as a $2.0 million milestone fee to Harvard that we incurred in connection with the dosing of the first patient in our Phase 3 clinical trial of eravacycline for the treatment of patients with cIAI during the three months ended September 30, 2013.

We estimate that our general and administrative expenses for the three months ended September 30, 2013 will be between $1.6 million and $2.2 million, an increase of between 57% and 116% from general and administrative expenses of $1.0 million for the three months ended September 30, 2012. The expected increase in general and administrative expenses for the three months ended September 30, 2013 is primarily due to an increase in audit, legal and insurance costs primarily due to being a public company and an increase in personnel-related costs.

We estimate that our net loss will be between $9.8 million and $10.4 million for the three months ended September 30, 2013, as compared to a net loss of $3.1 million for the three months ended September 30, 2012. The expected increase in net loss is primarily due to increased research and development costs associated with our eravacycline program.

Risks Associated with Our Business

Our business is subject to a number of risks of which you should be aware before making an investment decision. These risks are discussed more fully in the Risk Factors section of this prospectus immediately following this prospectus summary. These risks include the following:

- We are dependent on the success of our lead product candidate, eravacycline. Our ability to generate product revenues, which we do not expect will occur before 2016, is substantially dependent on our ability to obtain marketing approval for and commercialize eravacycline.

- Our clinical trials of eravacycline or of any other product candidate that we advance to clinical trials may fail to demonstrate safety and efficacy to the satisfaction of the FDA or comparable regulatory authorities outside the United States or may not otherwise produce positive results. In such event, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of eravacycline or any other product candidate.

We expect that we will need substantial additional funding. If we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

Table of Contents

If we are unable to establish sales, marketing and distribution capabilities or enter into sales, marketing and distribution agreements with third parties, we may not be successful in commercializing eravacycline if and when eravacycline is approved.

We have incurred significant losses since inception and expect to incur losses for at least the next several years.

Corporate Information

We were incorporated under the laws of the State of Delaware on July 7, 2006 under the name Tetraphase Pharmaceuticals, Inc. Our principal executive offices are located at 480 Arsenal Street, Suite 110, Watertown, Massachusetts 02472, and our telephone number is (617) 715-3600. Our website address is www.tphase.com. The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

The trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners.

Implications of Being an Emerging Growth Company

As a company with less than $1 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. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

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;

reduced disclosure about our executive compensation arrangements;

no non-binding advisory votes on executive compensation or golden parachute arrangements; and

exemption from the auditor attestation requirement in the assessment of our internal controls over financial reporting.

We may take advantage of these exemptions for up to five years following our initial public offering in March 2013 or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company if we have more than $1 billion in annual revenue, we have more than $700 million in market value of our stock held by non-affiliates or we issue more than $1 billion of non-convertible debt over a three-year period. We may choose to take advantage of some, but not all, of the available exemptions. We have taken advantage of certain reduced reporting burdens in this prospectus. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you hold stock.

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 certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, are subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

Table of Contents

The Offering

Common stock offered by Tetraphase	4,500,000 shares
Common stock to be outstanding after this offering	25,176,298 shares (25,851,298 shares in the event the underwriters elect to exercise their option to purchase additional shares from us in full)
Use of proceeds	We estimate that the net proceeds to us from this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, will be approximately $41.7 million, or approximately $48.0 million if the underwriters exercise their option to purchase additional shares from us in full, based on the public offering price of $10.00 per share. We plan to use the net proceeds from this offering to fund our pivotal Phase 3 program for eravacycline for the treatment of complicated intra-abdominal infections and complicated urinary tract infections, including the submission of an NDA for eravacycline and for working capital and other general corporate purposes. See Use of Proceeds.
Risk Factors	You should read the Risk Factors section and other information included in this prospectus for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.
NASDAQ Global Market symbol	TTPH

The number of shares of our common stock to be outstanding after this offering is based on the 20,676,298 shares of our common stock outstanding as of September 30, 2013 and excludes:

- 104,107 shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2013, at a weighted average exercise price of $7.68 per share;
- 2,866,985 shares of common stock issuable upon the exercise of stock options outstanding as of September 30, 2013, at a weighted average exercise price of $4.91 per share; and
- 511,637 shares of common stock available for future issuance under our equity compensation plans as of September 30, 2013.

Except as otherwise noted, all information in this prospectus:

gives effect to a 1-for-29 reverse split of our common stock effected March 5, 2013;

assumes no exercise of outstanding options or warrants described above; and

assumes no exercise by the underwriters of their option to purchase 675,000 additional shares of common stock from us.

Table of Contents

Summary Consolidated Financial Data

The following table summarizes our consolidated financial data. We have derived the following summary of our statement of operations data for the years ended December 31, 2011 and 2012 from our audited consolidated financial statements appearing elsewhere in this prospectus. The statement of operations data for the six months ended June 30, 2012 and 2013 and the period from July 7, 2006 (inception) to June 30, 2013 and the balance sheet data as of June 30, 2013 have been derived from our unaudited financial statements appearing elsewhere in this prospectus. In the opinion of management, the unaudited financial statements and the notes thereto, included elsewhere in this prospectus, have been prepared on the same basis as our audited consolidated financial statements and reflect all adjustments, consisting only of normal recurring adjustments that we consider necessary for a fair presentation of our financial position and results of operations for the periods presented. Our historical results are not necessarily indicative of the results that may be expected in the future. The summary of our consolidated financial data set forth below should be read together with our consolidated financial statements and the related notes to those statements, as well as Management s Discussion and Analysis of Financial Condition and Results of Operations, appearing elsewhere in this prospectus.

	Years Ended December 31,		Six Months Ended June 30,		The Period from July 7, 2006 (inception) to June 30, 2013 (Unaudited)
	2011	2012	2012	2013	
			(Unaudited)		
	(In thousands except per share data)				
Statement of Operations Data:					
Contract and grant revenue:	$ 185	$ 7,600	$ 1,823	$ 6,422	$ 14,207
Operating expenses:					
Research and development	17,737	17,294	8,262	11,022	86,129
General and administrative	3,874	4,309	1,963	2,981	20,284
Total operating expenses	21,611	21,603	10,225	14,003	106,413
Loss from operations	(21,426)	(14,003)	(8,402)	(7,581)	(92,206)
Other income (expense):					
Interest income	1			2	610
Interest expense	(161)	(1,021)	(450)	(901)	(2,339)
Other income (expense)	22	(63)	(105)	263	(4,367)
Total other income (expense)	(138)	(1,084)	(555)	(636)	(6,096)
Net loss	$ (21,564)	$ (15,087)	$ (8,957)	$ (8,217)	$ (98,302)
Net loss per share applicable to common stockholders-basic and diluted (1)	$ (73.34)	$ (47.54)	$ (28.60)	$ (0.73)	$ (96.85)

Weighted-average number of common shares used in net loss per share applicable to common stockholders-basic and diluted	294	317	313	11,263	1,015
Comprehensive loss	$ (21,564)	$ (15,087)	$ (8,957)	$ (8,217)	$ (98,302)

Table of Contents

	As of June 30, 2013	
	Actual	As Adjusted (2)
	(Unaudited, in thousands)	
Balance Sheet Data:		
Cash and cash equivalents	$ 77,216	$ 118,910
Working capital	70,043	111,737
Total assets	81,168	122,862
Current liabilities	10,880	10,880
Long-term obligations	7,711	7,711
Total stockholders equity	62,577	104,271

(1) See Note 2 within the notes to our audited and unaudited consolidated financial statements appearing elsewhere in this prospectus for a description of the method used to calculate basic and diluted net loss per share applicable to common stockholders.

(2) As adjusted to reflect the sale of 4,500,000 shares of our common stock offered in this offering, at the public offering price of $10.00 per share, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

Table of Contents

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before you decide to invest in our common stock, you should consider carefully the risks described below, together with the other information contained in this prospectus, including our financial statements and the related notes appearing at the end of this prospectus. We believe the risks described below are the risks that are material to us as of the date of this prospectus. If any of the following risks actually occur, our business, financial condition, results of operations and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock could decline, and you may lose all or part of your investment.

Risks Relating to Our Financial Position and Need for Additional Capital

We have incurred significant losses since inception, expect to incur losses for at least the next several years and may never achieve or sustain profitability.

We have incurred annual net operating losses in every year since our inception. Our net loss was $21.6 million for the year ended December 31, 2011, $15.1 million for the year ended December 31, 2012 and $8.2 million for the six months ended June 30, 2013. As of June 30, 2013, we had a deficit accumulated during the development stage of $98.3 million. We have not generated any product revenues and have financed our operations primarily through the public offering and private placements of our equity securities, debt financings and revenue from U.S. government awards. We have not completed development of any product candidate and have devoted substantially all of our financial resources and efforts to research and development, including preclinical and clinical development. We expect to continue to incur significant expenses and increasing operating losses for at least the next several years. The net losses we incur may fluctuate significantly from quarter to quarter. Net losses and negative cash flows have had, and will continue to have, an adverse effect on our stockholders equity and working capital.

We expect that our expenses will increase substantially as we continue our ongoing Phase 3 clinical trial of our lead product candidate, eravacycline, for the treatment of patients with complicated intra-abdominal infections, or cIAI, and commence our planned Phase 3 clinical trial of eravacycline for the treatment of patients with complicated urinary tract infections, or cUTI, seek marketing approval for eravacycline, pursue development of eravacycline for additional indications, including hospital-acquired bacterial pneumonias and other serious and life-threatening infections, advance our other product candidates and satisfy our obligations under our license agreement with Harvard University. If we obtain marketing approval of eravacycline, we also expect to incur significant sales, marketing, distribution and outsourced manufacturing expenses, as well as ongoing research and development expenses. Our expenses also will increase if and as we:

- maintain, expand and protect our intellectual property portfolio;
- in-license or acquire other products and technologies;
- hire additional clinical, quality control and scientific personnel; and

add operational, financial and management information systems and personnel, including personnel to support our product development and planned future commercialization efforts.

Our ability to become and remain profitable depends on our ability to generate revenue. We do not expect to generate significant revenue unless and until we obtain marketing approval for, and commercialize, eravacycline, which will require us to be successful in a range of challenging activities, including:

commencing and successfully completing Phase 3 clinical trials of eravacycline;

applying for and obtaining marketing approval for eravacycline;

protecting and maintaining our rights to our intellectual property portfolio related to eravacycline;

contracting for the manufacture of commercial quantities of eravacycline; and

establishing sales, marketing and distribution capabilities to effectively market and sell eravacycline.

Table of Contents

Because of the numerous risks and uncertainties associated with pharmaceutical 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. Our expenses could increase if we are required by the United States Food and Drug Administration, or FDA, or the European Medicines Agency, or EMA, to perform studies in addition to those currently expected, or if there are any delays in completing our clinical trials or the development of any of our product candidates.

We may be unable to develop and commercialize eravacycline or any other product candidate and, even if we do, may never 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 decrease the value of our company and could impair our ability to raise capital, expand our business or continue our operations. A decline in the value of our company could cause you to lose all or part of your investment.

We expect that we will need substantial additional funding. If we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

Developing pharmaceutical products, including conducting preclinical studies and clinical trials, is a time-consuming, expensive and uncertain process that takes years to complete. We expect that our expenses will increase substantially as we continue our ongoing Phase 3 clinical trial of eravacycline for the treatment of patients with cIAI, commence our planned Phase 3 clinical trial of eravacycline for the treatment of patients with cUTI, seek marketing approval for eravacycline, pursue development of eravacycline for additional indications, including hospital-acquired bacterial pneumonias and other serious and life-threatening infections, advance our other product candidates and satisfy our obligations under our license agreement with Harvard University. We expect that the total external costs of our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and our planned Phase 3 clinical trial of eravacycline for the treatment of cUTI will be approximately $55.0 million. If we obtain marketing approval for eravacycline or any other product candidate that we develop, we expect to incur significant commercialization expenses related to product sales, marketing, distribution and manufacturing.

We believe that our existing cash and cash equivalents will enable us to fund our operating expenses and capital expenditure requirements through the first quarter of 2015. We believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our operating expenses and capital expenditure requirements through at least the end of 2015. We believe that our available funds following this offering will be sufficient to enable us to obtain top-line data from our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and our planned Phase 3 clinical trial of eravacycline for the treatment of cUTI and to submit a new drug application, or NDA, to the FDA for eravacycline. We expect that these funds will not, however, be sufficient to enable us to commercially launch eravacycline. As a result, we will be required to obtain further funding through public or private equity offerings, debt financings, collaborations and licensing arrangements or other sources.

These estimates are based on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Changing circumstances could cause us to consume capital significantly faster than we currently anticipate, and we may need to spend more money than currently expected because of circumstances beyond our control. It is also possible that we will not achieve the progress that we expect with respect to eravacycline because the actual costs and timing of clinical development activities are difficult to predict and are subject to substantial risks and delays.

Adequate additional financing may not be available to us on acceptable terms, or at all. Our failure to raise capital as and when needed would have a negative impact on our financial condition and our ability to pursue our business strategy.

14

Table of Contents

Our future funding requirements, both short-term and long-term, will depend on many factors, including:

- the timing, design and costs of our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and our planned Phase 3 clinical trial of eravacycline for the treatment of cUTI;
- the timing and costs of developing eravacycline for additional indications, including hospital-acquired bacterial pneumonias and other serious and life-threatening infections;
- the initiation, progress, timing, costs and results of preclinical studies and clinical trials for our other product candidates and potential product candidates;
- the amount of funding that we receive under our subcontracts awarded to us by our collaborator CUBRC, Inc., or CUBRC, under its government contracts with the Biomedical Advanced Research and Development Authority, or BARDA, and with the National Institutes of Health s, or NIH s, National Institute of Allergy and Infectious Diseases, or NIAID, and under our subaward from CUBRC under its grant from NIAID, and the activities funded under these contracts;
- the number and characteristics of product candidates that we pursue;
- the outcome, timing and costs of seeking regulatory approvals;
- the costs of commercialization activities for eravacycline and other product candidates if we receive marketing approval, including the costs and timing of establishing product sales, marketing, distribution and manufacturing capabilities;
- subject to receipt of marketing approval, revenue received from commercial sales of eravacycline;
- the terms and timing of any future collaborations, licensing or other arrangements that we may establish;
- the amount and timing of any payments we may be required to make, or that we may receive, in connection with the licensing, filing, prosecution, defense and enforcement of any patents or other intellectual property rights, including milestone and royalty payments and patent prosecution fees that we are obligated to pay to Harvard pursuant to our license agreement;
- the costs of preparing, filing and prosecuting patent applications, maintaining and protecting our intellectual property rights and defending against intellectual property related claims;

the costs of operating as a public company; and

the extent to which we in-license or acquire other products and technologies.

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.

Upon completion of this offering, our only external source of funds will be funding under subcontracts and a subaward awarded to us by CUBRC pursuant to government contracts from BARDA and NIAID and a grant from NIAID. Although the BARDA contract, and our subcontract with CUBRC under the BARDA contract, have five-year terms, BARDA is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond current-year amounts from Congressionally approved annual appropriations. To the extent that BARDA ceases to provide funding of the program to CUBRC, CUBRC has the right to cease providing funding to us. Committed funding from CUBRC under our BARDA subcontract is $15.6 million from the initial contract date through April 30, 2015, of which $7.5 million had been received through June 30, 2013.

Similarly, although the NIAID contract and our subcontract with CUBRC under the NIAID contract, have five-year terms, NIAID is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond September 30, 2016. To the extent NIAID ceases to provide funding of the programs to CUBRC, CUBRC has the right to cease providing funding to us. Committed funding from CUBRC

Table of Contents

under our subcontract with respect to the NIAID contract is $7.5 million, of which $3.4 million had been received through June 30, 2013. In addition, although the NIAID grant has a term of five years and our subaward from CUBRC has a term of 55 months, NIAID is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond May 31, 2016. To the extent NIAID ceases to provide funding of the programs to CUBRC, CUBRC has the right to cease providing funding to us. Committed funding from CUBRC under our subaward with respect to the NIAID grant is $0.7 million from the initial grant date through May 31, 2016, of which $0.4 million had been received through June 30, 2013.

As a result, unless and until we can generate a substantial amount of revenue from our product candidates, we expect to finance our future cash needs through public or private equity offerings, debt financings or collaborations and licensing arrangements. In addition, we may seek additional capital due to favorable market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans.

To the extent that we raise additional capital through the sale of common stock, convertible securities or other equity securities, your ownership interest may be materially diluted, and the terms of these securities could include liquidation or other preferences and anti-dilution protections that could adversely affect your rights as a common stockholder. In addition, debt financing, if available, would result in increased fixed payment obligations and may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, that could adversely impact our ability to conduct our business. For example, our debt facility with Silicon Valley Bank and Oxford Finance contains restrictive covenants that, subject to certain exceptions, prohibit us from transferring all or any part of our business or property, changing our business, liquidating or dissolving, merging with or acquiring another entity, entering into a transaction that will result in a change of control, incurring additional indebtedness, creating any lien on our property, paying dividends, entering into material transactions with affiliates, changing key management or adding new offices or business locations. Future debt securities or other financing arrangements could contain similar or more restrictive negative covenants. In addition, securing additional financing would require a substantial amount of time and attention from our management and may divert a disproportionate amount of their attention away from day-to-day activities, which may adversely affect our management s ability to oversee the development of our product candidates.

If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams or product candidates or to grant licenses on terms that may not be favorable to us.

We have a limited operating history and no history of commercializing pharmaceutical products, which may make it difficult to evaluate the prospects for our future viability.

We began operations in the third quarter of 2006. Our operations to date have been limited to financing and staffing our company, developing our technology and developing eravacycline and other product candidates. We have not yet demonstrated an ability to successfully complete a large-scale, pivotal clinical trial, obtain marketing approval, 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, predictions about our future success or viability may not be as accurate as they could be if we had a longer operating history or a history of successfully developing and commercializing pharmaceutical products.

Table of Contents

Risks Related to Product Development and Commercialization

We are dependent on the success of our lead product candidate, eravacycline, and our ability to develop, obtain marketing approval for and successfully commercialize eravacycline. If we are unable to develop, obtain marketing approval for and successfully commercialize eravacycline or experience significant delays in doing so, our business could be materially harmed.

We currently have no products approved for sale and have invested a significant portion of our efforts and financial resources in the development of eravacycline for use as a first-line empiric monotherapy for the treatment of multi-drug resistant infections. Our prospects are substantially dependent on our ability to develop, obtain marketing approval for and successfully commercialize eravacycline. The success of eravacycline will depend on several factors, including the following:

- successful completion of clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;
- establishment of arrangements with third-party manufacturers to obtain manufacturing supply;
- obtainment and maintenance of patent and trade secret protection and regulatory exclusivity;
- protection of our rights in our intellectual property portfolio;
- launch of commercial sales of eravacycline, if and when approved, whether alone or in collaboration with others;
- acceptance of eravacycline, if and when approved, by patients, the medical community and third-party payors;
- competition with other therapies; and
- a continued acceptable safety profile of eravacycline following approval.

Successful development of eravacycline for additional indications, including hospital-acquired bacterial pneumonias and other serious and life-threatening infections, will be subject to these same risks.

If we are unable to develop, receive marketing approval for, or successfully commercialize eravacycline, or experience delays as a result of any of these matters or otherwise, our business could be materially harmed.

If clinical trials of eravacycline or of any other product candidate that we advance to clinical trials fail to demonstrate safety and efficacy to the satisfaction of the FDA or comparable foreign regulatory authorities or do not otherwise produce favorable results, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of eravacycline or any other product candidate.

We are not permitted to commercialize, market, promote, or sell any product candidate in the United States without obtaining marketing approval from the FDA or in other countries without obtaining approvals from comparable foreign regulatory authorities, such as the EMA, and we may never receive such approvals. We must complete extensive preclinical development and clinical trials to demonstrate the safety and efficacy of our product candidates in humans before we will be able to obtain these approvals. Clinical testing is expensive, difficult to design and implement, can take many years to complete and is inherently uncertain as to outcome. We have not previously submitted an NDA to the FDA or similar drug approval filings to comparable foreign regulatory authorities for any of our product candidates.

The clinical development of eravacycline and other product candidates is susceptible to the risk of failure inherent at any stage of drug development, including failure to achieve efficacy in a trial or across a broad population of patients, the occurrence of severe adverse events, failure to comply with protocols or applicable regulatory requirements, and determination by the FDA or any comparable foreign regulatory authority that a drug product is not approvable. The outcome of preclinical studies and early clinical trials may not be predictive

Table of Contents

of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. For example, although eravacycline achieved favorable results in our Phase 2 trial in cIAI, we may nonetheless fail to achieve success in our pivotal Phase 3 program for eravacycline. We have not previously conducted a clinical trial to evaluate eravacycline in treating cUTI and have not tested any oral formulation of eravacycline in any clinical trial designed to evaluate its therapeutic efficacy in any indication. Moreover, the primary endpoint we are using for our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI differs from the primary endpoint we successfully achieved in our Phase 2 trial in cIAI. The primary endpoint of this Phase 3 clinical trial is clinical response in the microbiological intent-to-treat patient population, which includes all randomized patients who have baseline bacterial pathogens that cause cIAI and against which the dosed eravacycline or ertapenem has antibacterial activity, at the test-of-cure visit 25 to 31 days after the initial dose of treatment. Our Phase 2 primary endpoint was clinical response at the test-of-cure visit that took place ten to 14 days after the last dose of the drug was administered (approximately 16 to 21 days after randomization) in microbiologically evaluable patients, a narrower patient population. Clinical response was defined as complete resolution or significant improvement of signs or symptoms of infection with no further systemic antibiotic treatment required.

In addition, preclinical and clinical data are often susceptible to varying interpretations and analyses. Many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval for the product candidates. Even if we believe that the results of our clinical trials warrant marketing approval, the FDA or comparable foreign regulatory authorities may disagree and may not grant marketing approval of our product candidates.

In some instances, there can be significant variability in safety and/or efficacy results between different trials of the same product candidate due to numerous factors, including changes in trial procedures set forth in protocols, differences in the size and type of the patient populations, adherence to the dosing regimen and other trial protocols and the rate of dropout among clinical trial participants. In the case of our clinical trials, results may differ on the basis of the type of bacteria with which patients are infected. We cannot assure you that any Phase 2, Phase 3 or other clinical trials that we may conduct will demonstrate consistent or adequate efficacy and safety to obtain regulatory approval to market our product candidates.

We may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent us from obtaining regulatory approval for eravacycline or any of our other product candidates, including:

- clinical trials of our product candidates may produce unfavorable or inconclusive results;
- we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development programs;
- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or participants may drop out of these clinical trials at a higher rate than we anticipate;
- our third-party contractors, including those manufacturing our product candidates or conducting clinical trials on our behalf, may fail to comply with regulatory requirements or meet their contractual obligations to

us in a timely manner, or at all;

regulators or institutional review boards may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;

we may have delays in reaching or fail to reach agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites;

we may have to suspend or terminate clinical trials of our product candidates for various reasons, including a finding that the participants are being exposed to unacceptable health risks, undesirable side effects or other unexpected characteristics of the product candidate;

Table of Contents

regulators or institutional review boards may require that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks, undesirable side effects or other unexpected characteristics of the product candidate;

the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third-party manufacturers with which we enter into agreement for clinical and commercial supplies;

the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate; and

the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

If we are required to conduct additional clinical trials or other testing of eravacycline, either in an intravenous or oral dosage form, or any other product candidate that we develop beyond the trials and testing that we contemplate, if we are unable to successfully complete clinical trials of our product candidates or other testing, if the results of these trials or tests are unfavorable or are only modestly favorable or if there are safety concerns associated with eravacycline or our other product candidates, we may:

be delayed in obtaining marketing approval for our product candidates;

not obtain marketing approval at all;

obtain approval for indications or patient populations that are not as broad as intended or desired;

obtain approval with labeling that includes significant use or distribution restrictions or significant safety warnings, including boxed warnings;

be subject to additional post-marketing testing or other requirements; or

remove the product from the market after obtaining marketing approval.

Our product development costs will also increase if we experience delays in testing or marketing approvals and we may be required to obtain additional funds to complete clinical trials. We cannot assure you that our clinical trials will begin as planned or be completed on schedule, if at all, or that we will not need to restructure our trials after they have begun. Significant clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do and impair our ability to successfully commercialize our product candidates, which may harm our business and results of

operations. In addition, many of the factors that cause, or lead to, clinical trial delays may ultimately lead to the denial of regulatory approval of eravacycline or any other product candidate.

If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

We may not be able to initiate or continue clinical trials for eravacycline or any other product candidate that we develop if we are unable to locate and enroll a sufficient number of eligible patients to participate in clinical trials for eravacycline or other product candidate as required by the FDA or comparable foreign regulatory authorities, such as the EMA. Patient enrollment is a significant factor in the timing of clinical trials, and is affected by many factors, including:

the size and nature of the patient population;

the severity of the disease under investigation;

the proximity of patients to clinical sites;

the eligibility criteria for the trial;

Table of Contents

the design of the clinical trial; and

competing clinical trials and clinicians and patients perceptions as to the potential advantages and risks of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating.

The inclusion and exclusion criteria for our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and our planned Phase 3 clinical trial of eravacycline for the treatment of cUTI may adversely affect our enrollment rates for patients in these trials. In addition, many of our competitors also have ongoing clinical trials for product candidates that treat the same indications as eravacycline, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors product candidates.

Our inability to enroll a sufficient number of patients for our clinical trials would result in significant delays or may require us to abandon one or more clinical trials altogether. Enrollment delays in our clinical trials may result in increased development costs for our product candidates, slow down or halt our product development and approval process and jeopardize our ability to commence product sales and generate revenues, which would cause the value of our company to decline and limit our ability to obtain additional financing if needed.

Serious adverse events or undesirable side effects or other unexpected properties of eravacycline or any other product candidate may be identified during development or after approval, if obtained, that could delay, prevent or cause the withdrawal of the product candidates regulatory approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if obtained.

Serious adverse events or undesirable side effects caused by, or other unexpected properties of, our product candidates could cause us, an institutional review board, or regulatory authorities to interrupt, delay or halt our clinical trials and could result in a more restrictive label, the imposition of distribution or use restrictions or the delay or denial of regulatory approval by the FDA or comparable foreign regulatory authorities. If eravacycline or any of our other product candidates are associated with serious adverse events or undesirable side effects or have properties that are unexpected, we may need to abandon their development or limit development to certain 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. Many compounds that initially showed promise in clinical or earlier stage testing have later been found to cause undesirable or unexpected side effects that prevented further development of the compound.

In our clinical trials of eravacycline, some treatment-related adverse events have been reported. The most common treatment-related adverse events observed in clinical trials of eravacycline have been nausea and vomiting. Additional adverse events, undesirable side effects or other unexpected properties of eravacycline or any of our other product candidates could arise or become known either during clinical development or, if approved, after the approved product has been marketed. If such an event occurs during development, our trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of, or deny approval of, eravacycline or our other product candidates. If such an event occurs after eravacycline or such other product candidates are approved, a number of potentially significant negative consequences may result, including:

regulatory authorities may withdraw the approval of such product;

regulatory authorities may require additional warnings on the label or impose distribution or use restrictions;

regulatory authorities may require one or more postmarket studies;

we may be required to create a medication guide outlining the risks of such side effects for distribution to patients;

we could be sued and held liable for harm caused to patients; and

our reputation may suffer.

Table of Contents

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product candidate, if approved, or could substantially increase commercialization costs and expenses, which could delay or prevent us from generating revenues from the sale of our products and harm our business and results of operations.

Even if eravacycline or any other product candidate that we develop receives marketing approval, it may fail to achieve the degree of market acceptance by physicians, patients, third-party payors and others in the medical community necessary for commercial success and the market opportunity for eravacycline or other product candidates may be smaller than we estimate.

We have never commercialized a product candidate for any indication. Even if eravacycline or any other product candidates that we develop are approved by the appropriate regulatory authorities for marketing and sale, they may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. Efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may not be successful. If physicians, rightly or wrongly, associate our product candidates with antibiotic resistance issues of other products of the same class, physicians might not prescribe our product candidates for treating a broad range of infections. If eravacycline or any other product candidate that we develop does not achieve an adequate level of market acceptance, we may not generate significant product revenues and, therefore, we may not become profitable. The degree of market acceptance of eravacycline, if approved, or any other product candidate that is approved for commercial sale, will depend on a number of factors, including:

- the efficacy and safety of the product;
- the potential advantages of the product compared to alternative treatments;
- the prevalence and severity of any side effects;
- the clinical indications for which the product is approved;
- limitations or warnings, including distribution or use restrictions, contained in the product s approved labeling or an approved risk evaluation and mitigation strategy;
- our ability to offer the product for sale at competitive prices;
- the product s convenience and ease of administration compared to alternative treatments, including, in the case of eravacycline, the availability of the oral formulation that we are developing for use in intravenous-to-oral step-down therapy;
- the willingness of the target patient population to try, and of physicians to prescribe, the product;

whether the product is designated under physician treatment guidelines as a first-line therapy or as a second- or third-line therapy for particular infections;

the strength of marketing and distribution support;

the approval of other new products for the same indications;

the timing of market introduction of our approved products as well as competitive products;

the cost of treatment in relation to alternative treatments;

availability and level of coverage and amount of reimbursement from government payors, managed care plans and other third party payors;

the effectiveness of our sales and marketing efforts;

adverse publicity about the product or favorable publicity about competitive products; and

the development of resistance by bacterial strains to the product.

Table of Contents

In addition, the potential market opportunity for eravacycline is difficult to estimate. Our estimates of the potential market opportunity are predicated on several key assumptions such as industry knowledge and publications, third-party research reports and other surveys. While we believe that our internal assumptions are reasonable, these assumptions involve the exercise of significant judgment on the part of our management, are inherently uncertain and the reasonableness of these assumptions has not been assessed by an independent source. If any of the assumptions proves to be inaccurate, then the actual market for eravacycline could be smaller than our estimates of the potential market opportunity. If the actual market for eravacycline is smaller than we expect, or if the product fails to achieve an adequate level of acceptance by physicians, health care payors and patients, our product revenue may be limited and it may be more difficult for us to achieve or maintain profitability.

If we are unable to establish sales, marketing and distribution capabilities or enter into sales, marketing and distribution agreements with third parties, we may not be successful in commercializing eravacycline or such other product candidates that we develop if and when eravacycline or any other product candidates are approved.

We do not have a sales, marketing or distribution infrastructure and have no experience in the sales, marketing or distribution of pharmaceutical products. To achieve commercial success for any approved product, we must either develop a sales and marketing organization or outsource these functions to third parties. We intend to develop and build a commercial organization in the United States and recruit experienced sales, marketing and distribution professionals, which will require substantial resources, will be time-consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing and distribution capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization costs. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel. In addition, we may not be able to hire a sales force in the United States that is sufficient in size or has adequate expertise in the medical markets that we intend to target. If we are unable to establish a sales force and marketing and distribution capabilities, our operating results may be adversely affected.

Factors that may inhibit our efforts to commercialize our products on our own include:

- our inability to recruit and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to or persuade adequate numbers of physicians to prescribe any future products;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

We plan to commercialize eravacycline outside the United States with the assistance of collaborators. As a result of entering into arrangements with third parties to perform sales, marketing and distribution services, our product revenues or the profitability of these product revenues to us may be lower than if we were to directly market and sell products in those markets. Furthermore, we may be unsuccessful in entering into the necessary arrangements with third parties or may be unable to do so on terms that are favorable to us. In addition, 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 do not establish sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our product candidates.

Table of Contents

We face substantial competition from other pharmaceutical and biotechnology companies and our operating results may suffer if we fail to compete effectively.

The development and commercialization of new drug products is highly competitive. We face competition from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide with respect to eravacycline and our other product candidates that we may seek to develop or commercialize in the future. There are a number of large pharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of product candidates for the treatment of multi-drug resistant infections. Potential competitors also include academic institutions, government agencies and other public and private research organizations. Our competitors may succeed in developing, acquiring or licensing technologies and drug products that are more effective or less costly than eravacycline or any other product candidates that we are currently developing or that we may develop, which could render our product candidates obsolete or noncompetitive.

There are a variety of available therapies marketed for the treatment of multi-drug resistant infections that we would expect would compete with eravacycline, including meropenem, which is marketed by AstraZeneca as Merrem, imipenem/cilastatin, which is marketed by Merck as Primaxin, tigecycline, which is marketed by Pfizer as Tygacil, levofloxacin, which is marketed by Ortho-McNeil and Johnson & Johnson as Levaquin, and piperacillin/tazobactam, which is marketed by Pfizer as Zosyn. Many of the available therapies are well-established and widely accepted by physicians, patients and third-party payors. Insurers and other third-party payors may also encourage the use of generic products. If eravacycline is approved, it may be priced at a significant premium over other competitive products. This may make it difficult for eravacycline to compete with these products.

There are also a number of products in clinical development by third parties to treat multi-drug resistant infections, including ceftazidime/avibactam, which is being developed by AstraZeneca, and ceftolozane/tazobactam, which is being developed by Cubist. If our competitors obtain marketing approval from the FDA or comparable foreign regulatory authorities for their product candidates more rapidly than we do, it could result in our competitors establishing a strong market position before we are able to enter the market.

Many of our competitors have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller and other early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

In July 2012, the Food and Drug Administration Safety and Innovation Act was passed, which included the Generating Antibiotics Incentives Now Act, or the GAIN Act. The GAIN Act is intended to provide incentives for the development of new, qualified infectious disease products. These incentives may result in more competition in the market for new antibiotics, and may cause pharmaceutical and biotechnology companies with more resources than we have to shift their efforts towards the development of products that could be competitive with eravacycline and our other product candidates.

Even if we are able to commercialize eravacycline or any other product candidate that we develop, the product may become subject to unfavorable pricing regulations, third-party payor coverage and reimbursement policies or healthcare reform initiatives that could harm our business.

Marketing approvals, pricing, coverage and reimbursement for new drug products vary widely from country to country. Some countries require approval of the sale price of a drug before it can be marketed. In many

Table of Contents

countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, which may negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if our product candidates obtain marketing approval.

Our ability to commercialize eravacycline or any other product candidate will depend in part on the extent to which coverage and reimbursement for these products and related treatments will be available from government authorities, private health insurers, health maintenance organizations and other third-party payors. The healthcare industry is acutely focused on cost containment, both in the United States and elsewhere. As a result, government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications, which could affect our ability to sell our product candidates profitably.

There may also be delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the indications for which the drug is approved by the FDA or comparable foreign regulatory authorities. Increasingly, third-party payors are requiring higher levels of evidence of the benefits and clinical outcomes of new technologies and are challenging the prices charged. Moreover, obtaining coverage does not imply that any drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Reimbursement rates may vary, by way of example, according to the use of the drug and the clinical setting in which it is used. Reimbursement rates may also be based in part on existing reimbursement amounts for lower cost drugs or may be bundled into the payments for other services.

We cannot be sure that coverage will be available for eravacycline or any other product candidate that we commercialize and, if available, that the reimbursement rates will be adequate. Further, the net reimbursement for drug products may be subject to additional reductions if there are changes to laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. An inability to promptly obtain coverage and adequate payment rates from both government-funded and private payors for any approved products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

Product liability lawsuits against us could divert our resources, cause us to incur substantial liabilities and limit commercialization of any products that we may develop.

We face an inherent risk of product liability claims as a result of the clinical testing of our product candidates despite obtaining appropriate informed consents from our clinical trial participants. We will face an even greater risk if we commercially sell eravacycline or any other product candidate that we develop. For example, we may be sued if any product we develop allegedly causes injury or is found to be otherwise unsuitable during clinical 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, negligence, strict liability or a breach of warranties. 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 commercialization of our product candidates. Regardless of the merits or eventual outcome, liability claims may result in:

reduced resources of our management to pursue our business strategy;

decreased demand for our product candidates or products that we may develop;

injury to our reputation and significant negative media attention;

withdrawal of clinical trial participants;

initiation of investigations by regulators;

Table of Contents

product recalls, withdrawals or labeling, marketing or promotional restrictions;

significant costs to defend resulting litigation;

substantial monetary awards to trial participants or patients;

loss of revenue; and

the inability to commercialize any products that we may develop.

Although we maintain general liability insurance of $6 million in the aggregate and clinical trial liability insurance of $6 million in the aggregate for eravacycline, this insurance may not fully cover potential liabilities that we may incur. The cost of any product liability litigation or other proceeding, even if resolved in our favor, could be substantial. We will need to increase our insurance coverage if and when we begin selling eravacycline or any other product candidate that receives marketing approval. In addition, insurance coverage is becoming increasingly expensive. If we are unable to obtain or maintain sufficient insurance coverage at an acceptable cost or to otherwise protect against potential product liability claims, it could prevent or inhibit the development and commercial production and sale of our product candidates, which could adversely affect our business, financial condition, results of operations and prospects.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. From time to time and in the future, our operations may involve the use of hazardous and flammable materials, including chemicals and biological materials, and may also produce hazardous waste products. Even if we contract with third parties for the disposal of these materials and wastes, we cannot completely eliminate the risk of contamination or injury resulting from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

We maintain workers compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, but this insurance may not provide adequate coverage against potential liabilities. However, we do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. Current or future environmental laws and regulations may impair our research, development or production efforts, which could adversely affect our business, financial condition, results of operations or prospects. In addition, failure to comply with these laws and regulations may result in substantial fines, penalties or other sanctions.

Risks Related to Our Dependence on Third Parties

We expect to depend on collaborations with third parties for the development and commercialization of some of our product candidates. Our prospects with respect to those product candidates will depend in part on the success of those collaborations.

Although we expect to commercialize eravacycline ourselves in the United States, we intend to seek to commercialize eravacycline outside the United States through collaboration arrangements. In addition, we may seek third-party collaborators for development and commercialization of other product candidates. Our likely collaborators for any marketing, distribution, development, licensing or broader collaboration arrangements include large and mid-size pharmaceutical companies, regional and national pharmaceutical companies and biotechnology companies. We are not currently party to any such arrangements.

Table of Contents

We may derive revenue from research and development fees, license fees, milestone payments and royalties under any collaborative arrangement into which we enter. Our ability to generate revenues from these arrangements will depend on our collaborators abilities to successfully perform the functions assigned to them in these arrangements. In addition, our collaborators may have the right to abandon research or development projects and terminate applicable agreements, including funding obligations, prior to or upon the expiration of the agreed upon terms. As a result, we can expect to relinquish some or all of the control over the future success of a product candidate that we license to a third party.

Collaborations involving our product candidates may pose a number of risks, including the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not perform their obligations as expected or in compliance with applicable regulatory requirements;
- collaborators may not pursue development and commercialization of our product candidates or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborators strategic focus or available funding, or external factors, such as an acquisition, that divert resources or create competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- product candidates discovered in collaboration with us may be viewed by our collaborators as competitive with their own product candidates or products, which may cause collaborators to cease to devote resources to the commercialization of our product candidates;
- a collaborator with marketing and distribution rights to one or more products may not commit sufficient resources to the marketing and distribution of such product or products;
- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or termination of the research, development or commercialization of product candidates, might lead to additional responsibilities for us with respect to product candidates, or might result in litigation or arbitration, any of which would be time-consuming and expensive;

collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential litigation;

collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability; and

collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates.

Collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner or at all. If a collaborator of ours is involved in a business combination, it could decide to delay, diminish or terminate the development or commercialization of any product candidate licensed to it by us.

We may have to alter our development and commercialization plans if we are not able to establish collaborations.

We will require additional funds to complete the development and potential commercialization of eravacycline and our other product candidates. For some of our product candidates, we may decide to collaborate with pharmaceutical and biotechnology companies for the development and potential commercialization of those

Table of Contents

product candidates. For example, we intend to utilize a variety of types of collaboration arrangements for commercialization outside the United States.

We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator s resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator s evaluation of a number of factors. Those factors may include:

- the design or results of clinical trials;
- the likelihood of approval by the FDA or comparable foreign regulatory authorities;
- the potential market for the subject product candidate;
- the costs and complexities of manufacturing and delivering such product candidate to patients;
- the potential for competing products;
- our patent position protecting the product candidate, including any uncertainty with respect to our ownership of our technology or our licensor s ownership of technology we license from them, which can exist if there is a challenge to such ownership without regard to the merits of the challenge;
- the need to seek licenses or sub-licenses to third-party intellectual property; and
- industry and market conditions generally.

The collaborator may also consider alternative product candidates or technologies for similar indications that may be available for collaboration and whether such collaboration could be more attractive than the one with us for our product candidate. We may also be restricted under future license agreements from entering into agreements on certain terms with potential collaborators. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators.

If we are unable to reach agreements with suitable collaborators on a timely basis, on acceptable terms, or at all, we may have to curtail the development of a product candidate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to fund and undertake development or commercialization activities on our own, we may need to obtain additional expertise and additional capital, which may not be available to us on acceptable terms or at all. If we fail to enter into collaborations and do not have sufficient funds or expertise to undertake the necessary

development and commercialization activities, we may not be able to further develop our product candidates or bring them to market and our business may be materially and adversely affected.

We rely on third parties to conduct our clinical trials. If they do not perform satisfactorily, our business may be materially harmed.

We do not independently conduct clinical trials of eravacycline. We rely on third parties, such as contract research organizations, clinical data management organizations, medical institutions and clinical investigators, to conduct our clinical trials for eravacycline and expect to rely on these third parties to conduct clinical trials of any other product candidate that we develop. Any of these third parties may terminate their engagements with us at any time. If we need to enter into alternative arrangements, it would delay our product development activities.

Our reliance on these third parties for clinical development activities limits our control over these activities but we remain responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards. For example, notwithstanding the obligations of a contract research organization for a trial of one of our product candidates, we remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires us to comply with standards, commonly referred to as current Good Clinical

Table of Contents

Practices, or cGCPs, for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. The FDA enforces these cGCPs through periodic inspections of trial sponsors, principal investigators, clinical trial sites and institutional review boards. If we or our third party contractors fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA may require us to perform additional clinical trials before approving our product candidates, which would delay the regulatory approval process. We cannot assure you that, upon inspection, the FDA will determine that any of our clinical trials comply with cGCPs. We are also required to register clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

Furthermore, the third parties conducting clinical trials on our behalf are not our employees, and except for remedies available to us under our agreements with such contractors, we cannot control whether or not they devote sufficient time and resources to our ongoing development programs. These contractors 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, which could impede their ability to devote appropriate time to our clinical programs. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we may not be able to obtain, or may be delayed in obtaining, marketing approvals for our product candidates. If that occurs, we will not be able to, or may be delayed in our efforts to, successfully commercialize our product candidates. In such an event, our financial results and the commercial prospects for eravacycline or any other product candidates that we seek to develop could be harmed, our costs could increase and our ability to generate revenues could be delayed, impaired or foreclosed.

We also rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our product candidates or commercialization of any resulting products, producing additional losses and depriving us of potential product revenue.

We contract with third parties for the manufacture of eravacycline for clinical trials and expect to continue to do so in connection with the commercialization of eravacycline and for clinical trials and commercialization of any other product candidates that we develop. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We do not currently have nor do we plan to build the internal infrastructure or capability to manufacture eravacycline or our other product candidates for use in the conduct of our clinical trials or for commercial supply. We currently rely on and expect to continue to rely on third-party contract manufacturers to manufacture clinical supplies of eravacycline and our other product candidates, and we expect to rely on third party contract manufacturers to manufacture commercial quantities of any product candidate that we commercialize following approval for marketing by applicable regulatory authorities. Reliance on third-party manufacturers entails risks, including:

- manufacturing delays if our third-party manufacturers give greater priority to the supply of other products over our product candidates or otherwise do not satisfactorily perform according to the terms of the agreement between us;

the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us;

the possible breach of the manufacturing agreement by the third party;

the failure of the third-party manufacturer to comply with applicable regulatory requirements; and

the possible misappropriation of our proprietary information, including our trade secrets and know-how.

Table of Contents

We currently rely on a small number of third-party contract manufacturers for all of our required raw materials, drug substance and finished product for our preclinical research and clinical trials. We do not have long-term agreements with any of these third parties. We also do not have any current contractual relationships for the manufacture of commercial supplies of any of our other product candidates. If any of our existing manufacturers should become unavailable to us for any reason, we may incur some delay in identifying or qualifying replacements.

If any of our product candidates are approved by any regulatory agency, we intend to enter into agreements with third-party contract manufacturers for the commercial production of those products. This process is difficult and time consuming and we may face competition for access to manufacturing facilities as there are a limited number of contract manufacturers operating under cGMPs that are capable of manufacturing our product candidates. Consequently, we may not be able to reach agreement with third-party manufacturers on satisfactory terms, which could delay our commercialization.

Third-party manufacturers are required to comply with cGMPs and similar regulatory requirements outside the United States. Facilities used by our third-party manufacturers must be inspected by the FDA after we submit an NDA and before potential approval of the product candidate. Similar regulations apply to manufacturers of our product candidates for use or sale in foreign countries. We do not control the manufacturing process and are completely dependent on our third-party manufacturers for compliance with the applicable regulatory requirements for the manufacture of our product candidates. If our manufacturers cannot successfully manufacture material that conforms to the strict regulatory requirements of the FDA and any applicable foreign regulatory authority, they will not be able to secure the applicable approval for their manufacturing facilities. If these facilities are not approved for commercial manufacture, we may need to find alternative manufacturing facilities, which could result in delays in obtaining approval for the applicable product candidate. In addition, our manufacturers are subject to ongoing periodic unannounced inspections by the FDA and corresponding state and foreign agencies for compliance with cGMPs and similar regulatory requirements. Failure by any of our manufacturers to comply with applicable cGMPs or other regulatory requirements could result in sanctions being imposed on us or the contract manufacturer, including fines, injunctions, civil penalties, delays, suspensions or withdrawals of approvals, operating restrictions, interruptions in supply and criminal prosecutions, any of which could significantly and adversely affect supplies of our product candidates and have a material adverse impact on our business, financial condition and results of operations.

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

If we fail to comply with our obligations in the agreements under which we in-license or acquire development or commercialization rights to products or technology from third parties, we could lose commercial rights that are important to our business.

We are a party to a license agreement with Harvard that imposes, and we may enter into additional agreements, including license agreements, with other parties in the future that impose, diligence, development and commercialization timelines, milestone payment, royalty, insurance and other obligations on us. For instance, under our license agreement with Harvard, we are obligated to satisfy diligence requirements, including using commercially reasonable efforts to develop and commercialize licensed compounds and to implement a specified development plan, meeting specified development milestones and providing an update on progress on an annual basis. If we fail to comply with these obligations, our counterparties may have the right to terminate these agreements, in which event we might not be able to develop, manufacture or market any product that is covered by these agreements, which could materially adversely affect the value of the product candidate being developed under any such agreement. Termination of these agreements or reduction or elimination of our rights under these agreements may result in our having to

negotiate new or reinstated agreements with less favorable terms, or cause us to lose our rights under these agreements, including our rights to important intellectual property or technology.

Table of Contents

Our reliance on government funding for certain of our programs adds uncertainty to our research and commercialization efforts with respect to those programs and may impose requirements that increase the costs of commercialization and production of product candidates developed under those government-funded programs.

Our development of eravacycline for the treatment of disease caused by bacterial biothreat pathogens is currently being funded through a subcontract with funding from BARDA. In addition, our development of TP-271 is being funded through a subcontract and grant subaward with funding from the NIH s NIAID division. Contracts and grants funded by the U.S. government and its agencies, including our agreements funded by BARDA and NIAID, include provisions that reflect the government s substantial rights and remedies, many of which are not typically found in commercial contracts, including powers of the government to:

- terminate agreements, in whole or in part, for any reason or no reason;
- reduce or modify the government s obligations under such agreements without the consent of the other party;
- claim rights, including intellectual property rights, in products and data developed under such agreements;
- audit contract-related costs and fees, including allocated indirect costs;
- suspend the contractor or grantee from receiving new contracts pending resolution of alleged violations of procurement laws or regulations;
- impose U.S. manufacturing requirements for products that embody inventions conceived or first reduced to practice under such agreements;
- suspend or debar the contractor or grantee from doing future business with the government;
- control and potentially prohibit the export of products;
- pursue criminal or civil remedies under the False Claims Act, False Statements Act and similar remedy provisions specific to government agreements; and
- limit the government s financial liability to amounts appropriated by the U.S. Congress on a fiscal-year basis, thereby leaving some uncertainty about the future availability of funding for a program even after it has been funded for an initial period.

We may not have the right to prohibit the U.S. government from using certain technologies developed by us, and we may not be able to prohibit third party companies, including our competitors, from using those technologies in

providing products and services to the U.S. government. The U.S. government generally takes the position that it has the right to royalty-free use of technologies that are developed under U.S. government contracts.

In addition, government contracts and grants, and subcontracts and subawards awarded in the performance of those contracts and grants, normally contain additional requirements that may increase our costs of doing business, reduce our profits, and expose us to liability for failure to comply with these terms and conditions. These requirements include, for example:

- specialized accounting systems unique to government contracts and grants;
- mandatory financial audits and potential liability for price adjustments or recoupment of government funds after such funds have been spent;
- public disclosures of certain contract and grant information, which may enable competitors to gain insights into our research program; and
- mandatory socioeconomic compliance requirements, including labor standards, non-discrimination and affirmative action programs and environmental compliance requirements.

Table of Contents

As an organization, we are relatively new to government contracting and new to the regulatory compliance obligations that such contracting entails. If we fail to maintain compliance with those obligations, we may be subject to potential liability and to termination of our contracts.

As a U.S. government contractor, we are subject to financial audits and other reviews by the U.S. government of our costs and performance on their contracts, as well as our accounting and general business practices related to these contracts. Based on the results of its audits, the government may adjust our contract-related costs and fees, including allocated indirect costs. Although adjustments arising from government audits and reviews have not had a material adverse effect on our financial condition or results of operations in the past, we cannot assure you that future audits and reviews will not have those effects.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain sufficient patent protection for our technology or our product candidates, or if the scope of the patent protection is not sufficiently broad, our competitors could develop and commercialize technology and products similar or identical to ours, and our ability to successfully commercialize our technology and product candidates may be adversely affected.

Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our proprietary chemistry technology and product candidates. If we do not adequately protect our intellectual property, competitors may be able to use our technologies and erode or negate any competitive advantage we may have, which could harm our business and ability to achieve profitability. To protect our proprietary position, we file patent applications in the United States and abroad related to our novel technologies and product candidates that are important to our business. The patent application and approval process is expensive and time-consuming. We may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. We may also fail to identify patentable aspects of our research and development before it is too late to obtain patent protection.

Under our license agreement with Harvard, Harvard retains the right to prosecute and maintain specified Harvard patents and patent applications in the field of tetracycline chemistry, which are exclusively licensed to us under the agreement. Moreover, if we license technology or product candidates from third parties in the future, those licensors may retain the right to prosecute, maintain and enforce the patent rights that they license to us with or without our involvement. Because control of prosecution and maintenance rests with Harvard, and prosecution, maintenance and enforcement could rest with future licensors, we cannot be certain that these in-licensed patents and applications will be prosecuted, maintained and enforced in a manner consistent with the best interests of our business. If Harvard fails to prosecute or maintain, or future licensors fail to prosecute, maintain or enforce, those patents necessary for any of our 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 and selling competing products.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain. No consistent policy regarding the breadth of claims allowed in biotechnology and pharmaceutical patents has emerged to date in the United States or in many foreign jurisdictions. In addition, the determination of patent rights with respect to pharmaceutical compounds and technologies commonly involves complex legal and factual questions, which has in recent years been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Furthermore, recent changes in patent laws in the United States, including the America Invents Act of 2011, may affect the scope, strength and enforceability of our patent rights or the nature of proceedings which may be brought by us related to our patent rights.

Our pending and future patent applications may not result in patents being issued that protect our technology or product candidates, in whole or in part, or that effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection.

Table of Contents

As a result of the America Invents Act of 2011, the United States transitioned to a first-inventor-to-file system in March 2013, under which, assuming the other requirements for patentability are met, the first inventor to file a patent application is entitled to the patent. However, as a result of the lag in the publication of patent applications following filing in the United States, we are not be able to be certain upon filing that we are the first to file for patent protection for any invention. Moreover, we may be subject to a third party preissuance submission of prior art to the U.S. Patent and Trademark Office, or become involved in opposition, derivation, reexamination, *inter partes* review or interference proceedings, in the United States or elsewhere, challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of or invalidate our patent rights, allow third parties to commercialize our technology or product candidates and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights.

Even if our patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our owned or licensed patents by developing similar or alternative technologies or products in a non-infringing manner. Our competitors may seek to market generic versions of any approved products by submitting Abbreviated New Drug Applications to the FDA in which they claim that patents owned or licensed by us are invalid, unenforceable and/or not infringed. Alternatively, our competitors may seek approval to market their own products similar to or otherwise competitive with our products. In these circumstances, we may need to defend and/or assert our patents, including by filing lawsuits alleging patent infringement. In any of these types of proceedings, a court or other agency with jurisdiction may find our patents invalid and/or unenforceable. Even if we have valid and enforceable patents, these patents still may not provide protection against competing products or processes sufficient to achieve our business objectives.

The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our owned and licensed patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which 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 our technology and products. In addition, given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our patents, trademarks, copyrights or other intellectual property, or those of our licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time consuming and divert the time and attention of our management and scientific personnel. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents. In addition, in a patent infringement proceeding, there is a risk that a court will decide that a patent of ours is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of such patents is upheld, the court will construe the patent s claims narrowly or decide that we do not have the right to stop the other party from using the invention at issue on the grounds that our patents do not cover the invention. An adverse outcome in a litigation or proceeding involving our patents could limit our ability to assert our patents against those parties or other competitors, and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Any of these occurrences could adversely affect our competitive business position, business prospects and

financial condition. Similarly, if we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

Table of Contents

In any infringement litigation, any award of monetary damages we receive may not be commercially valuable. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during litigation. Moreover, there can be no assurance that we will have sufficient financial or other resources to file and pursue such infringement claims, which typically last for years before they are concluded. Even if we ultimately prevail in such claims, the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings.

If we are sued for infringing intellectual property rights of third parties, such litigation could be costly and time consuming and could prevent or delay us from developing or commercializing our product candidates.

Our commercial success depends, in part, on our ability to develop, manufacture, market and sell our product candidates and use our proprietary chemistry technology without infringing the intellectual property and other proprietary rights of third parties. Numerous third-party U.S. and non-U.S. issued patents and pending applications exist in the area of antibacterial treatment, including compounds, formulations, treatment methods and synthetic processes that may be applied towards the synthesis of antibiotics. If any of their patents or patent applications cover our product candidates or technologies, we may not be free to manufacture or market our product candidates as planned.

There is a substantial amount of intellectual property litigation in the biotechnology and pharmaceutical industries, and we may become party to, or threatened with, litigation or other adversarial proceedings regarding intellectual property rights with respect to our technology or products candidates, including interference proceedings before the U.S. Patent and Trademark Office. Third parties may assert infringement claims against us based on existing or future intellectual property rights. The outcome of intellectual property litigation is subject to uncertainties that cannot be adequately quantified in advance. The pharmaceutical and biotechnology industries have produced a significant number of patents, and it may not always be clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we are sued for patent infringement, we would need to demonstrate that our product candidates, products or methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid, and we may not be able to do this. Proving invalidity is difficult. For example, in the United States, proving invalidity requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents. Even if we are successful in these proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted in pursuing these proceedings, which could have a material adverse effect on us. In addition, we may not have sufficient resources to bring these actions to a successful conclusion.

If we are found to infringe a third party s intellectual property rights, we could be forced, including by court order, to cease developing, manufacturing or commercializing the infringing product candidate or product. Alternatively, we may be required to obtain a license from such third party in order to use the infringing technology and continue developing, manufacturing or marketing the infringing product candidate. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In addition, we could be found liable for monetary damages, including treble damages and attorneys fees if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

33

Table of Contents

We may be subject to claims that we or our employees have misappropriated the intellectual property of a third party, or claiming ownership of what we regard as our own intellectual property.

Many of our employees were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees do not use the intellectual property and other proprietary information or know-how of others in their work for us, we may be subject to claims that we or these employees have used or disclosed such intellectual property or other proprietary information. Litigation may be necessary to defend against these claims.

In addition, while we typically require our employees, consultants and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact develops intellectual property that we regard as our own. Moreover, because we have licensed intellectual property from Harvard, we must rely on Harvard s practices with regard to the assignment of intellectual property to it. To the extent we or Harvard have failed to obtain such assignments or such assignments are breached, we may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property. If we fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in prosecuting or defending against such claims, litigation could result in substantial costs and be a distraction to our management and scientific personnel.

If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially adversely affected and our business would be harmed.

In addition to seeking patents for some of our technology and products, we also rely on trade secrets, including unpatented know-how, technology and other proprietary information, in seeking to develop and maintain a competitive position. We seek to protect these trade secrets, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our consultants, independent contractors, advisors, corporate collaborators, outside scientific collaborators, contract manufacturers, suppliers and other third parties. We, as well as our licensors, also enter into confidentiality and invention or patent assignment agreements with employees and certain consultants. Any party with whom we or Harvard have executed such an agreement may breach that agreement 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, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such third party, or those to whom they communicate such technology or information, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our business and competitive position could be harmed.

We have not yet registered our trademarks. Failure to secure those registrations could adversely affect our business.

We have not yet registered our trademarks in the United States or other countries. If we do not secure registrations for our trademarks, we may encounter more difficulty in enforcing them against third parties than we otherwise would, which could adversely affect our business. We have also not yet registered trademarks for any of our product candidates in any jurisdiction. When we file trademark applications for our product candidates those applications may not be allowed for registration, and registered trademarks may not be obtained, maintained or enforced. During trademark registration proceedings in the United States and foreign jurisdictions, we may receive rejections. We are given an opportunity to respond to those rejections, but we may not be able to overcome such rejections. In addition,

in the United States Patent and Trademark Office and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings.

Table of Contents

In addition, any proprietary name we propose to use with eravacycline or any other product candidate in the United States must be approved by the FDA, regardless of whether we have registered it, or applied to register it, as a trademark. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. If the FDA objects to any of our proposed proprietary product names, we may be required to expend significant additional resources in an effort to identify a suitable proprietary product name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA.

Risks Related to Regulatory Approval and Other Legal Compliance Matters

If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals, we will not be able to commercialize eravacycline or any other product candidate that we develop, and our ability to generate revenue will be materially impaired.

Our product candidates, including eravacycline, and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, are subject to comprehensive regulation by the FDA and other regulatory agencies in the United States and by comparable foreign regulatory authorities, with regulations differing from country to country. Failure to obtain marketing approval for a product candidate will prevent us from commercializing the product candidate. We currently do not have any products approved for sale in any jurisdiction. We have only limited experience in filing and supporting the applications necessary to gain marketing approvals and expect to rely on third-party contract research organizations to assist us in this process.

We are not permitted to market our product candidates in the United States until we receive approval of an NDA from the FDA. We have not submitted an NDA for any of our product candidates. An NDA must include extensive preclinical and clinical data and supporting information to establish the product candidate s safety and efficacy for each desired indication. The NDA must also include significant information regarding the chemistry, manufacturing and controls for the product candidate. Obtaining approval of an NDA is a lengthy, expensive and uncertain process. The FDA review process typically takes years to complete. The FDA has substantial discretion in the approval process and may refuse to accept for filing any application or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. Foreign regulatory authorities have differing requirements for approval of drug candidates with which we must comply prior to marketing. Obtaining marketing approval for marketing of a product candidate in one country does not ensure that we will be able to obtain marketing approval in other countries, but the failure to obtain marketing approval in one jurisdiction could negatively impact our ability to obtain marketing approval in other jurisdictions. Delays in approvals or rejections of marketing applications in the United States or foreign countries may be based upon many factors, including regulatory requests for additional analyses, reports, data and studies, regulatory questions regarding, or different interpretations of, data and results, changes in regulatory policy during the period of product development and the emergence of new information regarding product candidates or related products. The FDA or other regulatory authorities may determine that eravacycline or any other product candidate that we develop is not effective, or is only moderately effective, or has undesirable or unintended side effects, toxicities, safety profile or other characteristics that preclude marketing approval or prevent or limit commercial use. In addition, any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable. If we experience delays in obtaining approval or if we fail to obtain approval of eravacycline or any other product candidate that we develop, the commercial prospects for eravacycline or such other product candidate may be harmed and our ability to generate revenues will be materially impaired.

If we are unable to obtain marketing approval in international jurisdictions, we will not be able to market our product candidates abroad.

In order to market and sell eravacycline and any other product candidate that we develop in the European Union and many other jurisdictions, we must obtain separate marketing approvals and comply with numerous

Table of Contents

and varying regulatory requirements. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. The approval procedure varies among countries and can involve additional testing. In addition, clinical trials conducted in one country may not be accepted by regulatory authorities in other countries. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the product be approved for reimbursement before the product can be approved for sale in that country. We may not obtain approvals from regulatory authorities outside the United States on a timely basis or at all.

If we receive regulatory approval for any product candidates, including eravacycline, we will be subject to ongoing obligations and continuing regulatory review, which may result in significant additional expense. Our product candidates, including eravacycline, if approved, could be subject to restrictions 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 our product candidates, when and if approved.

Any product candidate, including eravacycline, for which we obtain marketing approval, will also be subject to ongoing regulatory requirements for labeling, packaging, storage, distribution, advertising, promotion, record-keeping and submission of safety and other post-market information. For example, approved products, manufacturers and manufacturers facilities are required to comply with extensive FDA requirements, including ensuring that quality control and manufacturing procedures conform to cGMPs. As such, we and our contract manufacturers will be subject to continual review and periodic inspections to assess compliance with cGMPs. Accordingly, we and others with whom we work must continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production and quality control. We will also be required to report certain adverse reactions and production problems, if any, to the FDA and to comply with requirements concerning advertising and promotion for our products.

In addition, even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed, may be subject to significant conditions of approval or may impose requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. The FDA closely regulates the post-approval marketing and promotion of drugs to ensure drugs are marketed only for the approved indications and in accordance with the provisions of the approved labeling and regulatory requirements. The FDA also imposes stringent restrictions on manufacturers communications regarding off-label use and if we do not restrict the marketing of our products only to their approved indications, we may be subject to enforcement action for off-label marketing.

If a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or disagrees with the promotion, marketing or labeling of a product, it may impose restrictions on that product or us. In addition, if any product fails to comply with applicable regulatory requirements, a regulatory agency may:

- issue warning or untitled letters;
- mandate modifications to promotional materials or require provision of corrective information to healthcare practitioners;

impose restrictions on the product or its manufacturers or manufacturing processes;

impose restrictions on the labeling or marketing of the product;

impose restrictions on product distribution or use;

require post-marketing clinical trials;

require withdrawal of the product from the market;

Table of Contents

refuse to approve pending applications or supplements to approved applications that we submit;

require recall of the product;

require entry into a consent decree, which can include imposition of various fines (including restitution or disgorgement of profits or revenue), reimbursements for inspection costs, required due dates for specific actions and penalties for noncompliance;

suspend or withdraw marketing approvals;

refuse to permit the import or export of the product;

seize or detain supplies of the product; or

issue injunctions or impose civil or criminal penalties.

Our relationships with customers and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Our future arrangements with third-party payors, healthcare professionals and customers who purchase, recommend or prescribe our product candidates will be subject to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute any products for which we obtain marketing approval. These laws and regulations include, for example, the false claims and anti-kickback statutes and regulations. At such time as we market, sell and distribute any products for which we obtain marketing approval, it is possible that our business activities could be subject to challenge under one or more of these laws and regulations. Restrictions under applicable federal and state healthcare laws and regulations include the following:

the federal Anti-Kickback Statute, among other things, prohibits persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under federally funded healthcare programs such as Medicare and Medicaid;

the federal False Claims Act imposes criminal and civil penalties, which can be enforced by private citizens through civil whistleblower and qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or 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, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program and creates federal criminal laws that prohibit knowingly and 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;

the federal false statements statute prohibits knowingly and 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;

the federal transparency requirements under the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively, the ACA, requires manufacturers of covered drugs, devices, biologics and medical supplies to report to the Department of Health and Human Services information related to payments and other transfers of value to physicians and teaching hospitals and physician ownership and investment interests; and

analogous state laws and regulations, such as state anti-kickback and false claims laws that may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by

non-governmental third-party payors, including private insurers; state laws that require pharmaceutical companies to implement compliance programs, comply with the pharmaceutical industry s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government or track and report gifts, compensation and other remuneration provided to physicians and other health care providers; and state and foreign laws that govern the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, which complicates compliance efforts.

We will be required to spend substantial time and money to ensure that our business arrangements with third parties comply with applicable healthcare laws and regulations. Even then, governmental authorities may conclude that our business practices do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. Recent healthcare reform legislation has strengthened these federal and state healthcare laws. For example, the ACA amends the intent requirement of the federal anti-kickback and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of these statutes or a specific intent to violate them. In addition, the ACA provides that the government may assert that a claim that includes items or services resulting from a violation of the federal anti-kickback statute constitutes a false or fraudulent claim for purposes of the False Claims Act. If governmental authorities find that our operations violate any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and we may be required to curtail or restructure our operations. Moreover, we expect that there will continue to be federal and state laws and regulations, proposed and implemented, that could impact our operations and business. The extent to which future legislation or regulations, if any, relating to healthcare fraud and abuse laws or enforcement, may be enacted or what effect such legislation or regulation would have on our business remains uncertain.

Recently enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and affect the prices we may obtain.

Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and expanding access to healthcare. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. We expect to experience pricing pressures in connection with the sale of any products that we develop, due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative proposals.

In March 2010, the ACA became law in the United States with the goals of broadening access to health insurance, reducing or constraining the growth of healthcare spending, enhancing remedies against fraud and abuse, adding new transparency requirements for health care and health insurance industries and imposing additional health policy reforms. Further, the new law includes annual fees to be paid by manufacturers for certain branded prescription drugs, requires manufacturers to participate in a discount program for certain outpatient drugs under Medicare Part D, increases manufacturer rebate responsibilities under the Medicaid Drug Rebate Program for outpatient drugs dispensed to Medicaid recipients, addresses a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for line extensions and for drugs that are inhaled, infused, instilled, implanted or injected and expands oversight and support for the federal government s comparative effectiveness research of services and products.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. On August 2, 2011, the Budget Control Act of 2011 created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2

trillion for the years 2013 through 2012, was unable to reach required goals, thereby triggering the legislation s automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of up to 2% per fiscal year, which went into effect on April 1, 2013. On

Table of Contents

January 2, 2013, President Obama signed into law the American Taxpayer Relief Act of 2012 which reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our product candidates, if any, may be. In addition, increased scrutiny by the United States Congress of the FDA s approval process may significantly delay or prevent marketing approval, as well as subject us to more stringent product labeling and post-marketing testing and other requirements.

Risks Related to Employee Matters and Managing Growth

Our future success depends on our ability to retain our chief executive officer and other key executives and to attract, retain and motivate qualified personnel.

Our industry has experienced a high rate of turnover of management personnel in recent years. We are highly dependent on the development, regulatory, commercialization and business development expertise of Guy Macdonald, our President and Chief Executive Officer, Patrick Horn, our Chief Medical Officer, David C. Lubner, our Senior Vice President and Chief Financial Officer, and Joyce Sutcliffe, our Senior Vice President, Biology, as well as the other principal members of our management, scientific and clinical team. Although we have formal employment agreements with our executive officers, these agreements do not prevent them from terminating their employment with us at any time.

We do not have formal employment agreements with any of our other employees. If we lose one or more of our executive officers or key employees, our ability to implement our business strategy successfully could be seriously harmed. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to develop, gain regulatory approval of and commercialize products successfully. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these additional key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to develop and commercialize drug candidates will be limited.

We expect to grow our organization, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

We expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of drug development, regulatory affairs and sales, marketing and distribution. Our management may need to divert a disproportionate amount of its attention away from our day-to-day activities to devote time to managing these growth activities. To manage these growth activities, we must continue to implement

and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience

Table of Contents

of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. Our inability to effectively manage the expansion of our operations may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of additional product candidates. If our management is unable to effectively manage our expected growth, our expenses may increase more than expected, our ability to generate revenues could be reduced and we may not be able to implement our business strategy.

If foreign approvals are obtained, we will be subject to additional risks in conducting business in international markets.

Even if we are able to obtain approval for commercialization of a product candidate in a foreign country, we will be subject to additional risks related to international business operations, including:

- potentially reduced protection for intellectual property rights;
- the potential for so-called parallel importing, which is what happens when a local seller, faced with high or higher local prices, opts to import goods from a foreign market (with low or lower prices) rather than buying them locally;
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- production shortages resulting from any events affecting a product candidate and/or finished drug product supply or manufacturing capabilities abroad;
- business interruptions resulting from geo-political actions, including war and terrorism, or natural disasters, including earthquakes, hurricanes, typhoons, floods and fires; and
- failure to comply with Office of Foreign Asset Control rules and regulations and the Foreign Corrupt Practices Act.

These and other risks may materially adversely affect our ability to attain or sustain revenue from international markets.

Risks Related to Our Common Stock and This Offering

The price of our common stock may be volatile and fluctuate substantially, which could result in substantial losses for purchasers of our common stock in this offering.

Our stock price may be volatile. The stock market in general and the market for smaller pharmaceutical and biotechnology 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, you may not be able to sell your common stock at or above the public offering price. The market price for our common stock may be influenced by many factors, including:

- the success of existing or new competitive products or technologies;
- the timing of clinical trials of eravacycline and any other product candidate;
- results of clinical trials of eravacycline and any other product candidate;
- failure or discontinuation of any of our development programs;

Table of Contents

results of clinical trials of product candidates of our competitors;

regulatory or legal developments in the United States and other countries;

developments or disputes concerning patent applications, issued patents or other proprietary rights;

the recruitment or departure of key personnel;

the level of expenses related to any of our product candidates or clinical development programs;

the results of our efforts to develop, in-license or acquire additional product candidates or products;

actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;

announcement or expectation of additional financing efforts;

sales of our common stock by us, our insiders or other stockholders

variations in our financial results or those of companies that are perceived to be similar to us;

changes in estimates or recommendations by securities analysts, if any, that cover our stock;

changes in the structure of healthcare payment systems;

market conditions in the pharmaceutical and biotechnology sectors;

general economic, industry and market conditions; and

the other factors described in this Risk Factors section.

If you purchase shares of common stock in this offering, you will suffer immediate dilution in the book value of your investment.

The public offering price of our common stock is substantially higher than the net tangible book value per share of our common stock. Therefore, if you purchase shares of our common stock in this offering, you will pay a price per share that substantially exceeds our net tangible book value per share after this offering. Based on the public offering price of $10.00 per share, you will experience immediate dilution of $5.86 per share, representing the difference between our net tangible book value per share after giving effect to this offering and the public offering price. Furthermore, if the underwriters exercise their option to purchase additional shares or our previously issued options and warrants to acquire common stock at prices below the assumed public offering price are exercised, you will experience further dilution. For a further description of the dilution that you will experience immediately after this offering, see Dilution.

An active trading market for our common stock may not be sustained.

Although we have listed our common stock on The NASDAQ Global Market, an active trading market for our common stock may not be sustained. In the absence of an active trading market for our common stock, you may not be able to sell your common stock at or above the public offering price or at the time that you would like to sell. An inactive trading market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

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

The trading market for our common stock will depend on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. There can be no assurance that analysts will cover us, or provide favorable coverage. If one or more analysts downgrade our stock or change their opinion of our stock, our share price would likely decline. In addition, if one or more analysts

cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

We have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our common stock to decline and delay the development of our product candidates. Pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

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

We are an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and may remain an emerging growth company for up to five years following our initial public offering in March 2013. 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 not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, 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, 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. In this prospectus, we have not included all of the executive compensation related information that would be required if we were not an emerging growth company. We cannot predict whether investors will 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 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 certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, are subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

We are currently incurring and expect to continue to incur 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 and corporate governance practices.

As a newly public company we are incurring, and, particularly after we are no longer an emerging growth company, we expect that we will incur further, significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of The NASDAQ Global Market and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our

legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance, which could make it more difficult for us to attract and retain qualified members of our board of directors.

Table of Contents

We are currently evaluating these rules and regulations, and cannot predict or estimate the amount of additional costs we may incur or the timing of such costs. These rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, or Section 404, we will be required to furnish a report by our management on our internal control over financial reporting beginning with our second filing of an Annual Report on Form 10-K with the Securities and Exchange Commission. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by Section 404. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements.

A significant portion of our total outstanding shares is restricted from immediate resale but may be sold into the market in the near future, which could cause the market price of our common stock to decline significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares of common stock intend to sell shares, could reduce the market price of our common stock. After this offering, we will have 25,176,298 shares of common stock outstanding based on the 20,676,298 shares outstanding as of September 30, 2013. Of these shares, 3,681,196 shares are subject to a 90-day contractual lock-up with the underwriters for this offering, which period will begin on the date of effectiveness of the registration statement of which this prospectus forms a part. These shares can be sold, subject to any applicable volume limitations under federal securities laws, after the earlier of the expiration of, or release from, the 90-day lock-up period. The balance of our outstanding shares of common stock may be freely sold in the public market at any time to the extent permitted by Rules 144 and 701 under the Securities Act of 1933, as amended, which we refer to as the Securities Act. Moreover, holders of a substantial portion of our common stock have rights, subject to conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders.

In addition, as of September 30, 2013, there were 2,866,985 shares subject to outstanding options under our equity incentive plans, all of which shares we have registered under the Securities Act on a registration statement on Form S-8. These shares, once vested and issued upon exercise, will be able to be freely sold in the public market, subject to volume limits applicable to affiliates and the lock-up agreements described above, to the extent applicable. Furthermore, as of September 30, 2013, there were 104,107 shares subject to outstanding warrants. These shares will become eligible for sale in the public market to the extent such warrants are exercised and to the extent permitted by the lock-up agreements and Rule 144 under the Securities Act.

43

Table of Contents

We do not anticipate paying any cash dividends on our capital stock in the foreseeable future, accordingly, stockholders must rely on capital appreciation, if any, for any return on their investment.

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the operation, development and growth of our business. The terms of our debt facility with Silicon Valley Bank and Oxford Finance preclude us from paying dividends, and any future debt agreements may also preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

After this offering, our executive officers and directors, and their affiliates, if they choose to act together, will continue to have the ability to significantly influence all matters submitted to stockholders for approval.

Upon the closing, our executive officers and directors, combined with their affiliates, will, in the aggregate, beneficially own shares representing approximately 16.97% of our capital stock. As a result, if these stockholders were to choose to act together, they would be able to significantly influence all matters submitted to our stockholders for approval, as well as our management and affairs. For example, these persons, if they choose to act together, would significantly influence the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. This concentration of ownership control may:

- delay, defer or prevent a change in control;
- entrench our management and/or the board of directors; or
- impede a merger, consolidation, takeover or other business combination involving us that other stockholders may desire.

Provisions in our corporate charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our corporate charter and our by-laws may discourage, delay or prevent a merger, acquisition or other change in control of us that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our board of directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Among other things, these provisions:

- establish a classified board of directors such that all members of the board are not elected at one time;
- allow the authorized number of our directors to be changed only by resolution of our board of directors;

limit the manner in which stockholders can remove directors from the board;

establish advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted on at stockholder meetings;

require that stockholder actions must be effected at a duly called stockholder meeting and prohibit actions by our stockholders by written consent;

limit who may call a special meeting of stockholder meetings;

authorize our board of directors to issue preferred stock without stockholder approval, which could be used to institute a poison pill that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our board of directors; and

require the approval of the holders of at least 75% of the votes that all our stockholders would be entitled to cast to amend or repeal certain provisions of our charter or by-laws.

Table of Contents

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. This could discourage, delay or prevent someone from acquiring us or merging with us, whether or not it is desired by, or beneficial to, our stockholders.

This offering may cause or contribute to an ownership change under Section 382 of the Internal Revenue Code of 1986, as amended, which may result in limitations on our use of certain tax attributes.

The sale of shares of our common stock in this offering may cause or contribute to us experiencing an ownership change under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code. If we experience an ownership change, we may be limited in our ability to use certain tax attributes, including our net operating losses, under Section 382 of the Code.

Table of Contents

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, included in this prospectus regarding our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans, objectives of management and expected market growth are forward-looking statements. The words anticipate, believe, estimate, expect, intend, may, plan, project, would and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. These forward-looking statements include, among other things, statements about:

- the anticipated timing, costs and conduct of our ongoing Phase 3 clinical trial of eravacycline for the treatment of complicated intra-abdominal infections, or cIAI, and our planned Phase 3 clinical trial of eravacycline for the treatment of complicated urinary tract infections, or cUTI;
- our anticipated timing for submitting applications for U.S. and foreign regulatory marketing approval for eravacycline;
- our plans to develop and commercialize eravacycline for indications other than cIAI and cUTI;
- our expectations regarding the clinical effectiveness of eravacycline;
- our plans to develop and commercialize our other product candidates;
- our commercialization, marketing and manufacturing capabilities and strategy;
- our intellectual property position;
- our competitive position;
- our expectations related to the use of proceeds from this offering; and
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this prospectus, particularly in the Risk Factors section, that could cause actual results or events to differ materially from the forward-looking statements that we

make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments that we may make.

You should read this prospectus, the documents that we reference in this prospectus and the documents that we have filed as exhibits to the registration statement of which this prospectus is a part completely and with the understanding that our actual future results may be materially different from what we expect. We do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

Table of Contents

USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of 4,500,000 shares of our common stock in this offering will be approximately $41.7 million, or approximately $48.0 million if the underwriters exercise their option to purchase additional shares in full, in each case based on the public offering price of $10.00 per share, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering to fund our pivotal Phase 3 program for eravacycline for the treatment of complicated intra-abdominal infections, or cIAI, and complicated urinary tract infections, or cUTI, including the submission of a new drug application for eravacycline, and for working capital and other general corporate purposes.

The expected use of net proceeds from this offering represents our intentions based upon our current plans and business conditions. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the status of and results from clinical trials of eravacycline and whether regulatory authorities require us to perform additional clinical trials of eravacycline in order to obtain marketing approvals. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering. We may find it necessary or advisable to use the net proceeds from this offering for other purposes, and we will have broad discretion in the application of net proceeds.

We believe that our available funds following this offering will be sufficient to enable us to obtain top-line data from our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and our planned Phase 3 clinical trial of eravacycline for the treatment of cUTI and to submit a new drug application to the Food and Drug Administration for eravacycline. We expect that these funds will not, however, be sufficient to enable us to commercially launch eravacycline. It is also possible that we will not achieve the progress that we expect with respect to eravacycline because the actual costs and timing of clinical development activities are difficult to predict and are subject to substantial risks and delays. We have no external sources of funds other than our subcontracts with, and subaward from, CUBRC under awards from BARDA and NIAID. We expect that we will need to obtain additional funding in order to commercialize eravacycline.

To the extent that we raise additional capital through the sale of common stock, convertible securities or other equity securities, the ownership interests of our existing stockholders may be materially diluted and the terms of these securities could include liquidation or other preferences that could adversely affect the rights of our existing stockholders. Debt financing, if available, would result in increased fixed payment obligations and may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, that could adversely impact our ability to conduct our business. If we are unable to raise capital when needed or on attractive terms, we could be forced to significantly delay, scale back or discontinue the development or commercialization of eravacycline or other product candidates, seek collaborators at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available, and relinquish or license, potentially on unfavorable terms, our rights to eravacycline or other product candidates that we otherwise would seek to develop or commercialize ourselves.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing instruments and U.S. government securities.

47

Table of Contents

PRICE RANGE OF COMMON STOCK

Our common stock has been listed on The NASDAQ Global Market under the symbol TTPH since March 20, 2013. Prior to that date, there was no public market for our common stock. The following table sets forth, for the periods indicated, the high and low intraday sales prices of our common stock as reported by The NASDAQ Global Market:

	High	Low
First Quarter 2013 (beginning March 20, 2013)	$ 7.50	$ 6.62
Second Quarter 2013	$ 9.66	$ 7.00
Third Quarter 2013	$ 11.77	$ 7.04
Fourth Quarter 2013 (through November 6, 2013)	$ 13.55	$ 10.35

On November 6, 2013, the closing price of our common stock as reported on The NASDAQ Global Market was $11.31 per share. As of September 30, 2013, we had 36 holders of record of our common stock.

Table of Contents

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain earnings, if any, to finance the growth and development of our business. We do not expect to pay any cash dividends on our common stock in the foreseeable future. Payment of future dividends, if any, will be at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements, restrictions contained in current or future financing instruments, provisions of applicable law and other factors the board deems relevant. Our ability to pay dividends on our common stock is limited by the covenants of our debt facility with Silicon Valley Bank and Oxford Finance and may be further restricted by the terms of any of our future indebtedness. See Risk Factors Risks Relating to Our Financial Position and Need for Additional Capital 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 and Risk Factors Risks Relating to Our Common Stock and This Offering We do not anticipate paying any cash dividends on our capital stock in the foreseeable future, accordingly, stockholders must rely on capital appreciation, if any, for any return on their investment.

Table of Contents

CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of June 30, 2013 on:

- an actual basis and
- an adjusted basis giving effect to the sale of 4,500,000 shares of our common stock offered in this offering at the public offering price of $10.00 per share, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

You should read the following table in conjunction with our consolidated financial statements and related notes, Selected Consolidated Financial Data and Management s Discussion and Analysis of Financial Condition and Results of Operations appearing elsewhere in this prospectus.

	As of June 30, 2013	
	Actual	As Adjusted
	(Unaudited)	
	(In thousands, except share and per share data)	
Cash and cash equivalents	$ 77,216	$ 118,910
Term loan	$ 7,711	$ 7,711
Stockholders equity (deficit):		
Preferred stock, par value $0.001 per share: 5,000,000 shares authorized, no shares issued and outstanding, actual and as adjusted		
Common stock, par value $0.001 per share: 125,000,000 shares authorized, 20,671,935 shares issued and outstanding, actual; 125,000,000 shares authorized, 25,171,935 shares issued and outstanding, as adjusted	21	25
Additional paid-in capital	160,858	202,548
Deficit accumulated during the development stage	(98,302)	(98,302)
Total stockholders equity	62,577	104,271
Total capitalization	$ 70,288	$ 111,982

The table above does not include:

- 104,107 shares of common stock issuable upon the exercise of warrants outstanding as of June 30, 2013, at a weighted average exercise price of $7.68 per share;

2,686,888 shares of common stock issuable upon the exercise of stock options outstanding as of June 30, 2013, at a weighted average exercise price of $4.55 per share; and

696,102 shares of common stock available for future issuance under our equity compensation plans as of June 30, 2013.

Table of Contents

DILUTION

If you invest in our common stock, your interest will be diluted immediately to the extent of the difference between the public offering price per share you will pay in this offering and the as adjusted net tangible book value per share of our common stock after this offering. Our historical net tangible book value as of June 30, 2013 was $62.6 million, or $3.03 per share of common stock. Our net tangible book value per share set forth below represents our total tangible assets less total liabilities, divided by the number of shares of our common stock outstanding on June 30, 2013.

After giving effect to our issuance and sale of 4,500,000 shares of common stock in this offering at the public offering price of $10.00 per share, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, the as adjusted net tangible book value as of June 30, 2013 would have been $104.3 million, or $4.14 per share. This represents an immediate increase in net tangible book value to existing stockholders of $1.11 per share. The public offering price per share significantly exceeds the as adjusted net tangible book value per share. Accordingly, new investors who purchase shares of common stock in this offering will suffer an immediate dilution of their investment of $5.86 per share. The following table illustrates this per share dilution to the new investors purchasing shares of common stock in this offering without giving effect to the option to purchase additional shares granted to the underwriters:

Public offering price per share		$ 10.00
Net tangible book value per share as of June 30, 2013	$ 3.03	
Increase per share attributable to sale of shares of common stock in this offering	1.11	
As adjusted net tangible book value per share after this offering		$ 4.14
Dilution per share to new investors		$ 5.86

If the underwriters exercise their option to purchase additional shares in full, the as adjusted net tangible book value will increase to $4.28 per share, representing an immediate increase to existing stockholders of $1.25 per share and an immediate dilution of $5.72 per share to new investors. If any shares are issued upon exercise of outstanding options or warrants at prices below the assumed public offering price, you will experience further dilution.

Table of Contents

SELECTED CONSOLIDATED FINANCIAL DATA

The following selected consolidated financial data should be read together with our consolidated financial statements and accompanying notes and Management s Discussion and Analysis of Financial Condition and Results of Operations appearing elsewhere in this prospectus. The selected consolidated financial data in this section are not intended to replace our financial statements and the related notes. Our historical results are not necessarily indicative of the results that may be expected in the future.

The selected consolidated statement of operations data for the years ended December 31, 2011 and 2012 and the selected consolidated balance sheet data as of December 31, 2011 and 2012 are derived from our audited consolidated financial statements appearing elsewhere in this prospectus. The statement of operations data for the six months ended June 30, 2012 and 2013 and the period from July 7, 2006 (inception) to June 30, 2013 and the balance sheet data as of June 30, 2013 have been derived from our unaudited financial statements appearing elsewhere in this prospectus.

	Years Ended December 31,		Six Months Ended June 30,		The Period from July 7, 2006 (inception) to June 30, 2013
	2011	2012	2012	2013	(Unaudited)
			(Unaudited)		
	(In thousands except per share data)				
Statement of Operations Data:					
Contract and grant revenue:	$ 185	$ 7,600	$ 1,823	$ 6,422	$ 14,207
Operating expenses:					
Research and development	17,737	17,294	8,262	11,022	86,129
General and administrative	3,874	4,309	1,963	2,981	20,284
Total operating expenses	21,611	21,603	10,225	14,003	106,413
Loss from operations	(21,426)	(14,003)	(8,402)	(7,581)	(92,206)
Other income (expense):					
Interest income	1			2	610
Interest expense	(161)	(1,021)	(450)	(901)	(2,339)
Other income (expense)	22	(63)	(105)	263	(4,367)
Total other income (expense)	(138)	(1,084)	(555)	(636)	(6,096)
Net loss	$ (21,564)	$ (15,087)	$ (8,957)	$ (8,217)	$ (98,302)
Net loss per share applicable to common stockholders-basic and diluted (1)	$ (73.34)	$ (47.54)	$ (28.60)	$ (0.73)	$ (96.85)
Weighted-average number of common shares used in net loss per share applicable to common stockholders-basic and diluted	294	317	313	11,263	1,015

Comprehensive loss	$ (21,564)	$ (15,087)	$ (8,957)	$ (8,217)	$ (98,302)

	As of June 30, 2013 (Unaudited, in thousands)
Balance Sheet Data:	
Cash and cash equivalents	$ 77,216
Working capital	70,043
Total assets	81,168
Current liabilities	10,880
Long-term obligations	7,711
Total stockholders equity	62,577

(1) See Note 2 within the notes to our audited and unaudited consolidated financial statements appearing elsewhere in this prospectus for a description of the method used to calculate basic and diluted net loss per share applicable to common stockholders.

Table of Contents

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 consolidated financial statements and related notes appearing in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the Risk Factors section of this prospectus, 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 clinical stage biopharmaceutical company using our proprietary chemistry technology to create novel antibiotics for serious and life-threatening multi-drug resistant infections. Our lead product candidate, eravacycline, is a fully synthetic tetracycline derivative that we are developing as a broad-spectrum intravenous and oral antibiotic for use as a first-line empiric monotherapy for the treatment of multi-drug resistant infections, including multi-drug resistant Gram-negative infections. We are conducting a Phase 3 clinical trial of eravacycline with intravenous administration for the treatment of complicated intra-abdominal infections, or cIAI, and are planning to initiate a second Phase 3 clinical trial of eravacycline for the treatment of complicated urinary tract infections, or cUTI, with intravenous-to-oral step-down therapy by the end of 2013. We expect to have top-line data from the Phase 3 cIAI clinical trial in the first quarter of 2015, data from a lead-in portion of the Phase 3 cUTI clinical trial in mid-2014 and top-line data from the Phase 3 cUTI clinical trial in the first half of 2015. Consistent with draft guidance issued by the United States Food and Drug Administration, or FDA, with respect to the development of antibiotics for cIAI and our discussions with the FDA, we expect that positive results from these two Phase 3 clinical trials would be sufficient to support submission of a new drug application, or NDA, for eravacycline in the treatment of cIAI and cUTI. Subject to obtaining additional financing beyond this offering, we intend to pursue development of eravacycline for the treatment of additional indications, including hospital-acquired bacterial pneumonias and other serious and life-threatening infections following our development of eravacycline for the treatment of cIAI and cUTI. We are also pursuing the discovery and development of additional antibiotics to target unmet medical needs.

We commenced business operations in July 2006. Our operations to date have been limited to organizing and staffing our company, business planning, raising capital, acquiring and developing our proprietary chemistry technology, identifying potential product candidates and undertaking preclinical studies and clinical trials of our product candidates. To date, we have not generated any product revenue and have primarily financed our operations through the public offering and private placement of our equity securities, debt financings and revenue from U.S. government awards. As of June 30, 2013, we had received an aggregate of $171.8 million in net proceeds from the issuance of equity securities and borrowings under debt facilities and an aggregate of $11.3 million from government grants and contracts. As of June 30, 2013, our principal source of liquidity was cash and cash equivalents, which totaled $77.2 million.

As of June 30, 2013, we had a deficit accumulated during the development stage of $98.3 million. Our net losses were $21.6 million and $15.1 million for the years ended December 31, 2011 and 2012, respectively, and $9.0 million and $8.2 million for the six months ended June 30, 2012 and 2013, respectively. We expect that our expenses will increase substantially as we continue our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and commence our planned Phase 3 clinical trial of eravacycline for the treatment of patients with cUTI, seek marketing approval for eravacycline, pursue development of eravacycline for additional indications, including hospital-acquired bacterial

pneumonias and other serious and life-threatening infections, advance our other product candidates and satisfy our obligations under our license agreement with Harvard University. If we obtain marketing approval of eravacycline, we also expect to incur significant sales, marketing, distribution and outsourced manufacturing expenses. Furthermore, we expect to incur ongoing research and

Table of Contents

development expenses relating to our product candidates other than eravacycline and that our general and administrative costs will increase as we grow and continue to operate as a public company. We will need to generate significant revenue to achieve profitability, and we may never do so.

We believe that our available funds following this offering will be sufficient to enable us to obtain top-line data from our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and our planned Phase 3 clinical trial of eravacycline for the treatment of cUTI and to submit an NDA to FDA for eravacycline. We expect that these funds will not, however, be sufficient to enable us to commercially launch eravacycline. It is also possible that we will not achieve the progress that we expect with respect to eravacycline because the actual costs and timing of clinical development activities are difficult to predict and are subject to substantial risks and delays. We will be required to obtain further funding through public or private equity offerings, debt financings, collaborations and licensing arrangements or other sources. Adequate additional financing may not be available to us on acceptable terms, or at all. Our failure to raise capital as and when needed would have a negative impact on our financial condition and our ability to pursue our business strategy.

Financial overview

Contract and Grant Revenue

We have derived all of our revenue to date from funding provided under three U.S. government awards for the development of our compounds as potential counter measures for the treatment of disease caused by bacterial biothreat pathogens through our collaborator CUBRC Inc., or CUBRC, an independent, not-for-profit, research corporation that specializes in U.S. government-based contracts:

- We have received funding for our lead product candidate, eravacycline, under an award from the Biomedical Advanced Research and Development Authority, or BARDA, an agency of the U.S. Department of Health and Human Services. In January 2012, BARDA awarded CUBRC a five-year contract that provides for up to a total of $67.0 million in funding for the development, manufacturing and clinical evaluation of eravacycline for the treatment of disease caused by bacterial biothreat pathogens. We refer to this contract as the BARDA Contract.

- We have received funding for our preclinical compound TP-271 under two awards from the National Institute of Allergy and Infectious Diseases, or NIAID, a division of National Institutes of Health, for the development, manufacturing and clinical evaluation of TP-271 for respiratory diseases caused by biothreat and antibiotic-resistant public health pathogens, as well as bacterial pathogens associated with community-acquired bacterial pneumonia:

  - a grant awarded to CUBRC in July 2011 that provides up to a total of approximately $2.8 million over five years, which we refer to as the NIAID Grant, and

  - a contract awarded to CUBRC in September 2011 that provides up to a total of approximately $35.8 million in funding over five years, which we refer to as the NIAID Contract.

We are collaborating with CUBRC because when we initially determined to seek government funding we recognized that we did not have any expertise in bidding for, or the administration and management of, government-funded contracts. CUBRC serves as the prime contractor under the BARDA Contract, the NIAID Grant and the NIAID Contract, primarily carrying out a program management and administrative role with additional responsibility for the management of preclinical studies. We serve as lead technical expert on all aspects of these awards and also serve as a subcontractor responsible for management of chemistry, manufacturing and control activities and clinical studies. We derive all of our revenue under these collaborations through subcontracts with, and a subaward from, CUBRC, with the flow of funds following the respective activities being conducted by us and by CUBRC.

In connection with the BARDA Contract, in February 2012, we entered into a five-year cost-plus-fixed-fee subcontract with CUBRC under which we may receive funding of up to approximately $39.8 million, reflecting the portion of the BARDA Contract funding that may be paid to us for our activities.

Table of Contents

In connection with the NIAID Contract, in October 2011, we entered into a five-year cost-plus-fixed-fee subcontract with CUBRC under which we may receive funding of up to approximately $13.3 million, reflecting the portion of the NIAID Contract funding that may be paid to us for our activities.

In connection with the NIAID Grant, in November 2011, CUBRC awarded us a 55-month, no-fee subaward of approximately $980,000, reflecting the portion of the NIAID Grant funding that may be paid to us for our activities.

Although the BARDA Contract, and our subcontract with CUBRC under the BARDA Contract, have five-year terms, BARDA is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond current-year amounts from Congressionally approved annual appropriations. To the extent that BARDA ceases to provide funding of the program to CUBRC, CUBRC has the right to cease providing funding to us. Committed funding from CUBRC under our BARDA subcontract is $15.6 million from the initial contract date through April 30, 2015, of which $7.5 million had been received through June 30, 2013.

Similarly, although the NIAID Contract and our subcontract with CUBRC under the NIAID Contract, have five-year terms, NIAID is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond September 30, 2016. To the extent NIAID ceases to provide funding of the programs to CUBRC, CUBRC has the right to cease providing funding to us. Committed funding from CUBRC under our subcontract with respect to the NIAID Contract is $7.5 million, of which $3.4 million had been received through June 30, 2013. In addition, although the NIAID Grant has a term of five years and our subaward from CUBRC has a term of 55 months, NIAID is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond May 31, 2016. To the extent NIAID ceases to provide funding of the programs to CUBRC, CUBRC has the right to cease providing funding to us. Committed funding from CUBRC under our subaward with respect to the NIAID Grant is $0.7 million from the initial grant date through May 31, 2016, of which $0.4 million had been received through June 30, 2013.

We have no products approved for sale. Other than the government funding described above, we do not expect to receive any revenue from any product candidates that we develop, including eravacycline, until we obtain regulatory approval and commercialize such products, which we do not expect will occur before 2016, or until we potentially enter into collaborative agreements with third parties for the development and commercialization of such product candidates. We continue to pursue government funding for other preclinical and clinical programs. If our development efforts for any of our product candidates result in clinical success and regulatory approval, or collaboration agreements with third parties, we may generate revenue from those product candidates.

We expect that our revenue will be less than our expenses for the foreseeable future and that we will experience increasing losses as we continue our development of, and seek regulatory approvals for, our product candidates, and begin to commercialize any approved products. Even if we are able to generate revenue from the sale of one or more products, we may not become profitable.

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for the research and development of our preclinical and clinical candidates, which include:

employee-related expenses, including salaries, benefits and stock-based compensation expense;

expenses incurred under agreements with contract research organizations, or CROs, contract manufacturing organizations, or CMOs, and consultants that conduct our clinical trials and preclinical activities;

payments made under our license agreement with Harvard University;

Table of Contents

the cost of acquiring, developing and manufacturing clinical trial materials and lab supplies; and

facility, depreciation and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, insurance and other supplies.

We expense research and development costs to operations as incurred. We recognize costs for certain development activities, such as clinical trials, based on an evaluation of the progress to completion of specific tasks using data such as patient enrollment, clinical site activations or information provided to us by our vendors.

The following table identifies research and development expenses on a program-specific basis for our product candidates for the years ended December 31, 2011 and 2012, the six months ended June 30, 2012 and 2013 and the period from July 7, 2006 (inception) to June 30, 2013. Expenses related to facilities, consulting, travel, conferences, stock-based compensation and depreciation are not allocated to a program and are separately classified as other research and development expenses in the table below.

	Years Ended December 31,		Six Month Ended June 30,		The Period from July 7, 2006 (inception) to June 30, 2013
	2011	2012	2012	2013	
			(in thousands)		
Eravacycline	$ 9,007	$ 6,932	$ 4,411	$ 3,781	$ 34,506
BARDA Contract		4,279	626	4,721	9,000
NIAID Contract and NIAID Grant	174	2,537	794	1,391	4,101
Other development programs	5,016	1,071	646	394	20,842
Other research and development	3,540	2,475	1,785	735	17,680
Total research and development	$ 17,737	$ 17,294	$ 8,262	$ 11,022	$ 86,129

Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials.

As of June 30, 2013, we had incurred an aggregate of $34.5 million in research and development expenses related to the development of eravacycline. We expect that our research and development expenses will increase substantially as we continue our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and commence our planned Phase 3 clinical trial of eravacycline for the treatment of patients with cUTI, pursue development of eravacycline for additional indications, including hospital-acquired bacterial pneumonias and other serious and life-threatening infections, advance our other product candidates and satisfy our obligations under our license agreement with Harvard University. We expect that the total external costs of our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and our planned Phase 3 clinical trial of eravacycline for the treatment of cUTI will be approximately $55.0 million, including approximately $15.0 million in 2013, of which $2.1 million had been incurred during the first six months of 2013.

Because of the numerous risks and uncertainties associated with product development, however, we cannot determine with certainty the duration and completion costs of these or other current or future clinical trials of eravacycline or our other product candidates. We may never succeed in achieving regulatory approval for eravacycline or any of our other product candidates. The duration, costs and timing of clinical trials and development of our product candidates will depend on a variety of factors, including the uncertainties of future clinical and preclinical studies, uncertainties in clinical trial enrollment rate and significant and changing government regulation. In addition, the probability of success for each product candidate will depend on numerous factors, including competition, manufacturing capability and commercial viability.

We have licensed our proprietary chemistry technology from Harvard University on an exclusive worldwide basis under a license agreement that we entered into in August 2006. Under our license agreement, we have paid

Table of Contents

Harvard an aggregate of $3.7 million in upfront license fees and development milestone payments, including a $2.0 million milestone fee that we paid in October 2013 in connection with the dosing of the first patient in our Phase 3 clinical trial of eravacycline for the treatment of patients with cIAI. We have also issued 31,379 shares of our common stock to Harvard under the license agreement. In addition, we have agreed to make payments to Harvard upon the achievement of specified future development and regulatory milestones totaling up to $15.1 million per licensed product ($3.1 million of which has already been paid with respect to eravacycline), and to pay tiered royalties in the single digits based on annual worldwide net sales, if any, of licensed products by us, our affiliates and our sublicensees. We are also obligated to pay Harvard a specified share of non-royalty sublicensing revenues that we receive from sublicensees for the grant of sublicenses under the license and to reimburse Harvard for specified patent prosecution and maintenance costs. The next milestone payment that would come due under the license agreement with respect to eravacycline is a $3.0 million payment that would become due to Harvard if we obtained marketing authorization from the FDA for eravacycline.

General and Administrative Expenses

General and administrative expenses consist principally of salaries and related costs such as stock-based compensation and travel expenses for personnel in executive, finance, business development and human resource functions. Other general and administrative expenses include facility costs not otherwise included in research and development expenses, patent filing fees and professional fees for legal, consulting, auditing and tax services.

We anticipate that our general and administrative expenses will increase for the following reasons, among others:

- support of the anticipated expansion of our research and development activities as we continue the development of our product candidates;
- increases in payroll, expansion of infrastructure and higher consulting, legal, accounting and investor relations costs, and directors and officers insurance premiums, all associated with operating as a public company; and
- if and when we believe a regulatory approval of our first product candidate appears likely, anticipated increases in our payroll and expense as a result of our preparation for commercial operations, especially as it relates to the sales and marketing of our product candidates.

Interest Income

Interest income consists of interest earned on our cash and cash equivalents. The primary objective of our investment policy is capital preservation.

Interest Expense

Interest expense consists primarily of interest accrued on our outstanding indebtedness and non-cash interest related to the amortization of debt discount costs associated with our term loan facility with Silicon Valley Bank and Oxford Finance. We expect that our interest expense will increase in future periods in connection with additional indebtedness of $6.2 million that we borrowed in December 2012 under an amendment to our loan and security agreement with Silicon Valley Bank and Oxford Finance and an additional $3.0 million of indebtedness we borrowed in February

2013 under this debt facility.

Other Income (Expense)

Other income (expense) consists of fair value adjustments on warrants for the purchase of our preferred stock, which was recorded during the three months ended March 31, 2013. We do not anticipate that we will recognize any further amounts with respect to these fair value adjustments as a result of the conversion of all outstanding warrants to purchase our preferred stock into warrants to purchase our common stock in connection with the completion of our initial public offering, or IPO.

Table of Contents

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 financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities and expenses and the disclosure of contingent assets and liabilities in our financial statements. On an ongoing basis, we evaluate our estimates and judgments, including those related to revenue recognition, accrued expenses and stock-based compensation. We base our estimates on historical experience, known trends and events and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values 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 described in more detail in the notes to our consolidated financial statements appearing elsewhere in this prospectus, we believe the following accounting policies to be most critical to the judgments and estimates used in the preparation of our financial statements.

Revenue Recognition

We have derived all of our revenue to date from our subcontracts with CUBRC under the BARDA Contract and the NIAID Contract and our subaward under the NIAID Grant. We recognize revenue under these best-efforts, cost-reimbursable and cost-plus-fixed-fee subcontracts and subaward as we perform services under the subcontracts and subaward so long as a subcontract and subaward has been executed and the fees for these services are fixed or determinable, legally billable and reasonably assured of collection. Recognized amounts reflect our partial performance under the subcontracts and subaward and equal direct and indirect costs incurred plus fixed fees, where applicable. We do not recognize revenue under these arrangements for amounts related to contract periods where funding is not yet committed as amounts above committed funding thresholds would not be considered fixed or determinable or reasonably assured of collection. Revenues and expenses under these arrangements are presented gross on our statements of operations and comprehensive loss as we have determined we are the primary obligor under these arrangements relative to the research and development services we perform as lead technical expert.

Revenue under our subcontracts under both the NIAID Contract and the BARDA Contract are earned under a cost-plus-fixed-fee arrangement in which we are reimbursed for direct costs incurred plus allowable indirect costs and a fixed-fee earned. Billings under these contracts are based on approved provisional indirect billing rates, which permit recovery of fringe benefits, allowable overhead and general and administrative expenses and a fixed fee.

Revenue under our subaward under the NIAID Grant is earned under a cost-reimbursable arrangement in which we are reimbursed for direct costs incurred plus allowable indirect costs. Billings under the NIAID Grant are based on approved provisional indirect billing rates, which permit recovery of fringe benefits and allowable general and administrative expenses.

Accrued Research and Development Expenses

As part of the process of preparing our financial statements, we are required to estimate our accrued expenses. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed for us 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. The majority of our service providers invoice us monthly in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date in our financial statements based on facts and

circumstances known to us at that time. We periodically confirm the

Table of Contents

accuracy of our estimates with the service providers and make adjustments if necessary. Examples of estimated accrued research and development expenses include fees paid to:

- CROs in connection with clinical trials;
- CMOs with respect to clinical materials and intermediaries;
- vendors in connection with preclinical development activities; and
- vendors related to manufacturing, development and distribution of clinical supplies.

We base our expenses related to clinical studies on our estimates of the services received and efforts expended pursuant to contracts with multiple CROs that conduct and manage clinical studies 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 clinical expense. Payments under some of these contracts depend on factors such as the successful enrollment of subjects and the completion of clinical trial milestones. In accruing service fees, we estimate the time period over which services will be performed, enrollment of subjects, number of sites activated 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 accordingly. 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 differs from the actual status and timing of services performed we may report amounts that are too high or too low in any particular period. To date, there have been no material differences from our estimates to the amount actually incurred.

Stock-Based Compensation

Since our inception in July 2006, we have applied the fair value recognition provisions of Financial Accounting Standards Board Accounting Standards Codification Topic 718, *Compensation-Stock Compensation*, which we refer to as ASC 718, to account for all stock-based compensation. We recognize compensation costs related to stock options granted to employees based on the estimated fair value of the awards on the date of grant. Stock compensation related to non-employee awards is remeasured at each reporting period until the awards are vested. Described below is the methodology we have utilized in measuring stock-based compensation expense.

Determining the amount of stock-based compensation to be recorded requires us to develop estimates of the fair value of stock-based awards as of their grant date. We recognize stock-based compensation expense ratably over the requisite service period, which in most cases is the vesting period of the award. Calculating the fair value of stock-based awards requires that we make highly subjective assumptions. We use the Black-Scholes option pricing model to value our stock option awards. Use of this valuation methodology requires that we make assumptions as to the volatility of our common stock, the fair value of our common stock on the grant date, the expected term of our stock options, the risk free interest rate for a period that approximates the expected term of our stock options and our expected dividend yield. Because there had been no public market for our common stock prior to our IPO, we believe that we have insufficient data from our limited public trading history to appropriately utilize company-specific historical and implied volatility information. Accordingly, we utilize data from a representative group of publicly

traded companies to estimate expected stock price volatility. We selected representative companies from the biopharmaceutical industry with similar characteristics as us, including stage of product development and therapeutic focus. We use the simplified method as prescribed by the Securities and Exchange Commission Staff Accounting Bulletin No. 107, *Share-Based Payment* as we do not have sufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term of stock options granted to employees. For non-employee grants, we use an expected term equal to the remaining contractual term of the award. We utilize a dividend yield of zero based on the fact that we have never paid cash dividends and have no current intention of paying cash dividends. The risk-free interest rate used for each grant is based on the U.S. Treasury yield curve in effect at the time of grant for instruments with a similar expected life.

Under ASC 718, we are required to estimate the level of forfeitures expected to occur and record stock-based compensation expense only for those awards that we ultimately expect will vest. During the years ended

Table of Contents

December 31, 2011 and 2012, our estimated annual forfeiture rate was 0% and 3%, respectively. During the six months ended June 30, 2012 and 2013, our estimated forfeiture rate was 3% and 2%, respectively.

Stock-based compensation expense includes options granted to employees and non-employees and has been reported in our statements of operations and comprehensive loss as follows:

	Year Ended December 31,		Six Months Ended June 30,		The Period from July 7, 2006 (inception) to June 30,
	2011	2012	2012	2013	2013
			(in thousands)		
Research and development	$ 175	$ 463	$ 160	$ 152	$ 1,148
General and administrative	137	149	62	183	733
Total	$ 312	$ 612	$ 222	$ 335	$ 1,881

We estimated the fair value of stock options at the grant date using the following assumptions:

	Years Ended December 31,	
	2011	2012
Weighted average expected volatility	64%	67%
Expected life (in years)	6.0-6.1	6.0-6.1
Risk free interest rate	1.21%-2.41%	0.85%-1.21%
Expected dividend yield	0%	0%

	Six Months Ended June 30,	
	2012	2013
Weighted average expected volatility	68%	58%
Expected life (in years)	6.0-6.1	5.8-6.1
Risk free interest rate	0.92%-1.21%	0.91%-1.30%
Expected dividend yield	0%	0%

The following table presents the grant dates and related exercise or purchase prices of stock options that we granted from January 1, 2012 through the date we became a public company, along with the corresponding exercise price for each option grant and the fair value per share utilized to calculate stock-based compensation expense:

Date of Grant	Number of shares underlying options granted	Exercise price per share	Common stock fair value per share on grant date
1/20/2012	24,786	$ 2.03	$ 2.03

1/26/2012	11,206	$	2.03	$	2.03
6/6/2012	170,676	$	2.03	$	3.77
11/19/2012	5,171	$	5.22	$	5.22

At September 30, 2013, options to purchase 2,866,985 shares of our common stock were outstanding. The aggregate intrinsic value of these options was $14,587,204 based on the public offering price of $10.00 per share.

For grants made prior to the consummation of our IPO in March 2013, the estimated fair value per share of common stock in the table above represents the determination by our board of directors of the fair value of our common stock as of the date of grant, taking into consideration various objective and subjective factors, including the conclusions of contemporaneous valuations of our common stock, as discussed below. For grants

Table of Contents

made following the consummation of our IPO, our board of directors determined that the fair value per share of our common stock on the date of grant, as reflected in the table above, is equal to the closing price of our common stock on The NASDAQ Global Market on the date of grant.

Prior to our IPO, due to the absence of an active market for our common stock, the fair value of our common stock was determined in good faith by our board of directors, with the assistance and upon the recommendations of management, based on objective and subjective factors consistent with the methodologies outlined in the American Institute of Certified Public Accountants Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, referred to as the AICPA Practice Aid, including:

- the shares of common stock were illiquid securities in a private company;
- the prices of shares of our preferred stock that we had sold to outside investors in arm s length transactions, and the rights, preferences and privileges of that preferred stock relative to our common stock;
- our results of operations, financial position and the status of our research and development efforts, including the status of clinical trials for our product candidates under development;
- the material risks related to our business;
- our business strategy;
- our achievement of key milestones, including the results of clinical trials;
- the market performance of publicly traded companies in the life sciences and biotechnology sectors, and recently completed mergers and acquisitions of companies comparable to us;
- the likelihood of achieving a liquidity event for the holders of our common stock, such as, sale of the company or an initial public offering given prevailing market conditions;
- external market conditions affecting the life sciences and biotechnology industry sectors; and
- contemporaneous and retrospective valuations of our common stock.

Valuation of Common Stock as of October 14, 2011

In October 2011, we conducted a contemporaneous valuation of our common stock as of October 14, 2011. In conducting this valuation, we used the market approach as described in the AICPA Practice Aid. We estimated the

value of our common stock based on the estimated market capitalization of guideline public companies that were selected based on their disease focus, stage of clinical trials, number of compounds in clinical trials and number of years since incorporation. We estimated the market capitalization of these companies based on factors including the amounts of paid-in capital and cash held by each company. We allocated this equity value among the outstanding shares of our preferred and common stock using the option-pricing method, or OPM. For our OPM analysis, we assumed a time to liquidity of 1.27 years and an annual volatility rate of 49% based on historical trading for the guideline public companies considered. We applied a discount for lack of marketability of 15% to our common stock. Based on these factors, we concluded that our common stock had a fair value of $2.03 per share as of October 14, 2011.

Stock Option Grants Made January 20, 2012 and January 26, 2012

Our board of directors granted options on January 20, 2012 and January 26, 2012, with each option having an exercise price of $2.03 per share. In establishing this exercise price, our board of directors considered input from management, including the valuation we conducted of our common stock as of October 14, 2011, as well as the objective and subjective factors outlined above.

Table of Contents

In addition, on each of January 20, 2012 and January 26, 2012, our board of directors considered the decline in our financial position and significant cash burn since our Series C preferred stock financing, our projected financial results for 2012 as well as the events and circumstances that occurred between October 14, 2011 and such date that our board of directors considered most likely to affect the value of our common stock, including the following:

- the addition of a newly elected independent chairman of our board of directors;
- the initiation and progress of our Phase 2 clinical trial of the intravenous formulation of eravacycline;
- our borrowing of $6.5 million under our debt facility with Silicon Valley Bank and Oxford Finance in December 2011; and
- the market performance of publicly traded companies in the life sciences and biotechnology industry sectors comparable to us.

On each of January 20, 2012 and January 26, 2012, our board of directors determined that these events and circumstances were not indicative of a significant change in fair value of our common stock since October 14, 2011.

Based on these factors, our board of directors determined that the fair value of our common stock at January 20, 2012 and January 26, 2012 was $2.03 per share.

Stock Option Grants Made June 6, 2012

Our board of directors granted options on June 6, 2012, with each option having an exercise price of $2.03 per share. In establishing this exercise price, our board of directors considered input from management, including the valuation we conducted of our common stock as of October 14, 2011, and the status of our ongoing Phase 2 clinical trial of the intravenous formulation of eravacycline. At June 6, 2012, all patient data remained blinded.

Retrospective Valuation of Common Stock as of June 6, 2012

In September 2012, we decided to pursue an IPO, in addition to exploring other strategic alternatives. As a result, in connection with the preparation of our consolidated financial statements for the nine-month period ended September 30, 2012 and in preparing for our proposed IPO, we reexamined for financial reporting purposes only the fair value of our common stock during 2012. In connection with that reexamination, we prepared a retrospective valuation of the fair value of our common stock for financial reporting purposes as of June 6, 2012 to assist our board of directors in re-evaluating the fair value of our common stock as of that date. We determined that a retrospective valuation of the fair value of our common stock as of June 6, 2012 was necessary due to acceleration of the timeframe to a liquidity event, including our potential IPO, since October 14, 2011, the date of our last contemporaneous valuation.

In reassessing the fair value of our common stock, our board of directors considered the events and circumstances that occurred since January 26, 2012 that were most likely to affect the value of our common stock, including the following:

our entry in February 2012 into a subcontract with CUBRC under the BARDA Contract;

the progress of our Phase 2 clinical trial of the intravenous formulation of eravacycline;

the Data Safety Monitoring Board concluding in April 2012 that the trial could continue; and

the market performance of publicly traded companies in the life sciences and biotechnology industry sectors comparable to us.

For the retrospective valuation, we used the market approach to estimate the aggregate future equity value of our company under an IPO scenario, high and low case sale scenarios and a remain private scenario, as described below.

Table of Contents

For the IPO scenario, we used the Guideline Public Company Method as described in the AICPA Practice Aid. Under this method, we identified recent IPOs for similar biotechnology companies from 2010, 2011 and 2012, which we refer to as guideline companies, that were either focused on the development of anti-infective compounds or were developing a Phase 3 clinical trial drug candidate. We used the average of (1) the median of the guideline companies IPO pre-money valuations and (2) the valuation for our company implied by applying to our Series C post-money valuation the median step-up in value for the guidelines companies from the post-money valuations for their last preferred financings to their IPO pre-money valuations.

For the sale scenarios, we analyzed sale transactions of similar biotechnology companies that were focused on the development of anti-infective compounds and assumed for financial reporting purposes a sale in March 2013. We also analyzed published transaction values of companies with product candidates in similar stages of development as we estimated our lead product candidate, eravacycline, would be in March 2013.

For the remain private scenario, we estimated equity value using the Guideline Public Company Method and took into consideration twelve publicly traded companies that we considered comparable to ours.

In order to determine a valuation of our common stock based on the equity values determined under the IPO scenario, the two sale scenarios and the remain private scenario, we used the Probability Weighted Expected Return Method, or the PWERM, described in the AICPA Practice Aid. Under this method, we estimated the value of our common stock based on the probability-weighted present value of expected future investment returns considering each of these possible outcomes and the rights of each class and series of our equity. Three of the scenarios assumed a stockholder exit, either through an IPO or a sale of our company. The fourth scenario assumed we remained a private company. For the IPO and sale scenarios, we calculated the estimated values of our common stock using assumptions as to pre-money or sale valuations determined with respect to those scenarios as described above, and dates of those scenarios, and an appropriate risk-adjusted discount rate. Finally, we calculated a present value for our common stock based on our estimate of the relative likelihood of occurrence of each scenario. We assigned a 20% weighting to the IPO scenario, 50% weighting to the sale scenarios, split evenly between the high and low case scenarios, and 30% weighting to the remaining private scenario. We believed these weightings were appropriate because at the time of the retrospective valuation, we believed that there was the possibility of several liquidity events: the IPO scenario and sale scenarios. We believed it appropriate to include these potential scenarios when estimating the value of our common stock as this was a retrospective valuation that was performed at the time of our preparation for our IPO.

The following table summarizes the significant assumptions for each of the valuation scenarios used in the PWERM analysis to determine the retrospectively reassessed fair value of our common stock as of June 6, 2012.

June 6, 2012 Retrospective Valuation	IPO	Sale High Case	Sale Low Case	Remain Private
Key Assumptions				
Probability weighting	20%	25%	25%	30%
Liquidity date	2/28/13	3/31/13	3/31/13	
WACC	13.7%	13.7%	13.7%	N/A
Volatility				53%
Discount for lack of marketability	15%	15%	15%	15%

Based on the qualitative factors described above and the results of our retrospective valuation analysis, we determined that the retrospectively reassessed fair value of our common stock for financial reporting purposes at June 6, 2012 was $3.77 per share. The stock-based compensation expense with respect to the June 6, 2012 option grants reported in our statements of operations and comprehensive loss for the year ended December 31, 2012 reflects the retrospectively reassessed fair value.

Table of Contents

Valuation of Common Stock as of October 14, 2012

As a result of the favorable results from the Phase 2 study we decided to pursue an IPO and explore other strategic alternatives and performed a contemporaneous valuation of our common stock as of October 14, 2012.

For the valuation, we used the market approach to estimate the aggregate future equity value of our company under an IPO scenario, high and low case sale scenarios and a remain private scenario, as described below.

For the IPO scenario, we used the Guideline Public Company Method as described in the AICPA Practice Aid. Under this method, we identified recent IPOs for similar biotechnology companies from 2010, 2011 and 2012, which we refer to as guideline companies, that were either focused on the development of anti-infective compounds or were currently developing a Phase 3 clinical trial drug candidate. We used the average of (1) the median of the guideline companies IPO pre-money valuations and (2) the valuation for our company implied by applying to our Series C post-money valuation the median step-up in value for the guideline companies from the post-money valuations for their last preferred financings to their IPO pre-money valuations.

For the sale scenarios, we analyzed sale transactions of similar biotechnology companies that were focused on the development of anti-infective compounds and assumed for financial reporting purposes a sale in March 2013. We also analyzed published transaction values of companies with product candidates in similar stages of development as we estimated our lead product candidate, eravacycline, would be in March 2013.

For the remain private scenario, we estimated our equity value using the Guideline Public Company Method and took into consideration twelve publicly traded companies that we considered comparable to ours.

In order to determine a valuation of our common stock based on the enterprise values determined under the IPO scenario, the two sale scenarios and the remain private scenario, we used the PWERM. Under this method, we estimated the value of our common stock based on the probability-weighted present value of expected future investment returns considering each of these possible outcomes and the rights of each class and series of our equity. Three of the scenarios assumed a stockholder exit, either through an IPO or a sale of our company. The fourth scenario assumed we remained a private company. For the IPO and sale scenarios, we calculated the estimated values of our common stock using assumptions as to pre-money or sale valuations determined with respect to those scenarios as described above, and dates of those scenarios, and an appropriate risk-adjusted discount rate. Finally, we calculated a present value for our common stock based on our estimate of the relative likelihood of occurrence of each scenario. We assigned a 40% weighting to the IPO scenario, 50% weighting to the sale scenarios, split evenly between the high and low case scenarios, and 10% weighting to the remain private scenario and calculated an estimated fair value of our common stock as of October 14, 2012 of $5.22 per share.

The following table summarizes the significant assumptions for each of the valuation scenarios used in the PWERM analysis to determine the fair value of our common stock as of October 14, 2012.

October 14, 2012 Contemporaneous Valuation	IPO	Sale High Case	Sale Low Case	Remain Private

Key Assumptions				
Probability weighting	40%	25%	25%	10%
Liquidity date	2/28/13	3/31/13	3/31/13	
WACC	13.8%	13.8%	13.8%	N/A
Volatility				53%
Discount for lack of marketability	15%	15%	15%	15%

Table of Contents

Stock Option Grants Made November 19, 2012

Our board of directors granted options on November 19, 2012, with each option having an exercise price of $5.22 per share. In establishing this exercise price, our board of directors considered input from management, including the valuation we conducted of our common stock as of October 14, 2012, and the status of our efforts to pursue an IPO and explore other strategic alternatives.

Based on these factors, our board of directors determined that the fair value of our common stock at November 19, 2012 was $5.22 per share.

Valuation of Common Stock as of December 31, 2012

In January 2013, we conducted a contemporaneous valuation of our common stock as of December 31, 2012, as we continued to pursue an IPO and explore other strategic alternatives.

For the valuation, we used the market approach to estimate the aggregate future equity value of our company under an IPO scenario, high and low case sale scenarios and a remain private scenario, as described below.

For the IPO scenario, we used the Guideline Public Company Method as described in the AICPA Practice Aid. Under this method, we identified recent IPOs for similar biotechnology companies from 2010, 2011 and 2012, which we refer to as guideline companies, that were either focused on the development of anti-infective compounds or were currently developing a Phase 3 clinical trial drug candidate. We used the average of (1) the median of the guideline companies IPO pre-money valuations and (2) the valuation for our company implied by applying to our Series C post-money valuation the median step-up in value for the guideline companies from the post-money valuations for their last preferred financings to their IPO pre-money valuations.

For the sale scenarios, we analyzed sale transactions of similar biotechnology companies that were focused on the development of anti-infective compounds and assumed for financial reporting purposes a sale in April 2013. We also analyzed published transaction values of companies with product candidates in similar stages of development as we estimated our lead product candidate, eravacycline, would be in April 2013.

For the remain private scenario, we estimated our equity value using the Guideline Public Company Method and took into consideration twelve publicly traded companies that we considered comparable to ours.

In order to determine a valuation of our common stock based on the enterprise values determined under the IPO scenario, the two sale scenarios and the remain private scenario, we used the PWERM. Under this method, we estimated the value of our common stock based on the probability-weighted present value of expected future investment returns considering each of these possible outcomes and the rights of each class and series of our equity. Three of the scenarios assumed a stockholder exit, either through an IPO or a sale of our company. The fourth scenario assumed we remained a private company. For the IPO and sale scenarios, we calculated the estimated values of our common stock using assumptions as to pre-money or sale valuations determined with respect to those scenarios as described above, and dates of those scenarios, and an appropriate risk-adjusted discount rate. Finally, we calculated a present value for our common stock based on our estimate of the relative likelihood of occurrence of each scenario. We assigned a 60% weighting to the IPO scenario, 30% weighting to the sale scenarios, split evenly between the high

and low case scenarios, and 10% weighting to the remain private scenario and calculated an estimated fair value of our common stock as of December 31, 2012 of $8.99 per share.

Table of Contents

The following table summarizes the significant assumptions for each of the valuation scenarios used in the PWERM analysis to determine the fair value of our common stock as of December 31, 2012.

December 31, 2012 Contemporaneous Valuation	IPO	Sale High Case	Sale Low Case	Remain Private
Key Assumptions				
Probability weighting	60%	15%	15%	10%
Liquidity date	3/31/13	4/30/13	4/30/13	
WACC	14%	14%	14%	N/A
Volatility				45%
Discount for lack of marketability	10%	10%	10%	10%

Based on these factors, we concluded that our common stock had a fair value of $8.99 per share at December 31, 2012.

Since our IPO, the exercise price per share of all option grants has been set at the closing price of our common stock on The NASDAQ Global Market on the applicable date of grant, which our board of directors believes represents the fair value of our common stock.

Stock-based compensation expense related to awards granted to employees was $257,000 and $305,000 for the years ended December 31, 2011 and 2012, respectively, and $125,000 and $358,000 for the six months ended June 30, 2012 and 2013, respectively. As of June 30, 2013, we had approximately $5.6 million of total unrecognized stock-based compensation expense related to unvested stock options, expected to be recognized over a weighted-average period of 3.7 years. We expect that our stock-based compensation expense for stock options granted to employees will grow in future periods due to the potential increases in the value of our common stock and headcount.

During 2009, we granted options to non-employees to purchase 232,758 shares of common stock. These options vested with respect to one-third of the underlying shares on the date of grant, with the remaining shares vesting quarterly over four years from date of grant and have a life of ten years. During 2010, we granted options to non-employees to purchase 12,972 shares of common stock. These non-employee options vest quarterly through the fourth anniversary of the vesting date and have a contractual term of ten years. Stock options issued to non-employees are accounted for at fair value. We periodically revalue the options as they vest and recognize expense over the related service period. The total expense related to all non-employee options was $55,000 and $307,000 for the years ended December 31, 2011 and 2012, respectively, $97,000 and $(22,000) for the six months ended June 30, 2012 and 2013, respectively, and $559,000 for the period from July 7, 2006 (inception) through June 30, 2013.

Results of Operations

Comparison of the Six Months Ended June 30, 2012 and 2013

Contract and Grant Revenue

The following table summarizes our contract and grant revenue for the six months ended June 30, 2012 and 2013:

	Six Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)
	2012	2013		
	($ in thousands)			
Contract and grant revenue	$ 1,823	$ 6,422	$ 4,599	252%

Contract and grant revenue increased by $4.6 million from the six months ended June 30, 2012 to the six months ended June 30, 2013. This increase was primarily due to revenue associated with an increase in the

Table of Contents

activities under our subcontract with respect to the BARDA Contract, as well as an increase in activities under our subcontract with respect to the NIAID Contract and our subaward with respect to the NIAID Grant.

Research and Development Expenses

The following table summarizes our research and development expenses for the six months ended June 30, 2012 and 2013:

	Six Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)
	2012	2013		
	($ in thousands)			
Research and development expenses	$ 8,262	$ 11,022	$ 2,760	33%

Research and development expenses increased by $2.8 million from the six months ended June 30, 2012 to the six months ended June 30, 2013. This increase was primarily due to an increase of $4.7 million in expenses related to activities under our subcontracts with CUBRC with respect to the BARDA Contract, and the NIAID Contract and our subaward with respect to the NIAID Grant; an increase of $1.3 million in clinical costs associated with the preparation for our Phase 3 clinical trials of eravacycline; and an increase of $0.9 million in clinical and drug manufacturing costs associated with the Phase 1 clinical trial of an oral formulation of eravacycline. These increases were partially offset by a decrease in clinical and drug manufacturing costs of $2.8 million attributable to the completion of our Phase 2 clinical trial of eravacycline in the first half of 2012; a decrease of $1.1 million resulting from the allocation of research and development resources related to activities under our subcontracts with CUBRC with respect to the BARDA Contract and the NIAID Contract and our subaward with respect to the NIAID Grant; and a decrease in expenses associated with other pipeline compounds of $0.3 million.

General and Administrative Expenses

The following table summarizes our general and administrative expenses for the six months ended June 30, 2012 and 2013:

	Six Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)
	2012	2013		
	($ in thousands)			
General and administrative expenses	$ 1,963	$ 2,981	$ 1,018	52%

General and administrative expenses increased by $1.0 million from the six months ended June 30, 2012 to the six months ended June 30, 2013. This increase was primarily due to an increase of $0.6 million in audit, legal, insurance and consulting costs primarily due to being a public company; and an increase in personnel-related costs of $0.3 million mainly to support our increased activities related to the BARDA Contract, the NIAID Contract and the NIAID Grant.

Interest Income

The following table summarizes our interest income for the six months ended June 30, 2012 and 2013:

	Six Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)
	2012	2013		
			($ in thousands)	
Interest income	$	$ 2	$ 2	*%

* Not meaningful

Interest income for the six months ended June 30, 2012 and 2013 was immaterial.

Table of Contents

Interest Expense

The following table summarizes our interest expense for the six months ended June 30, 2012 and 2013:

	Six Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)
	2012	2013		
	($ in thousands)			
Interest expense	$ 450	$ 901	$ 451	100%

Interest expense increased by $0.5 million from the six months ended June 30, 2012 to the six months ended June 30, 2013. The increase in interest expense was primarily attributable to an increase in debt under the term loan facility with Silicon Valley Bank and Oxford Finance associated with our borrowings in December 2012 and February 2013.

Other Income (Expense)

The following table summarizes our other income (expense) for the six months ended June 30, 2012 and 2013:

	Six Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)
	2012	2013		
	($ in thousands)			
Other Income (expense)	$ (105)	$ 263	$ 368	(350)%

Other income (expense) consisted of the fair value adjustment of our preferred stock warrants issued in connection with various debt financings in October 2007, May 2011 and December 2012, which are described in Note 7 to our audited consolidated financial statements appearing elsewhere in this prospectus. The increase in other income (expense) from the six months ended June 30, 2012 to the six months ended June 30, 2013 was primarily due to a decrease in the fair value of the underlying preferred stock. We do not anticipate that we will recognize any further amounts with respect to these fair value adjustments as a result of the conversion of all outstanding warrants to purchase our preferred stock into warrants to purchase our common stock in connection with the completion of our IPO.

Comparison of the Years Ended December 31, 2011 and 2012

Contract and Grant Revenue

The following table summarizes our contract and grant revenue for the years ended December 31, 2011 and 2012:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2011	2012		
	($ in thousands)			
Contract and grant revenue	$ 185	$ 7,600	$ 7,415	4008%

Contract and grant revenue increased by $7.4 million from the year ended December 31, 2011 to the year ended December 31, 2012. This increase was primarily due to the commencement of work under our subcontracts under the BARDA Contract and the NIAID Contract and our subaward under the NIAID Grant, which provided $4.9 million, $2.4 million and $0.3 million, respectively, of contract and grant revenue in the year ended December 31, 2012.

Table of Contents

Research and Development Expenses

The following table summarizes our research and development expenses for the years ended December 31, 2011 and 2012:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2011	2012		
	($ in thousands)			
Research and development expenses	$ 17,737	$ 17,294	$ (443)	(2)%

Research and development expenses decreased by $0.4 million from the year ended December 31, 2011 to the year ended December 31, 2012. This decrease was primarily due to lower clinical costs of $1.2 million attributable to the completion of our Phase 2 clinical trial of eravacycline in the first half of 2012 and the completion of a Phase 1 clinical trial of another pipeline compound in the fourth quarter of 2011, a decrease in development milestone payments of $1.1 million under our license agreement with Harvard University reflecting various milestone payments made in 2011 primarily related to the initiation of the Phase 2 clinical trial for eravacycline and achievement of milestones for other preclinical compounds in development and a decrease of $0.8 million in preclinical expenses for an oral formulation of eravacycline and for other pipeline compounds. These decreases were partially offset by increases in process chemistry costs of $1.9 million, clinical costs of $0.5 million and preclinical costs of $0.2 million, in connection with our subcontracts under the NIAID Contract and the BARDA Contract and our subaward under the NIAID Grant.

General and Administrative Expenses

The following table summarizes our general and administrative expenses for the years ended December 31, 2011 and 2012:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2011	2012		
	($ in thousands)			
General and administrative expenses	$ 3,874	$ 4,309	$ 435	11%

General and administrative expenses increased by $0.4 million from the year ended December 31, 2011 to the year ended December 31, 2012. This increase was primarily due to additional overhead and personnel costs to support our increased activities related to the NIAID Contract, the BARDA Contract and the NIAID Grant.

Interest Income

The following table summarizes our interest income for the years ended December 31, 2011 and 2012:

	Years Ended December 31,	Increase (Decrease)	% Increase (Decrease)

	2011	2012		
		($ in thousands)		
Interest income	$ 1	$	$ (1)	(100)%

Interest income for the years ended December 31, 2011 and December 31, 2012 was immaterial.

Table of Contents

Interest Expense

The following table summarizes our interest expense for the years ended December 31, 2011 and 2012:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2011	2012		
	($ in thousands)			
Interest expense	$ 161	$ 1,021	$ 860	534%

Interest expense increased by $0.9 million from the year ended December 31, 2011 to the year ended December 31, 2012. The increase in interest expense was primarily attributable to an increase in debt under the term loan facility with Silicon Valley Bank and Oxford Finance that we entered into in May 2011, resulting primarily from borrowing $1.5 million under this term loan facility in May 2011 and an additional $6.5 million in December 2011.

Other Income (Expense)

The following table summarizes our other income (expense) for the years ended December 31, 2011 and 2012:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2011	2012		
	($ in thousands)			
Other Income (expense)	$ 22	$ (63)	$ (85)	(391)%

Other income (expense) consisted of the fair value adjustment of our preferred stock warrants issued in connection with various debt financings in October 2007, May 2011 and December 2012, which are described in Note 7 to our audited consolidated financial statements appearing elsewhere in this prospectus. The decrease in other income (expense) from the year ended December 31, 2011 to the year ended December 31, 2012 of $85,000 was due primarily to an increase in the fair value of the underlying preferred stock. We do not anticipate that we will recognize any further amounts with respect to these fair value adjustments as a result of the conversion of all outstanding warrants to purchase our preferred stock into warrants to purchase our common stock in connection with the completion of our IPO.

Table of Contents

Quarterly Results of Operations

The following tables set forth our unaudited operating results for each of the ten quarters in the period from January 1, 2011 to June 30, 2013. This information is derived from our unaudited financial statements, which in the opinion of management contain all adjustments, consisting of only normal recurring adjustments, that we consider necessary for a fair statement of such financial data. Operating results for these periods are not necessarily indicative of the operating results for a full year. Historical results are not necessarily indicative of results to be expected in future periods. You should read these data together with our financial statements and the related notes included elsewhere in this prospectus.

	Three Months Ended									
	March 31, 2011	June 30, 2011	September 30, 2011	December 31, 2011	March 31, 2012	June 30, 2012	September 30, 2012	December 31, 2012	March 31, 2013	June 30, 2013
	(in thousands, except per share data)									
Statement of operations data:										
Revenue	$	$	$	$ 185	$ 507	$ 1,316	$ 2,537	$ 3,240	$ 2,700	$ 3,722
Operating expenses										
Research and development	5,237	4,669	3,969	3,862	4,001	4,261	4,419	4,788	4,098	6,924
General and administrative	1,059	973	901	941	961	1,002	1,017	1,154	1,225	1,756
Total operating expenses	6,296	5,642	4,870	4,803	4,962	5,263	5,436	5,942	5,323	8,680
Loss from operations	(6,296)	(5,642)	(4,870)	(4,618)	(4,455)	(3,947)	(2,899)	(2,702)	(2,623)	(4,958)
Other income (expense)										
Interest income		1								2
Interest expense		(15)	(68)	(78)	(234)	(216)	(202)	(369)	(431)	(470)
Other (expense) income				22		(105)	23	19	263	
Other expense, net		(14)	(68)	(56)	(234)	(321)	(179)	(350)	(168)	(468)
Net loss	$ (6,296)	$ (5,656)	$ (4,938)	$ (4,674)	$ (4,689)	$ (4,268)	$ (3,078)	$ (3,052)	$ (2,791)	$ (5,426)
Net loss per share applicable to common stockholders basic and diluted	$ (21.81)	$ (19.50)	$ (16.62)	$ (15.56)	$ (15.20)	$ (13.42)	$ (9.63)	$ (9.43)	$ (1.51)	$ (0.26)

Weighted-average number of common shares used in net loss per share applicable to common stockholders basic and diluted	289	290	297	300	309	318	320	324	1,848	20,575

Liquidity and Capital Resources

We have incurred losses since our inception and anticipate that we will continue to incur losses for at least the next several years. We expect that our research and development and general and administrative expenses will continue to increase and, as a result, we will need additional capital to fund our operations, which we may obtain from additional financings, research funding, collaborations, contract and grant revenue or other sources.

Since our inception, we have funded our operations primarily through the public offering and private placements of our equity securities, debt financings and revenue from U.S. government awards. As of June 30, 2013, we had cash and cash equivalents of approximately $77.2 million. We invest cash in excess of immediate requirements in accordance with our investment policy primarily with a view to capital preservation. As of June 30, 2013, our funds were held in cash and money market funds.

In March 2013, we completed the sale of 10,714,286 shares of common stock in our IPO at a price to the public of $7.00 per share, resulting in net proceeds to us of $68.1 million after deducting underwriting discounts and commissions and offering costs. In addition, we granted the underwriters a 30-day option to purchase up to 1,607,143 additional shares of common stock at the initial public offering price to cover over allotments, if any.

Table of Contents

On April 12, 2013, we completed the sale of an additional 797,792 shares of common stock under this option at a price to the public of $7.00 per share, resulting in net proceeds to us of $5.2 million after deducting underwriting discounts and commissions.

On December 20, 2012, we amended our existing term loan facility with Silicon Valley Bank and Oxford Finance to provide for up to an additional $9.2 million in funding, to be made available in two tranches. We borrowed the first tranche of $6.2 million of the $9.2 million term loan facility in December 2012. We borrowed the second tranche of $3.0 million in February 2013. Each tranche bears interest at 9% per annum.

We are only required to pay interest, and not principal, for the first six months of each tranche of the $9.2 million term loan facility. Each tranche is to be repaid in 33 equal monthly payments of principal, plus accrued interest, after the interest only period. An additional payment of 2.9% of the original principal amount of each tranche will be due at the same time as the last loan payment for the tranche. The first tranche of $6.2 million matures on March 1, 2016. The second tranche of $3.0 million matures on May 1, 2016. The $9.2 million term loan is collateralized by a blanket lien on all corporate assets, excluding our intellectual property, and by a negative pledge on our intellectual property. In connection with the funding of the first tranche of $6.2 million, we issued to the lenders 10-year warrants to purchase an aggregate of 964,605 shares of Series C preferred stock with an exercise price of $0.2571 per share. In connection with the funding of the second tranche of $3.0 million, the warrant we issued to Silicon Valley Bank automatically became exercisable for an additional 233,372 shares of Series C preferred stock. In addition, we issued to Oxford Finance a 10-year warrant to purchase an additional 233,372 shares of Series C preferred stock with an exercise price of $0.2571 per share. Upon completion of the IPO, the warrants issued in connection with first and the second tranches became exercisable for an aggregate of 49,356 shares of our common stock at an exercise price of $7.46 per share and the related warrant liability was reclassified to additional paid-in capital.

The following table summarizes our sources and uses of cash:

	Years Ended December 31,		Six Months Ended June 30,	
	2011	2012	2012	2013
	(in thousands)			
Cash Flows from Continuing Operations:				
Net cash used in operating activities	$ (19,876)	$ (16,007)	$ (10,463)	$ (7,247)
Net cash used in investing activities	(65)	(54)	(10)	(22)
Net cash provided by (used in) financing activities	7,810	2,686	(837)	75,406
Net increase (decrease) in cash and cash equivalents	$ (12,131)	$ (13,375)	$ (11,310)	$ 68,137

Net Cash Used in Operating Activities

During the six months ended June 30, 2013 and 2012, our operating activities used net cash of $7.2 million and $10.5 million, respectively. The use of net cash in both periods primarily resulted from our net losses and changes in our working capital accounts. The decrease in net cash used in operations for the six months ended June 30, 2013 as compared to the six months ended June 30, 2012 was due primarily to an increase in contract and grant revenue in connection with our subcontracts under the BARDA Contract and the NIAID Contract and our subaward under the

NIAID Grant, offset in part by higher operating expenses during the six months ended June 30, 2013 of $14.0 million as compared to $10.2 million for the six months ended June 30, 2012.

During the years ended December 31, 2011 and 2012, our operating activities used net cash of $19.9 million and $16.0 million, respectively. The use of net cash in both periods primarily resulted from our net losses and changes in our working capital accounts. The decrease in net cash used in operations for the year ended December 31, 2012 as compared to the year ended December 31, 2011 was due primarily to an increase in

Table of Contents

contract and grant revenue in connection with our subcontracts under the BARDA Contract and the NIAID Contract and our subaward under the NIAID Grant.

Net Cash Used in Investing Activities

During the six months ended June 30, 2013 and 2012, our investing activities used net cash of $22,000 and $10,000, respectively. The use of net cash in both periods primarily resulted from purchases of property, plant and equipment to facilitate our increased research and development activities and increased headcount. The increase in net cash used in investing activities for the six months ended June 30, 2013 as compared to the six months ended June 30, 2012 was due to an increase in equipment purchased during the six months ended June 30, 2013 compared to the comparable time period in the prior year.

During the years ended December 31, 2011 and 2012, our investing activities used net cash of $65,000 and $54,000, respectively. The use of net cash in both periods primarily resulted from purchases of property, plant and equipment to facilitate our increased research and development activities and headcount. The decrease in net cash used in investing activities for the year ended December 31, 2012 as compared to the year ended December 31, 2011 was due primarily to a decrease in laboratory equipment purchases in 2012.

Net Cash Provided by (Used in) Financing Activities

During the six months ended June 30, 2013 and 2012, our net cash provided by (used in) financing activities was $75.4 million and $(0.8) million, respectively. The net cash provided by financing activities during the six months ended June 30, 2013 was primarily related to IPO offering proceeds of $73.8 million and $3.0 million in borrowings that we made under our debt facility with Silicon Valley Bank and Oxford Finance, partially offset by repayments on our debt facility of $1.4 million. The net cash used in financing activities during the six months ended June 30, 2012 was due to $0.9 million in repayments that we made in 2012 under our debt facility with Silicon Valley Bank and Oxford Finance, partially offset by proceeds from stock option exercises of $0.1 million.

During the years ended December 31, 2011 and 2012, our financing activities provided net cash of $7.8 million and $2.7 million, respectively. The net cash provided by financing activities during the year ended December 31, 2011 was due to $8.0 million in borrowings that we made in 2011 under our debt facility with Silicon Valley Bank and Oxford Finance. The net cash provided by financing activities during the year ended December 31, 2012 was primarily related to $6.2 million in borrowings that we made under our debt facility with Silicon Valley Bank and Oxford Finance, which amount was offset by $2.2 million in debt service and $1.3 million in deferred financing fees related to IPO costs.

Operating Capital Requirements

We expect to incur increasing operating losses for at least the next several years as we continue our ongoing Phase 3 clinical trial of eravacycline for the treatment of patients with cIAI, commence our planned Phase 3 clinical trial of eravacycline for the treatment of patients with cUTI, seek marketing approval for eravacycline, pursue development of eravacycline for additional indications, including hospital-acquired bacterial pneumonias and other serious and life-threatening infections, advance our other product candidates and satisfy our obligations under our license agreement with Harvard University. We may not be able to complete the development and initiate commercialization of eravacycline or our other product candidates if, among other things, our preclinical research and clinical trials are not successful, the FDA or the European Medicines Agency does not approve eravacycline or our other product candidates when we expect, or at all, or funding under the NIAID Contract, the NIAID Grant or the BARDA Contract is discontinued.

We believe that our existing cash and cash equivalents will enable us to fund our operating expenses and capital expenditure requirements through the first quarter of 2015. We believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our operating expenses and

Table of Contents

capital expenditure requirements through at least the end of 2015. We believe that our available funds following this offering will be sufficient to enable us to obtain top-line data from our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and our planned Phase 3 clinical trial of eravacycline for the treatment of cUTI and to submit an NDA to the FDA for eravacycline. We expect that these funds will not, however, be sufficient to enable us to commercially launch eravacycline.

We have based our projections of operating capital requirements on assumptions that may prove to be incorrect and we may use all of our available capital resources sooner than we expect. Because of the numerous risks and uncertainties associated with research, development and commercialization of pharmaceutical products, we are unable to estimate the exact amount of our operating capital requirements. Our future funding requirements will depend on many factors, including, but not limited to:

- the timing, design and costs of our ongoing Phase 3 clinical trial of eravacycline for the treatment of cIAI and our planned Phase 3 clinical trial of eravacycline for the treatment of cUTI;
- the timing and costs of developing eravacycline for additional indications, including hospital-acquired bacterial pneumonias and other serious and life-threatening infections;
- the initiation, progress, timing, costs and results of preclinical studies and clinical trials for our other product candidates and potential product candidates;
- the amount of funding that we receive under our subcontracts under the BARDA Contract and the NIAID Contract and under our subaward under the NIAID Grant, and the activities funded under the BARDA Contract, the NIAID Contract and the NIAID Grant;
- the number and characteristics of product candidates that we pursue;
- the outcome, timing and costs of seeking regulatory approvals;
- the costs of commercialization activities for eravacycline and other product candidates if we receive marketing approval, including the costs and timing of establishing product sales, marketing, distribution and manufacturing capabilities;
- subject to receipt of marketing approval, revenue received from commercial sales of eravacycline;
- the terms and timing of any future collaborations, licensing, consulting or other arrangements that we may establish;

the amount and timing of any payments we may be required to make, or that we may receive, in connection with the licensing, filing, prosecution, defense and enforcement of any patents or other intellectual property rights, including milestone and royalty payments and patent prosecution fees that we are obligated to pay to Harvard pursuant to our license agreement;

the costs of preparing, filing and prosecuting patent applications, maintaining and protecting our intellectual property rights and defending against intellectual property related claims; and

the extent to which we in-license or acquire other products and technologies.

We expect that we will need to obtain substantial additional funding in order to commercialize eravacycline. To the extent that we raise additional capital through the sale of common stock, convertible securities or other equity securities, the ownership interests of our existing stockholders may be materially diluted and the terms of these securities could include liquidation or other preferences that could adversely affect the rights of our existing stockholders. In addition, debt financing, if available, would result in increased fixed payment obligations and may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, that could adversely impact our ability to conduct our business. If we are unable to raise capital when needed or on attractive terms, we could be forced to significantly delay, scale back or discontinue the development or commercialization of eravacycline or other product candidates, seek collaborators at an earlier stage than otherwise would be desirable or on terms that

Table of Contents

are less favorable than might otherwise be available, and relinquish or license, potentially on unfavorable terms, our rights to eravacycline or other product candidates that we otherwise would seek to develop or commercialize ourselves.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

Net Operating Loss Carryforwards

As of December 31, 2012, we had federal net operating loss carryforwards of $81.0 million available to offset future federal income taxes. We also had federal research and development tax credit carryforwards of $1.6 million available to offset future federal income taxes. The federal net operating loss carryforwards and research and development tax credit carryforwards expire at various times through 2031. Net operating loss and tax credit carryforwards are subject to review and possible adjustment by the Internal Revenue Service and state tax authorities and 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%, as defined under Sections 382 and 383 of the United States Internal Revenue Code of 1986, as amended, as well as similar state provisions. This could limit the amount of tax attributes that can be utilized annually to offset future taxable income or tax liabilities. The amount of the annual limitation is determined based on the value of our company immediately prior to the ownership change. Subsequent ownership changes may further affect the limitation in future years. On December 31, 2012, we recorded a 100% valuation allowance against our net operating loss and research and development tax credit carryforwards, as we believe it is more likely than not that the tax benefits will not be fully realized. In the future, if we determine that a portion or all of the tax benefits associated with our tax carryforwards will be realized, net income would increase in the period of determination.

Contractual Obligations

The following table summarizes our outstanding contractual obligations as of payment due date by period at December 31, 2012:

		Payment by Period			
	Total	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years
			(in thousands)		
Term loan (1)	$ 14,055	$ 4,849	$ 9,206	$	$
Operating leases (2)	888	623	265		
Harvard milestone payment (3)	2,000		2,000		
	$ 16,943	$ 5,472	$ 11,471	$	$

(1) Consists of repayment obligations relating to principal and interest outstanding under our debt facility with Silicon Valley Bank and Oxford Finance as of December 31, 2012. Of the $12.0 million of principal outstanding as of December 31, 2012, $5.8 million of the outstanding principal, which we originally borrowed under the debt facility in 2011, bears interest at 10% per annum with an additional payment of 2.75% of the original principal

due at the maturity date of November 1, 2014. Under the terms of the loan and security agreement governing the debt facility, we were required to pay interest only on the 2011 borrowing through February 28, 2012. We are now repaying this indebtedness in equal monthly payments of $0.3 million through November 1, 2014. The additional payment of 2.75% will be due at the same time as the last loan payment. The remaining $6.2 million of outstanding principal, which we borrowed under the debt facility in December 2012, bears interest at 9% per annum with an additional payment of 2.9% of the original principal due at the maturity date of March 1, 2016. We are required to pay interest only on this principal through June 1, 2013. Following June 1, 2013, we will be required to repay this principal amount in 33 equal monthly payments of principal, plus accrued interest, through March 1, 2016. The additional

Table of Contents

payment of 2.9% will be due at the same time as the last loan payment. The loans under the debt facility are collateralized by a blanket lien on all of our corporate assets, excluding intellectual property, and by a negative pledge on our intellectual property. The loan and security agreement contains customary default provisions that include material adverse events, as defined therein, that would entitle the lenders to declare all principal, interest and other amounts owed by us under the loan and security agreement immediately due and payable. On February 28, 2013, we borrowed an additional $3.0 million under the debt facility, which amount bears interest at 9% per annum with an additional payment of 2.9% of the original $3.0 million of principal due at the maturity date of May 1, 2016.

(2) On March 15, 2012 and September 18, 2012, we amended our existing operating lease which extended our lease term through May 31, 2014.

(3) Consists of a milestone payment of $2.0 million that we were required to pay to Harvard upon dosing of the first patient in our first Phase 3 clinical trial of eravacycline. This dosing occurred during the third quarter of 2013 and we made this payment in October 2013.

In addition to the amounts shown in the above table, we are contractually obligated under our license agreement with Harvard University to make payments to Harvard upon the achievement of specified future development and regulatory milestones totaling up to $15.1 million per licensed product ($3.1 million of which has already been paid with respect to eravacycline), and to pay tiered royalties in the single digits based on annual worldwide net sales, if any, of licensed products by us, our affiliates and sublicensees. We are also obligated to pay Harvard a specified share of non-royalty sublicensing revenue that we receive from sublicensees for the grant of sublicenses under the license and to reimburse Harvard for specified patent prosecution and maintenance costs. Each of these potential payments is contingent upon the occurrence of certain future events and, given the nature of those events, it is unclear when, if ever, we may be required to pay such amounts or what the total amount of such payments will be. For these reasons, we have not included these contingent payment obligations in the table above.

We have employment agreements with certain employees that require the funding of a specific level of payments, if certain events, such as a change in control or termination without cause, occur.

In the course of normal business operations, we also have agreements with contract service providers to assist in the performance of our research and development and manufacturing activities. We can elect to discontinue the work under these agreements at any time. We could also enter into additional collaborative research, contract research, manufacturing, and supplier agreements in the future, which may require upfront payments and even long-term commitments of cash.

Recent Accounting Pronouncements

In February 2013, the Financial Accounting Standards Board, or FASB, issued FASB Accounting Standards Update, or ASU, No. 2013-02, *Comprehensive Income (Topic 220) Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income*, or ASU 2013-02. ASU 2013-02 requires an entity to provide information about the amounts reclassified out of accumulated other comprehensive income by component. In addition, an entity is required to present, either on the face of the financial statements or in the notes, significant amounts reclassified out of accumulated other comprehensive income by the respective line items of net income, but only if the amount reclassified is required under United States generally accepted accounting principles to be reclassified to net income in its entirety in the same reporting period. For amounts that are not required to be reclassified in their entirety to net income, an entity is required to cross-reference to other disclosures that provide additional details about those amounts. ASU 2013-02 is effective prospectively for reporting periods beginning after December 15, 2012. The adoption of this ASU did not have an impact on our financial statements.

76

Table of Contents

Qualitative and Quantitative Disclosures About Market Risk

Our cash equivalents are classified as available-for-sale and consisted of money market funds at December 31, 2012 and June 30, 2013. The investments in these financial instruments are made in accordance with an investment policy approved by our board of directors which specifies the categories, allocations and ratings of securities we may consider for investment. The primary objective of our investment activities is to preserve principal while at the same time maximizing the income we receive without significantly increasing risk. Some of the financial instruments that we invest in could be subject to market risk. This means that a change in prevailing interest rates may cause the value of the instruments to fluctuate. For example, if we purchase a security that was issued with a fixed interest rate and the prevailing interest rate later rises, the value of that security will probably decline. To minimize this risk, we intend to maintain a portfolio which may include cash, cash equivalents and investment securities available-for-sale in a variety of securities which may include money market funds, government and non-government debt securities and commercial paper, all with various maturity dates. Based on our current investment portfolio, we do not believe that our results of operations or our financial condition would be materially impacted by an immediate change of 10% in interest rates.

We do not hold or issue derivatives, derivative commodity instruments or other financial instruments for speculative trading purposes. Further, we do not believe our cash equivalents and investment securities have significant risk of default or illiquidity. We made this determination based on discussions with our investment advisors and a review of our holdings. While we believe our cash equivalents and investment securities do not contain excessive risk, we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in market value. All of our investments are recorded at fair value.

Table of Contents

BUSINESS

Overview

We are a clinical stage biopharmaceutical company using our proprietary chemistry technology to create novel antibiotics for serious and life-threatening multi-drug resistant infections. Our lead product candidate, eravacycline, is a fully synthetic tetracycline derivative that we are developing as a broad-spectrum intravenous and oral antibiotic for use as a first-line empiric monotherapy for the treatment of multi-drug resistant infections, including multi-drug resistant Gram-negative infections. We are conducting a Phase 3 clinical trial of eravacycline with intravenous administration for the treatment of complicated intra-abdominal infections, or cIAI, and are planning to initiate a second Phase 3 clinical trial of eravacycline for the treatment of complicated urinary tract infections, or cUTI, with intravenous-to-oral step-down therapy by the end of 2013. We expect to have top-line data from the Phase 3 cIAI clinical trial in the first quarter of 2015, data from a lead-in portion of the Phase 3 cUTI clinical trial in mid-2014 and top-line data from the Phase 3 cUTI clinical trial in the first half of 2015. Consistent with draft guidance issued by the United States Food and Drug Administration, or FDA, with respect to the development of antibiotics for cIAI and our discussions with the FDA, we expect that positive results from these two Phase 3 clinical trials would be sufficient to support submission of a new drug application, or NDA, for eravacycline in the treatment of cIAI and cUTI. If we complete the Phase 3 clinical trials of eravacycline when we anticipate and the trials are successful, we expect to submit an NDA to the FDA in the second half of 2015 and a marketing authorization application, or MAA, to the European Medicines Agency, or EMA, in the first half of 2016.

In our Phase 2 clinical trial of eravacycline monotherapy for the treatment of cIAI, eravacycline administered intravenously and dosed once or twice per day demonstrated a favorable safety and tolerability profile and a high cure rate, including against multi-drug resistant Gram-negative, Gram-positive and anaerobic bacteria. In *in vitro* experiments, eravacycline has demonstrated the ability to cover a wide variety of multi-drug resistant Gram-negative, Gram-positive, anaerobic and atypical bacteria, including multi-drug resistant *Klebsiella pneumoniae*, the species of Gram-negative bacteria that killed seven patients at the Clinical Center of the National Institutes of Health in 2012. Multi-drug resistant *Klebsiella pneumoniae* is one of the carbapenem-resistant *Enterobacteriaceae* listed as an urgent threat by the Centers for Disease Control and Prevention, or CDC, in a September 2013 report. Gram-negative bacteria that are resistant to all available antibiotics are increasingly common and a growing threat to public health. We believe that the ability of eravacycline to cover multi-drug resistant Gram-negative bacteria, as well as multi-drug resistant Gram-positive, anaerobic and atypical bacteria, and its potential for intravenous-to-oral step-down therapy, will enable eravacycline to become the drug of choice for first-line empiric treatment of a wide variety of serious and life-threatening infections. The FDA has designated the intravenous formulation of eravacycline as a qualified infectious disease product, making it eligible for fast track designation and priority review by the FDA as well as an additional five years of U.S. market exclusivity if eravacycline receives marketing approval from the FDA.

The tetracycline class of antibiotics has been used successfully for more than 50 years. Unlike our tetracycline compounds, all tetracyclines on the market and under development of which we are aware are produced semi-synthetically, first in bacteria and then modified in a limited number of ways by available chemistry. These conventional methods have only been able to produce tetracycline antibiotics with limited chemical diversity, making it difficult for conventional technology to create tetracycline antibiotics that address a wide variety of multi-drug resistant bacteria. In part, because of the challenges in creating novel tetracycline molecules, only one tetracycline antibiotic has been developed and approved by the FDA for sale in the United States in the past 30 years.

We believe that our proprietary chemistry technology, licensed from Harvard University on an exclusive worldwide basis and enhanced by us, represents a significant innovation in the creation of tetracycline drugs that has the potential to reinvigorate the clinical and market potential of the class. Our proprietary chemistry technology makes it possible

to create novel tetracycline antibiotics using a practical, fully synthetic process for what we believe is the first time. This fully synthetic process avoids the limitations of bacterially derived

tetracyclines and allows us to chemically modify many positions in the tetracycline scaffold, including most of the positions that we believe could not practically be modified by any previous method. Using our proprietary chemistry technology, we can create a wider variety of tetracycline-based compounds than was previously possible, enabling us to pursue novel tetracycline derivatives for the treatment of multi-drug resistant bacteria that are resistant to existing tetracyclines and other classes of antibiotic products. To date, we have used our proprietary chemistry technology to create more than 3,000 new tetracycline derivatives that we believe could not be practically created with conventional methods. We own exclusive worldwide rights to these compounds and our technology.

We have designed our Phase 3 program for eravacycline to enable us to position eravacycline as a first-line empiric monotherapy for the treatment of cIAI and cUTI due to eravacycline s broad-spectrum coverage of multi-drug resistant infections, including multi-drug resistant Gram-negative infections. Our program is consistent with the draft guidance issued by the FDA for drug development for cIAI and cUTI. The cIAI guidance indicates that, for companies developing a drug for cIAI and an additional indication caused by similar bacterial pathogens, such as cUTI, a single trial in cIAI and a single trial in that additional indication could be sufficient to provide evidence of effectiveness in both indications.

In the third quarter of 2013, we initiated a global, multi-center, randomized, double-blind, double-dummy Phase 3 clinical trial to assess the efficacy, safety and pharmacokinetics of eravacycline compared to ertapenem in patients with cIAI. We plan to enroll 536 patients in the trial at approximately 100 clinical sites worldwide. These patients will be randomized into two arms on a 1:1 basis. Patients in the eravacycline arm will receive 1.0 mg/kg of eravacycline administered intravenously twice per day. Patients in the ertapenem arm will receive 1.0 g of ertapenem administered intravenously once per day. We have designed the trial as a non-inferiority study. The primary endpoint of the trial is clinical response at the test-of-cure visit in the microbiological intent-to-treat, or micro-ITT, patient population in the trial. The micro-ITT population consists of all randomized patients in the trial who have baseline bacterial pathogens that cause cIAI and against which the dosed eravacycline or ertapenem has antibacterial activity.

We plan to initiate our Phase 3 clinical trial of eravacycline for the treatment of cUTI by the end of 2013. We have designed this trial as a two-part, multi-center, randomized, double-blind trial to assess the efficacy and safety of eravacycline compared with levofloxacin in the treatment of cUTI. We plan to enroll 120 patients in the lead-in portion of the trial. These patients will be randomized into three arms on a 1:1:1 basis receiving 1.5 mg/kg of eravacycline intravenously every 24 hours followed by 200 mg of eravacycline orally every 12 hours, 1.5 mg/kg of eravacycline intravenously every 24 hours followed by 250 mg of eravacycline orally every 12 hours or 750 mg of levofloxacin intravenously every 24 hours followed by 750 mg of levofloxacin orally every 24 hours. Following treatment of the 120 patients, we plan to evaluate primary efficacy, safety and tolerability endpoints to determine the dose regimen for eravacycline to be studied in the second portion of the trial. We then plan to enroll 720 patients who will be randomized on a 1:1 basis to receive the selected dose regimen of eravacycline or the levofloxacin dose regimen. We have designed the second portion of the trial as a non-inferiority study. The primary endpoint of the second portion of the trial is clinical and microbiological response in the micro-ITT population approximately seven days after completion of treatment.

In 2011 and 2012, the U.S. government awarded contracts for potential funding of over $100 million for the development of our antibiotic compounds. These awards include a contract for up to $67 million from the Biomedical Advanced Research and Development Authority, or BARDA, an agency of the U.S. Department of Health and Human Services, for the development of eravacycline for the treatment of disease caused by bacterial biothreat pathogens, which we refer to as the BARDA Contract. These awards also include a contract for up to $36 million from the National Institute of Allergy and Infectious Diseases, or NIAID, a division of the National Institutes of Health, for the development of TP-271, a preclinical compound that we are developing for respiratory diseases caused by bacterial biothreat pathogens, which we refer to as the NIAID Contract. These awards were made to CUBRC, Inc., or CUBRC,

an independent, not-for-profit, research corporation that specializes in U.S. government-based contracts, with which we are collaborating. CUBRC serves as the prime

Table of Contents

contractor under these awards, primarily carrying out a program management and administrative role with additional responsibility for the management of preclinical studies. We serve as lead technical expert on all aspects of these awards and also serve as a subcontractor of CUBRC responsible for management of chemistry, manufacturing and control activities and clinical studies. Under our subcontracts with CUBRC, we may receive funding of up to approximately $39.8 million reflecting the portion of the BARDA Contract funding that may be paid to us for our activities, and up to approximately $13.3 million reflecting the portion of the NIAID Contract funding that may be paid to us for our activities. The BARDA Contract includes funding for some of the activities that we would otherwise be required to fund on our own in connection with any NDA filing for eravacycline.

In addition to eravacycline and TP-271, we are pursuing the discovery and development of additional antibiotics to target unmet medical needs, including compounds that might for the first time provide coverage with tetracycline-derived antibiotics of *Pseudomonas* bacteria, as well as other multi-drug resistant Gram-negative bacteria. Any efforts by us with respect to these programs will be subject to the availability of resources not allocated to our development of eravacycline.

Strategy

Our goal is to become a fully integrated biopharmaceutical company that discovers, develops and commercializes novel antibiotics for use in areas of unmet medical need. Key elements of our strategy include:

Complete clinical development of eravacycline in its lead indications and seek regulatory approval. We have completed a Phase 2 clinical trial of the intravenous formulation of eravacycline in patients with cIAI. We plan to conduct two global Phase 3 clinical trials of eravacycline, one for the treatment of cIAI, which we commenced in the third quarter of 2013, and one for the treatment of cUTI, which we expect to commence by the end of 2013. We expect to have top-line data from the Phase 3 cIAI clinical trial in the first quarter of 2015, data from the lead-in portion of the Phase 3 cUTI clinical trial in mid-2014 and top-line data from the Phase 3 cUTI clinical trial in the first half of 2015. If we complete the Phase 3 clinical trials of eravacycline when we anticipate and the trials are successful, we expect to submit an NDA to the FDA in the second half of 2015 and an MAA to the EMA in the first half of 2016.

Establish one or more collaborations for the development and commercialization of eravacycline outside the United States. We intend to seek to enter into one or more collaborations for the development and commercialization of eravacycline outside the United States.

Maximize the commercial potential of eravacycline. If eravacycline is approved, we intend to directly commercialize eravacycline in the United States with a targeted hospital sales force and to commercialize eravacycline outside the United States through collaboration arrangements. We believe that eravacycline s broad-spectrum coverage of multi-drug resistant Gram-negative bacteria and other multi-drug resistant bacteria, with the potential for intravenous-to-oral step-down, will allow it to be used to treat patients successfully in hospitals, emergency rooms and out-patient clinic settings.

Pursue development of eravacycline in additional indications. We are initially developing eravacycline for the treatment of cIAI and cUTI, and, subject to obtaining additional financing beyond this offering, intend to

pursue development of eravacycline for the treatment of additional indications, including hospital-acquired bacterial pneumonias and other serious and life-threatening infections following our development of eravacycline for the treatment of cIAI and cUTI. We may pursue these development activities either by ourselves or with collaborators.

Opportunistically advance development of other product candidates created using our proprietary chemistry technology. We have used our proprietary chemistry technology to create more than 3,000 new tetracycline derivatives that we believe could not be practically created with conventional methods. We intend to advance our antibiotic product pipeline with differentiated product candidates created using our proprietary chemistry technology and targeting hospital and acute care markets. We may pursue these activities either by ourselves or with collaborators.

Table of Contents

Drug-Resistant Antibiotic Market

Physicians commonly prescribe antibiotics to treat patients with acute and chronic infectious diseases that are either known, or presumed, to be caused by bacteria. According to IMS Health, in 2011, approximately $41 billion was spent on antibiotic drugs worldwide, of which almost $9 billion was spent in the United States. The widespread use of antibiotics has resulted in a rapid increase in bacterial infections that are resistant to multiple antibacterial agents. For example, the bacterial pathogen *Klebsiella pneumoniae* is responsible for roughly 14% of Gram-negative infections in hospital intensive care units. Multi-drug resistant *Klebsiella pneumoniae* are typically treated with the carbapenem class of antibiotics. However, in recent years, strains resistant to carbapenem antibiotics have emerged and markedly increased the threat posed by *Klebsiella pneumoniae*, as infections caused by carbapenem-resistant strains have few treatment options.

As a result of the increasing prevalence of such multi-drug resistant bacteria, some antibiotics targeting these bacteria have been highly successful commercially. These include:

- linezolid, an intravenously and orally administered antibiotic marketed by Pfizer as Zyvox, which had worldwide sales in 2012 of $1.3 billion;
- levofloxacin, an intravenously and orally administered antibiotic marketed by Ortho-McNeil and Johnson & Johnson as Levaquin, which had worldwide sales in 2012 of $75 million, down from worldwide sales of $1.4 billion in 2010 after losing U.S. market exclusivity in June 2011;
- meropenem, an intravenously administered antibiotic marketed by AstraZeneca as Merrem, which had worldwide sales in 2012 of $396 million, down from worldwide sales of $817 million in 2010 after losing U.S. market exclusivity in June 2010; and
- daptomycin, an intravenously administered antibiotic marketed by Cubist Pharmaceuticals, Inc. as Cubicin, which had worldwide sales in 2012 of $860 million.

Bacterial infections are caused by a variety of different types of bacteria and the infections they cause can range from mild to serious, life threatening infections requiring immediate treatment. Bacteria are broadly categorized as Gram-positive, Gram-negative, atypical or anaerobic. Gram-positive bacteria possess a single membrane and a thick cell wall and turn dark-blue or violet when subjected to a laboratory staining method known as Gram s method. Common causes of Gram-positive bacterial infections include species of *Staphylococcus*, such as methicillin-resistant *Staph aureus*, or MRSA, *Streptococcus* and *Enterococcus*. Gram-negative bacteria have two membranes with a thin cell wall and, when subjected to Gram s method of staining, lose the stain or are decolorized. According to The New England Journal of Medicine, the most common cause of Gram-negative infection is *Escherichia coli*, or *E. coli*. Less prevalent Gram-negative bacteria strains include species of *Acinetobacter*, *Klebsiella* and *Pseudomonas*. Atypical bacteria, such as *Mycoplasma* species, have modified cell walls and are neither Gram-positive nor Gram-negative. Anaerobic bacteria, such as *Bacteroides* species, either cannot grow in the presence of oxygen or do not require oxygen to grow and are classified as either Gram-positive or Gram-negative.

Antibiotics that treat bacterial infections can be classified as broad-spectrum or narrow-spectrum. Antibiotics that are active against a mixture of Gram-positive, Gram-negative and anaerobic bacteria are referred to as broad-spectrum.

Antibiotics that are active only against a select subset of bacteria are referred to as narrow-spectrum. Because it usually takes from 24 to 72 hours from the time a specimen is received in the laboratory to definitively diagnose a particular bacterial infection, physicians may be required to prescribe antibiotics for serious infections without having identified the bacteria. As such, effective first-line treatment of serious infections requires the use of broad-spectrum antibiotics with activity against a broad range of bacteria at least until the bacterial infection can be diagnosed.

Many strains of bacteria have mutated over time and have developed resistance to existing drugs, resulting in infections that are increasingly serious or more difficult to treat. These drug-resistant pathogens have become a growing menace to all people, regardless of age, gender or socioeconomic background. They endanger people in

affluent, industrial societies like the United States, as well as in less-developed nations. Gram-positive bacteria that have developed resistance to existing drugs include:

- *Streptococcus pneumoniae* that cause pneumonia, ear infections, bloodstream infections and meningitis;
- *Staphylococcus aureus* that cause skin, bone, lung and bloodstream infections; and
- *Enterococci* that are responsible for infections transmitted in healthcare settings.

Gram-negative bacteria that have developed resistance to existing drugs include:

- *Escherichia coli* that cause urinary tract, skin and bloodstream infections;
- *Salmonella* and *Escherichia coli* that cause foodborne infections; and
- *Acinetobacter baumannii*, *Pseudomonas aeruginosa* and *Klebsiella* spp. that are responsible for infections transmitted in healthcare settings.

Broad spectrum antibiotics are used to treat major hospital infections such as cIAI, cUTI, acute bacterial skin and skin structure infections, or ABSSSI, and acute bacterial pneumonias. Based on an analysis of data from a variety of industry sources, we estimate that the number of patients treated with antibiotics in hospitals in the United States in a year include approximately 1.7 million cIAI patients, 4.0 million cUTI patients and 8.0 million ABSSSI and acute bacterial pneumonia patients. Of these patients, we believe that approximately 45% of cIAI patients, 25% of cUTI patients and 15% of ABSSSI and acute bacterial pneumonia patients have infections caused at least in part by multi-drug resistant Gram-negative bacteria.

According to a September 2013 report of the CDC, each year in the United States, at least two million people acquire serious infections with bacteria that are resistant to one or more of the antibiotics designed to treat those infections. At least 23,000 people die each year as a direct result of these antibiotic-resistant infections, with many more dying from other conditions that are complicated by the occurrence of an antibiotic-resistant infection. These antibiotic-resistant infections add considerable and avoidable costs to the already overburdened U.S. healthcare system. In the same September 2013 report, the CDC noted that the total economic cost of antibiotic infections to the U.S. economy has been estimated to be as high as $20 billion in excess of direct healthcare costs. In addition, the CDC reported that, among all of the bacterial resistance problems, Gram-negative pathogens are particularly worrisome because they are becoming resistant to nearly all drugs that would be considered for treatment, with the most serious Gram-negative infections being healthcare associated and the most common pathogens being *Enterobacteriaceae*, *Pseudomonas aeruginosa* and *Acinetobacter*.

As such, at present, there is an acute need for new drugs to treat multi-drug resistant Gram-negative bacteria. Currently approved products, such as Merrem and Levaquin, are becoming increasingly ineffective against Gram-negative bacteria due to increasing resistance, limiting patients treatment options, particularly for patients with multi-drug resistant infections, and few new therapeutic agents are in clinical development.

A survey of infectious disease specialists published in the June 2012 edition of *Clinical Infectious Disease* rated multi-drug resistant Gram-negative infections as the most important unmet clinical need in current practice. In the survey, 63% of physicians reported treating a patient in the past year whose bacterial infection was resistant to all available antibacterial agents. This resistance was confirmed by the SENTRY Antimicrobial Surveillance Program which evaluated *Enterobacteriaceae* and *Acinetobacter* spp., two Gram-negative species of bacteria, from 31 U.S. medical centers from 2005 to 2009. Specifically, the SENTRY Program found that, with respect to the *Enterobacteriaceae* family of bacteria, 6.8% of the *Escherichia coli* strains studied and 15.4% of the *Klebsiella* spp. strains studied exhibited an extended-spectrum beta lactamase, or ESBL, phenotype, and that 22.2% of *Enterobacter* spp. strains studies were ceftazidime-resistant. ESBLs are enzymes present in certain multi-drug resistant bacteria that destroy classes of beta lactam antibiotics, such as penicillins, cephalosporins and carbapenems. In addition, *Klebsiella pneumoniae* carbapenemase, or KPC, producing bacteria have emerged

Table of Contents

as a highly drug resistant Gram-negative bacteria associated with mortality rates ranging from 32% to 48%, as compared to 9% to 17% for strains of *Klebsiella pneumoniae* that are not carbapenem-resistant.

As a further example of the seriousness of the threat of Gram-negative bacteria resistant to all available antibacterial agents, in 2012, the national media including *The New York Times*, *The Wall Street Journal* and *The Washington Post* reported that the Clinical Center of the National Institutes of Health had an outbreak of Gram-negative *Klebsiella pneumoniae* bacteria strains that were resistant to all available antibiotics that resulted in seven deaths. In addition, there have been numerous reports that physicians have resorted to prescribing colistin for Gram-negative bacteria resistant to all other drugs. Colistin was discovered in 1949 and has not been widely used for decades because of serious toxicities, including nephrotoxicity. In our Phase 2 cIAI clinical trial, eravacycline dosed intravenously once or twice per day as a monotherapy was effective against multi-drug resistant *Klebsiella pneumoniae*.

The growing issue of antibiotic-resistant bacterial infections has been widely recognized as an increasingly urgent public health threat, including by the World Health Organization, the CDC and the Infectious Disease Society of America, or IDSA. In April 2011, IDSA issued a report warning that unless significant measures are taken to increase the pipeline of new antibiotics active against drug resistant bacteria, people will start to die from common, formerly treatable infections, and medical interventions such as surgery, chemotherapy, organ transplantation and care of premature infants will become increasingly risky. In the pre-antibiotic era before penicillin began to be available in 1942, patients frequently died from what subsequently became easily cured infections. The important need for new treatment options for serious bacterial infections was further highlighted by the passage in July 2012 of the Generating Antibiotic Incentives Now Act, which provides regulatory incentives for the development of new antibacterial or antifungal drugs intended to treat serious or life-threatening infections that are resistant to existing treatment. In September 2012, the FDA announced the formation of an internal task force to support the development of new antibacterial drugs, which they called a critical public healthcare goal and a priority for the agency.

Limitations of Available Treatment Options

When confronted with a new patient suffering from a serious infection caused by an unknown pathogen, a physician may be required to quickly initiate first-line empiric antibiotic treatment to stabilize the patient prior to definitively diagnosing the particular bacterial infection. However, current antibiotics for first-line empiric treatment of serious bacterial infections suffer from significant limitations, including one or more of the following:

Insufficient Coverage of Multi-Drug Resistant Bacteria. A physician cannot afford to be too limited in the spectrum of bacteria covered by antibiotics when initially treating a patient for a serious infection that has not yet been definitively identified. Frequently used products, such as Zyvox and Cubicin, are limited to Gram-positive bacteria and thus are rarely used as a first-line empiric monotherapy if broad bacterial coverage is required. In addition, other popular antibiotics that have been used as first-line empiric monotherapies, such as Levaquin, piperacillin/tazobactam, which is marketed by Pfizer as Zosyn, carbapenems, such as Merrem, and imipenem/cilastatin, which is marketed by Merck as Primaxin, have seen their utility as first-line empiric monotherapies diminished as the number of bacterial strains resistant to these therapies has increased.

Complicated and Expensive Multi-Drug Cocktails and Multi-Dose Regimens. Due to gaps in the spectrum of coverage of antibiotics, physicians are often confronted with the need to design complicated multi-drug cocktails for the first-line empiric treatment of patients with serious infections. The clinical situation is further complicated when each drug in the multi-drug cocktail has a different dosing regimen, such as two, three or four times a day, resulting in an added burden on the pharmacy and nursing staff, higher costs due to multiple drug administrations and an increased potential for medical errors or drug-drug interactions. We believe that, with the exception of eravacycline, most of the antibiotics that are in clinical trials and are being developed to cover a broad spectrum of bacteria, including

Gram-negative bacteria, or solely to address Gram-negative bacteria, are

Table of Contents

being developed to be used in combination with one or more other antibiotics, and require the addition of a third drug such as metronidazole to address the presence of anaerobes.

Safety and Tolerability Concerns. Concerns about antibiotic safety and tolerability are among the leading reasons why patients stop treatment and fail therapy. Antibiotics on the market have been associated with adverse effects such as myelosuppression, seizures, nephrotoxicity and gastrointestinal disorders.

Lack of Oral Dosage Forms to Permit Step-Down Therapy. When a patient comes to the emergency room or hospital for treatment of a serious infection, the patient initially receives intravenous treatment, which allows the drug to be delivered more rapidly and in a larger dose than oral treatment. Once the infection begins to respond to treatment and the patient is stabilized, depending on the infection, hospitals and physicians generally seek to manage in-hospital treatment and, if possible, discharge patients from the hospital in order to reduce costs, avoid hospital-acquired infections, and improve the patients quality of life. Upon discharge, physicians typically prefer to prescribe step-down treatment with an oral formulation of the same antibiotic. A step-down to oral treatment allows for more convenient and cost-effective out-patient treatment, with the oral antibiotic providing enhanced patient comfort and mobility and avoiding the risk of infection from the intravenous catheter. In addition, the use of the same antibiotic allows the physician to avoid switching the patient from the antibiotic that has proven effective during intravenous administration to a different antibiotic that may be less effective and carries the risk of new or different side effects. Many of the antibiotics that are most commonly used as first-line empiric monotherapies are only available in an intravenous formulation. Very few of the antibiotics that cover or are focused on the treatment of Gram-negative bacteria have oral dosage forms.

Given these limitations, there is an unmet medical need for a first-line empiric antibiotic treatment that has the following characteristics:

- Potency and effectiveness against a broad spectrum of bacteria, including multi-drug resistant Gram-negative, Gram-positive, atypical and anaerobic bacteria;
- Capability of being used as a monotherapy in the majority of patients in the hospital with cIAI, cUTI and other multi-drug resistant infections;
- A convenient dosing regimen, such as once or twice daily;
- A favorable safety and tolerability profile; and
- Availability in both intravenous dosage and oral dosage form.

Based on our belief that eravacycline has, or potentially has, each of these characteristics, our goal is to develop eravacycline to be the drug of choice for first-line empiric treatment of a wide variety of serious and life-threatening infections.

Eravacycline

Overview

We are developing our lead product candidate, eravacycline, as a broad-spectrum intravenous and oral antibiotic for use as a first-line empiric monotherapy for the treatment of multi-drug resistant infections, including multi-drug resistant Gram-negative bacteria. We developed eravacycline using our proprietary chemistry technology. We believe our fully synthetic process will enable us to have a cost of manufacturing that is sufficiently low to enable us to sell eravacycline, when and if approved, for a cost that is similar to other hospital-based antibiotics. Our patent strategy to broadly protect eravacycline includes the filing of patent applications directed towards the composition of matter of eravacycline as well as our proprietary chemistry technology, which we used to create eravacycline. We own exclusive worldwide rights for the development and commercialization of eravacycline.

Table of Contents

We completed a successful Phase 2 clinical trial of eravacycline with intravenous administration for the treatment of patients with cIAI. We are conducting a Phase 3 clinical trial of eravacycline with intravenous administration for the treatment of cIAI and are planning to initiate a second Phase 3 clinical trial of eravacycline for the treatment of cUTI with intravenous-to-oral step-down therapy by the end of 2013. We expect to have top-line data from the Phase 3 cIAI clinical trial in the first quarter of 2015, data from the lead-in portion of the Phase 3 cUTI clinical trial in mid-2014 and top-line data from the Phase 3 cUTI clinical trial in the first half of 2015. If we complete the Phase 3 clinical trials of eravacycline when we anticipate and the trials are successful, we expect to submit an NDA to the FDA in the second half of 2015 and an MAA to the EMA in the first half of 2016.

Tetracycline antibiotics have been in clinical use for over 50 years and have a demonstrated record of safety and effectiveness. However, as with most classes of antibiotics, a high incidence of resistance among many bacteria has limited their effectiveness and resulted in tetracyclines being relegated to second- or third-line therapy several decades after their introduction. Chemists have generally been unable to synthesize new tetracyclines that could overcome bacterial resistance mechanisms. We have used our proprietary chemistry technology to create more than 3,000 new tetracycline derivatives that we believe could not be practically created with conventional methods. Many of these new derivatives, including eravacycline, have been able to overcome bacterial resistance in *in vitro* studies.

Eravacycline is a novel, fully synthetic tetracycline antibiotic. We selected eravacycline for development from tetracycline derivatives that we generated using our proprietary chemistry technology on the basis of the following characteristics of the compound that we observed in *in vitro* studies of the compound:

- potent antibacterial activity against a broad spectrum of susceptible and multi-drug resistant bacteria, including Gram-negative, Gram-positive, atypical and anaerobic bacteria;
- potential to treat the majority of patients as a first-line empiric monotherapy with convenient dosing; and
- potential for intravenous-to-oral step-down therapy.

In designing eravacycline, we inserted a fluorine atom into the tetracycline scaffold, which we call a fluorocycline, and modified the scaffold at another position. We believe that these modifications will enable eravacycline to not be subject to tetracycline-specific mechanisms of drug resistance. As a result, we believe that eravacycline can be active against multi-drug resistant bacteria against which tetracyclines currently on the market or in development are not.

In *in vitro* studies, eravacycline has been highly active against emerging multi-drug resistant pathogens like *Acinetobacter baumannii* as well as clinically important species of *Enterobacteriaceae*, including those isolates that produce ESBLs or are resistant to the carbapenem class of antibiotics, and anaerobes.

Based on *in vitro* studies we have completed, we believe that eravacycline shares a similar potency profile with carbapenems except that it more broadly covers Gram-positive pathogens like MRSA and *enterococci,* is active against carbapenem-resistant Gram-negative bacteria and unlike carbapenems like Primaxin and Merrem is not active against *Pseudomanas aeruginosa*. Eravacycline has demonstrated strong activity *in vitro* against Gram-positive pathogens, including both nosocomial and community-acquired methicillin susceptible or resistant *Staphylococcus aureus* strains, vancomycin susceptible or resistant *Enterococcus faecium* and *Enterococcus faecalis,* and penicillin susceptible or resistant strains of *Streptococcus pneumoniae.* In *in vitro* studies for cIAI, eravacycline consistently exhibited strong activity against *enterococci* and *streptococci.* One of the most frequently isolated anaerobic

pathogens in cIAI, either as the sole pathogen or often in conjunction with another Gram-negative bacterium, is *Bacteroides fragilis.* In these studies eravacycline demonstrated activity against *Bacteroides fragilis* and a wide range of Gram-positive and Gram-negative anaerobes.

Table of Contents

Key Differentiating Attributes of Eravacycline

We believe that the following key attributes of eravacycline, observed in clinical trials and preclinical studies of eravacycline, differentiate eravacycline from other antibiotics targeting multi-drug resistant infections, including multi-drug resistant Gram-negative infections. We believe these attributes will make eravacycline a safe and effective treatment for cIAI, cUTI and other serious and life-threatening infections for which we may develop eravacycline, such as hospital-acquired bacterial pneumonias.

Broad-spectrum activity against a wide variety of multi-drug resistant Gram-negative, Gram-positive and anaerobic bacteria. In our Phase 2 clinical trial of the intravenous formulation of eravacycline, eravacycline demonstrated a high cure rate against a wide variety of multi-drug resistant Gram-negative, Gram-positive and anaerobic bacteria. In addition, in *in vitro* studies eravacycline demonstrated potent antibacterial activity against Gram-negative bacteria, including *E. coli*; ESBL-producing *Klebsiella pneumoniae*; *Acinetobacter baumannii*; Gram-positive bacteria, including MRSA and vancomycin-resistant *enterococcus*, or VRE; and anaerobic pathogens. As a result of this broad-spectrum coverage, we believe that eravacycline has the potential to be used as a first-line empiric monotherapy for the treatment of cIAI, cUTI, hospital-acquired bacterial pneumonias and other serious and life-threatening infections.

Lower probability of drug resistance. To date, in the clinical trials and preclinical studies of eravacycline that we have conducted we have seen little decrease in susceptibility that would suggest increased resistance to eravacycline. We believe that, as a fluorocycline, eravacycline will not be subject to tetracycline-specific mechanisms of drug resistance.

Favorable safety and tolerability profile. Eravacycline has been evaluated in more than 250 subjects in the Phase 1 and Phase 2 clinical trials that we have conducted. In these trials, eravacycline demonstrated a favorable safety and tolerability profile. In our Phase 2 clinical trial of eravacycline, no patients suffered any serious adverse events, and safety and tolerability were comparable to ertapenem, the control therapy in the trial. In addition, in the Phase 2 clinical trial, the rate at which gastrointestinal adverse events such as nausea and vomiting that occurred in the eravacycline arms was comparable to the rate of such events in the ertapenem arm of the trial.

Convenient dosing regimen. In our Phase 2 clinical trial we dosed eravacycline once or twice a day as a monotherapy. We believe that eravacycline will be able to be administered as a first-line empiric monotherapy with once- or twice-daily dosing, avoiding the need for complicated dosing regimens typical of multi-drug cocktails and the increased risk of negative drug-drug interactions inherent to multi-drug cocktails.

Potential for convenient intravenous-to-oral step-down. In addition to the intravenous formulation of eravacycline, we are also developing an oral formulation of eravacycline. If successful, this oral formulation would enable patients who begin intravenous treatment with eravacycline in the hospital setting to transition to oral dosing of eravacycline either in hospital or upon patient discharge for convenient home-based care. We believe that the availability of both intravenous and oral administration and the oral step-down may

reduce the length of a patient s hospital stay and the overall cost of care.

Clinical Experience

We have studied intravenous and oral formulations of eravacycline in 377 subjects in ten clinical trials from October 2009 to September 2013.

Phase 1 clinical trials of intravenous formulation

From 2009 to 2010, we studied the intravenous formulation of eravacycline in a Phase 1 single ascending dose, or SAD, clinical trial and a Phase 1 multiple ascending dose, or MAD, clinical trial. These trials were designed to evaluate the safety and tolerability of single escalating doses and multiple escalating doses of

Table of Contents

eravacycline. No serious adverse events were reported during the Phase 1 clinical trials and no clinically significant dose-related safety signals were reported. As expected in this class of antibiotics, transient gastrointestinal adverse events such as nausea and vomiting were observed at the higher dose levels in the Phase 1 clinical trials.

In 2009, we conducted the Phase 1 single ascending dose clinical trial of the intravenous formulation of eravacycline in 56 healthy subjects at a single clinical site in the United States. In the trial, subjects received a single 30-minute intravenous infusion of either placebo or eravacycline at doses of 0.10, 0.25, 0.50, 1.00, 1.50, 2.00 or 3.00 mg/kg. In each dose group of eight patients, six patients received eravacycline and two patients received placebo. The most common adverse events reported were nausea and vomiting. All adverse events were mild to moderate in intensity.

In 2010, we conducted the Phase 1 multiple ascending dose clinical trial of the intravenous formulation of eravacycline in 32 healthy subjects at a single clinical site in the United States. In the trial, subjects received 30-minute intravenous infusions of either placebo or eravacycline at doses of 0.50 or 1.50 mg/kg once daily for 10 days, 60-minute intravenous infusions of either placebo or eravacycline at a dose of 1.50 mg/kg once daily for 10 days or 60-minute intravenous infusions of either placebo or eravacycline at a dose of 1.00 mg/kg twice daily for 10 days. In each cohort of eight patients, six patients received treatment and two patients received placebo. The most common adverse events were associated with the infusion site. All adverse events were mild to moderate in intensity.

In the Phase 1 MAD clinical trial, we also measured levels of eravacycline in urine in patients who had received eravacycline to assess the potential for treatment of cUTI. A summary of the results of those measurements, which were taken following the final dose on the last day of treatment, is shown in the table below. These data show that renal excretion is not the primary route of elimination for eravacycline. We believe that the levels of eravacycline in urine support the development of eravacycline as a potential first-line therapy in patients with cUTI.

Eravacycline Levels in Urine

MAD Dose Group (mg/kg)	**Day 10 Urine Concentration in ng/mL (%CV)**	
	0-8 Hours	**8-24 Hours**
0.5 every 24 hours infused in 30 minutes	4,576.7 (57.9)	2,250.0 (31.1)
1.5 every 24 hours infused in 60 minutes	13,316.7 (25.7)	5,565.0 (39.2)
1.0 every 12 hours infused in 60 minutes	25,060.0 (21.1)	9,230.0 (26.1)

CV refers to the coefficient of variability, a statistical measure of the dispersion of a probability distribution.

The most recent tetracycline-based antibiotic to be approved for marketing by the FDA is tigecycline, which was approved in 2005 and is marketed by Pfizer under the name Tygacil. We have not conducted a head-to-head comparison of eravacycline and tigecycline in a clinical trial, but have compared the published data from Pfizer s Phase 1 clinical trials of tigecycline to the data from our Phase 1 clinical trials of eravacycline. Based on this comparison, eravacycline demonstrated better gastrointestinal tolerability than tigecycline while also achieving higher blood levels with higher area under the curve, or AUC, than tigecycline. AUC is a measure of total exposure to a drug over a period of time. Specifically, with respect to tolerability, all subjects in Pfizer s Phase 1 clinical trials of tigecycline that were treated with 75mg or 100mg of tigecycline every 12 hours experienced unacceptable rates and severity of nausea and emesis resulting in early termination of all subjects in both dosing groups. In the eravacycline Phase 1 MAD clinical trial, one of the six subjects in the 1.00 mg/kg every 12 hours dosing group discontinued the study drug because of nausea. The other subjects all tolerated the full 10 days of dosing. At the same time, the

AUC_{0-12} for the 1.00 mg/kg every 12 hours dose in the eravacycline Phase 1 MAD

Table of Contents

clinical trial was 6344 ng*h/mL (19.9% CV), while the AUC_{0-12} for tigecycline administered at a higher dose (100 mg every 12 hours) was 4980 ng*h/mL (19% CV). While we believe this comparison to tigecycline s previously published Phase 1 data, and the other comparisons we make in this prospectus to tigecycline s previously published clinical trial data, are useful in evaluating eravacycline s clinical trial results, the fact that we have not conducted a head-to-head study and that the tigecycline trials were conducted under different protocols at different sites and at different times than our trials may limit the value or reliability of any such comparison.

In 2013, we conducted a Phase 1 cardiac repolarization clinical trial of the intravenous formulation of eravacycline in 53 healthy volunteers. We observed no clinically significant effects of eravacycline on electrical activity in the heart in this clinical trial. As part of the development program for eravacycline, we have also initiated a required Phase 1 clinical trial to investigate the pharmacokinetics of eravacycline in 18 subjects with hepatic insufficiency and plan to initiate a required Phase 1 clinical trial to investigate the pharmacokinetics of eravacycline in six subjects with renal insufficiency in the fourth quarter of 2013.

Phase 2 clinical trial of intravenous formulation in cIAI

In June 2012, we completed a global, multi-center, randomized, double-blind Phase 2 clinical trial to evaluate the efficacy, safety and pharmacokinetics of the intravenous formulation of eravacycline compared to ertapenem in patients with cIAI. We selected cIAI as the indication for the trial because we wanted to ensure that there would be a significant population of patients in the study with multi-drug resistant Gram-negative bacteria and because Gram-negative bacteria are prevalent in cIAI. We selected ertapenem as the comparison therapy because ertapenem is one of the antibiotics recommended by IDSA guidelines for the treatment of cIAI. We also established clinical sites in countries such as India, where multi-drug resistant Gram-negative pathogens have higher prevalence.

Trial Design. We enrolled 143 hospitalized patients with cIAI in the trial. These patients were randomized into three arms on a 2:2:1 basis:

- an arm in which patients received 1.5 mg/kg of eravacycline administered intravenously once per day;
- an arm in which patients received 1.0 mg/kg of eravacycline administered intravenously twice per day; and
- a control arm in which patients received 1.0 g of ertapenem administered intravenously once per day, which is the standard dosing regimen for ertapenem.

Investigators obtained baseline intra-abdominal cultures at the time of operation and treated patients for a minimum of four days and a maximum of 14 days. The length of treatment for each patient was determined by the physician based on pre-set parameters. A test-of-cure, or TOC, visit took place ten to 14 days after the last dose of drug was administered and a final or follow-up visit occurred within four to six weeks after the last dose of drug was administered.

Of the 143 patients in the trial, four did not receive drug. Two were excluded because of incorrect randomization, one withdrew consent for inclusion in the trial after randomization, and one was excluded for having received non-study antibiotics prior to the first dose. At least one pathogen or bacterium responsible for the cIAI was identified following enrollment in 119 of the 139 patients who received drug in the trial. We refer to this subset of patients as the microbiologically-modified intent-to-treat, or m-MITT, patients. Of the 119 m-MITT patients, 109 were deemed

clinically evaluable based on key inclusion and exclusion criteria being validated and key visits and assessments having been performed. We refer to this subset of the m-MITT patients as the microbiologically evaluable, or ME, patients. The 10 m-MITT patients that were not considered clinically evaluable were not classified as ME patients as a result of their withdrawing consent, failing to complete the study, failing to attend a TOC visit or having indeterminate results at the TOC visit. The primary endpoint of the trial was clinical response at the TOC visit in the ME patients. Clinical response was defined as complete

Table of Contents

resolution or significant improvement of signs or symptoms of infection with no further systemic antibiotic treatment required. Included as one of the secondary endpoints in the trial was clinical response at the follow-up visit in the m-MITT population.

A diagram summarizing the trial design follows:

Eravacycline Phase 2 Trial Design

The baseline demographics of the patients in each arm of the trial are summarized in the table below. As shown in the table, patient demographics were similar across all three trial arms except for APACHE scores as, at baseline, the patients in the 1.5 mg/kg dose group exhibited slightly higher APACHE scores than the other treatment groups. APACHE scores are a commonly used severity of disease scoring system, where a higher number means that the patient had more severe disease and higher risk of death.

Eravacycline Phase 2 Trial Patient Demographics

Parameter	Eravacycline (1.5 mg/kg every 24 hours) N=56	Eravacycline (1.0 mg/kg every 12 hours) N=57	Ertapenem (1.0 g every 24 hours) N=30
Mean Age (y) [Standard Deviation]	43.6 [18.4]	42.1 [17.2]	41.8 [17.6]
Mean Weight (kg) [Standard Deviation]	68.1 [13.2]	70.0 [14.4]	68.8 [16.2]
Male (%)	38 (67.9)%	43 (75.4)%	22 (73.3)%
Caucasian (%)	40 (71.4)%	37 (64.9)%	21 (70.0)%
APACHE Score			
Mean [Standard Deviation]	8.2 [3.9]	6.0 [3.8]	6.1 [2.7]
<10 (%)	41 (74.6)%	48 (84.2)%	28 (96.6)%
10-15 (%)	13 (23.6)%	8 (14.0)%	1
>15	1	1	

Table of Contents

The following table summarizes the diseases underlying the MITT patients infections, which were being treated with the antibiotics in the trial.

Eravacycline Phase 2 Trial MITT Population Diseases

Intra-Operative Diagnosis	Eravacycline (1.5mg/kg every 24 hours) N=54	Eravacycline (1.0mg/kg every 12 hours) N=56	Ertapenem (1.0g every 24 hours) N=29
Complicated Appendicitis	29	31	15
Other	25	25	14
Perforation of Intestine	5	5	1
Complicated Diverticulitis		2	
Gastric/Duodenal Perforation	13	12	8
Complicated Cholecystitis	3	4	3
Other (Abscess/Peritonitis)	4	2	2

Efficacy. In the trial, ME patients in the eravacycline arms experienced similar infection cure rates to the ME patients in the ertapenem arm, as summarized in the table below. The table also shows the 95% confidence interval, a statistical determination that demonstrates the range of possible differences in the point estimates of success that will arise 95% of the time the endpoint is measured.

Eravacycline Phase 2 Trial Primary Endpoint Analysis

Population	Eravacycline (1.5 mg/kg every 24 hours)	Eravacycline (1.0 mg/kg every 12 hours)	Ertapenem (1.0 g Every 24 hours)
Microbiologically Evaluable (ME)	N=42	N=41	N=26
% Cure in ME (95% Confidence Interval)	92.9 (80.5-98.5)	100 (91.4-100)	92.3 (74.9-99.1)

Investigators in the trial had the discretion to determine the period that patients remained on the applicable treatment. The mean duration of treatment in the trial was 6.1 days for the patients receiving 1.5 mg/kg of eravacycline intravenously once per day; 5.6 days for the patients receiving 1.0 mg/kg of eravacycline intravenously twice per day; and 6.0 days for the patients receiving 1.0 g of ertapenem intravenously once per day.

Of particular importance in the trial results was the performance of eravacycline against confirmed drug-resistant Gram-negative pathogens as well as other challenging Gram-negative pathogens. Due to the global, multi-center nature of the trial and our emphasis on sites in known geographic hot spots for multi-drug resistant Gram-negative bacteria, 25% of the Gram-negative pathogens identified in m-MITT patients were confirmed to be multi-drug resistant as a result of being ESBL-positive and/or carbapenem-resistant. The table below summarizes the pathogens isolated from the m-MITT patients enrolled in the Phase 2 clinical trial, of which 60.4% were members of the *Enterobacteriaceae* family. m-MITT patients in the trial were infected with an average of 1.8 pathogens:

90

Table of Contents

Eravacycline Phase 2 Trial m-MITT Population Pathogens

	Total Pathogens	Eravacycline (1.5 mg/kg every 24 hours)	Eravacycline (1.0 mg/kg every 12 hours)	Ertapenem (1.0 g every 24 hours)
Gram-negative aerobic pathogens				
Escherichia coli	94	40	37	17
Klebsiella pneumoniae	14	8	4	2
Klebsiella oxytoca	7	2	4	1
Pseudomonas aeruginosa	8	5	3	
Acinetobacter baumannii complex	4	1	1	2
Acinetobacter spp.	1			1
Comamonas testosteroni	2		2	
Proteus mirabilis	2	1		1
Aeromonas spp.	1			1
Citrobacter braakii	1	1		
Citrobacter freundii	1		1	
Enterobacter cloacae	2		2	
Morganella morganii	4	1		3
Pantoea spp.	1			1
Providencia rustigianii	1		1	
Stenotrophomonas maltophilia	1		1	
Total	144	59	56	29
Gram-positive aerobic pathogens				
Streptococcus spp.	15	5	6	5
Streptococcus anginosus	4	2	1	1
Enterococcus faecalis	8	2	2	4
Enterococcus faecium	3	1	1	1
Enterococcus avium	4	2	1	1
Enterococcus gallinarum	1			1
Staphylococcus spp.	6	1	3	1
Staphylococcus aureus	7	1	4	2
Bacillus spp.	1			1
Leuconostoc spp.	1		1	
Total	50	14	19	17
Anaerobic pathogens				
Bacteroides fragilis	5	1	1	3
Bacteroides vulgatus	2	2		
Bacteroides ovatus	1			1
Bacteroides thetaiotaomicron	1		1	
Bacteroides ureolyticus	3		3	
Clostridium spp.	4		4	
Bifidobacterium spp.	1		1	
Gemella morbillorum	1	1		
Total	18	4	10	4

Safety and Tolerability. In the Phase 2 clinical trial, eravacycline demonstrated a comparable safety and tolerability profile to ertapenem. No patients in the trial suffered any serious adverse events that were found to be related to eravacycline, and the percentage of patients in the trial arms that experienced treatment emergent adverse events, or TEAEs, were similar. In addition, gastrointestinal adverse events known to be associated with tetracyclines such as nausea and vomiting occurred at modest rates in the eravacycline arms that were similar to the rates for the ertapenem arm. Adverse events associated with infusion sites were limited and similar in all

Table of Contents

treatment groups. The table below shows the adverse events experienced by patients in the trial that were assessed by the investigator as possibly related to the study drugs.

Eravacycline Phase 2 Trial Study-Drug Adverse Events

Adverse Event (≥1 occurrence)	Eravacycline (1.5 mg/kg every 24 hours) N=53[a]	Eravacycline (1.0 mg/kg every 12 hours) N=56	Ertapenem (1.0 g every 24 hours) N=30[a]
Any TEAE	2(3.8)%	3 (5.4)%	3 (10.0)%
Nausea		2 (3.6)%	1 (3.3)%
Vomiting	1 (1.9)%	1 (1.8)%	
Elevated amylase			1 (3.3)%
Elevated lipase			1 (3.3)%
Thrombophlebitis (associated with infusion sites)		1 (1.8)%	

[a] For the analysis of safety and tolerability, one of the MITT patients in the arm of the trial receiving 1.5 mg/kg of eravacycline intravenously once per day was reclassified into the ertapenem arm of the trial as a result of having, in error, received the ertapenem dosing instead of eravacycline.

Pharmacokinetics. Patients in the Phase 2 clinical trial were subjected to pharmacokinetic sampling during the period of treatment to enable us to assess plasma exposure levels of eravacycline in the trial.

Eravacycline Phase 2 Trial Pharmacokinetic Results

	Parameter	Eravacycline (1.5 mg/kg every 24 hours) N=48	Eravacycline (1.0 mg/kg every 12 hours) N=51
C_{max}	Mean (ng/mL)	**1,445.6**	**952.6**
	%CV	80.8%	79.8%
AUC_{0-12}	Mean (ng*h/mL)	**4,349.9**	**3,240.7**
	%CV	50.2%	53.5%

The table above summarizes selected pharmacokinetic parameters that we obtained from the pharmacokinetic sampling. C_{max} refers to the maximum observed peak plasma concentration.

Efficacy for tetracycline-class molecules is driven by the ratio of AUC to MIC. MIC refers to minimum inhibitory concentration, which is the minimum concentration of an antibiotic needed to inhibit the growth of an organism. In the Phase 2 clinical trial, we measured AUC for the 12 hours following dosing. As a result, in order to understand the AUC of the dose groups we studied in the trial over the 24 hours following dosing, we relied on modeling to predict the AUC of eravacycline in differing dose sizes and schedules over the 24 hours following dosing. For the patients receiving 1.5 mg/kg of eravacycline intravenously once per day we estimated that the AUC over the 24 hours following dosing would be 5220 ng*h/mL. For the patients receiving 1.0 mg/kg of eravacycline intravenously twice per day, we estimated that the AUC over the 24 hours following dosing would be at least 6480 ng*h/mL. We calculated this latter figure by doubling the AUC over the 12 hours following dosing shown in the table above due to

twice daily dosing in this arm of the trial. These estimated AUCs for eravacycline over the 24 hours following dosing are higher than the AUC over the 24 hours following dosing in the Phase 3 clinical trial data included in tigecycline s product label. We believe that these higher estimated AUCs for eravacycline as compared to tigecycline combined with the better tolerability indicated for eravacycline in our Phase 2 clinical trial, is supportive of eravacycline s potential to treat multi-drug resistant Gram-negative and other bacteria.

Table of Contents

Phase 1 clinical trials of oral formulation

In order to assess the potential for eravacycline to be developed as an orally administered drug, we conducted a Phase 1 single ascending dose clinical trial in 2010, a Phase 1 multiple ascending dose clinical trial in 2011 and a second Phase 1 multiple ascending dose clinical trial in 2013. In each of these trials, we evaluated the compound for safety, tolerability and pharmacokinetics. Results of the trials demonstrated that an oral formulation of eravacycline could achieve drug levels equivalent to those in the patients that received intravenous infusions of 1.5 mg/kg of eravacycline once per day in our Phase 2 cIAI clinical trial, levels that were effective in treating patients in our Phase 2 cIAI clinical trial. In the oral clinical trials, we utilized simple formulations. For the SAD oral trial, we formulated eravacycline in liquid solution of 5% dextrose in water, commonly referred to as D5W. For the MAD oral clinical trials, we formulated eravacycline in a simple capsule.

As part of the completed Phase 1 clinical trials referred to above, we evaluated the impact of food and fasting on the absorption of orally administered eravacycline and observed a significant food effect. As a result, we focused our development efforts on patients in a fasted state.

In 2010, we conducted a Phase 1 single ascending dose clinical trial of an oral formulation of eravacycline in 28 healthy subjects in a single-center, placebo-controlled, double-blind clinical trial. In the trial, subjects received eravacycline reconstituted in a solution of D5W at doses of 50mg, 100mg, 200mg and 300mg or placebo. In each dose group of eight patients, six patients received eravacycline and two patients received placebo. The most common adverse event reported was nausea. All adverse events were mild to moderate in intensity.

In 2011, we conducted a Phase 1 multiple ascending dose clinical trial of an oral formulation of eravacycline in 58 healthy subjects in a single-center, placebo-controlled, double-blind clinical trial. In the trial, subjects received eravacycline capsules at doses of 50mg, 100mg, 200mg and 300mg or placebo. In each dose group of eight patients, six patients received eravacycline and two patients received placebo. The most common adverse events reported were nausea and vomiting. All adverse events were mild to moderate in intensity. Doses of 100mg provided twice daily and 300mg provided once daily were well-tolerated. A single daily dose of 400mg was not tolerated due to gastrointestinal-related adverse events. We also measured pharmacokinetic parameters for eravacycline.

In 2013, we conducted a second Phase 1 multiple ascending dose clinical trial of an oral formulation of eravacycline in 36 healthy subjects in a single-center, placebo-controlled, double-blind clinical trial. In the trial, subjects received eravacycline capsules at doses of up to 250mg provided two or three times daily or placebo. In each dose group of eight patients, six patients received eravacycline and two patients received placebo. The most common adverse events reported were nausea and vomiting. All adverse events were mild to moderate in intensity. We also measured pharmacokinetic parameters for eravacycline. Doses of 200mg and 250mg provided twice daily were well-tolerated, with key pharmacokinetic parameters summarized in the table below.

Eravacycline Oral MAD Pharmacokinetic Results

	Parameter	Eravacycline (200 mg every 12 hours)	Eravacycline (250 mg every 12 hours)
C_{max}	Day 7 Mean (ng/mL)	261	398
	%CV	47%	14%
AUC_{0-24}	Day 7 Mean (ng*h/mL)	4520[a]	6200[a]

%CV	43%	17%

[a] Reflects two doses administered in the 24 hour period.

We carried out extensive modeling of the intravenous and oral pharmacokinetic data from our clinical trials of eravacycline in order to establish an oral step-down dose following intravenous administration. Based on our

Table of Contents

modeling results of eravacycline, we believe that a twice daily dose of either 200mg or 250mg of oral eravacycline will achieve plasma exposure levels equivalent to those resulting from daily administration of the intravenous formulation of eravacycline at 1.5 mg/kg and that a twice per day oral dosage form of eravacycline can be developed to permit oral step-down treatment of serious infections. As these twice daily oral doses of 200mg and 250mg were safe and well-tolerated in the second Phase 1 MAD clinical trial, we plan to evaluate these doses in our planned Phase 3 clinical trial of eravacycline with intravenous-to-oral step-down therapy for the treatment of cUTI.

Phase 3 Clinical Program

We have designed our Phase 3 program for eravacycline to enable us to position eravacycline as a first-line empiric monotherapy for the treatment of cIAI and cUTI due to eravacycline s broad-spectrum coverage of multi-drug resistant infections, including multi-drug resistant Gram-negative infections. Our program is consistent with the draft guidance issued by the FDA for drug development for cIAI and cUTI. The cIAI guidance indicates that, for companies developing a drug for cIAI and an additional indication caused by similar bacterial pathogens, such as cUTI, a single trial in cIAI and a single trial in that additional indication could be sufficient to provide evidence of effectiveness in both indications. We believe that prior to the issuance of this guidance, a company that was developing a drug for cIAI and an additional indication would have been required to conduct two Phase 3 clinical trials of the drug for the treatment of cIAI, enrolling 500 to 600 patients in each trial, and additional Phase 3 clinical trials of the drug for the treatment of the additional indication, even where cIAI and the additional indication were caused by similar bacterial pathogens. We believe that the opportunity provided by the draft guidance to submit an NDA package for two indications on the basis of only two Phase 3 clinical trials makes the process of developing and seeking approval of drugs for cIAI and a second indication more cost-effective. The trials can be conducted at the same time, and because the patient populations are different for the two trials, patient enrollment could be faster.

Phase 3 cIAI Clinical Trial

In the third quarter of 2013, we initiated a global, multi-center, randomized, double-blind, double-dummy Phase 3 clinical trial to assess the efficacy, safety and pharmacokinetics of eravacycline compared to ertapenem in patients with cIAI. We plan to enroll 536 patients in the trial at approximately 100 clinical sites worldwide. These patients will be randomized into two arms on a 1:1 basis. Patients in the eravacycline arm will receive 1.0 mg/kg of eravacycline administered intravenously twice per day. Patients in the ertapenem arm will receive 1.0 g of ertapenem administered intravenously once per day.

Investigators will obtain baseline intra-abdominal cultures at the time of operation and treat patients for a minimum of four days and a maximum of 14 days and until symptoms of cIAI are resolved. A test-of-cure visit will take place 25 to 31 days after the initial dose of treatment and a final or follow-up visit will occur 38 to 50 days after the initial dose of treatment.

We have designed the trial as a non-inferiority study. The primary endpoint of the trial is clinical response at the test-of-cure visit in the microbiological intent-to-treat, or micro-ITT, patient population in the trial. The micro-ITT population consists of all randomized patients in the trial who have baseline bacterial pathogens that cause cIAI and against which the dosed eravacycline or ertapenem has antibacterial activity. In order to achieve the primary endpoint, eravacycline would need to demonstrate non-inferiority as compared to ertapenem within a margin of no more than 10%. Secondary endpoints include clinical response at the end-of-treatment, test-of-cure and follow-up visits in the intent-to-treat population, the clinically evaluable population, the micro-ITT population and the microbiologically evaluable, or ME, population. In the trial, we also plan to study microbiologic response at the end-of-treatment and test-of-cure visits in the micro-ITT and ME populations, the safety and tolerability of eravacycline in the safety population and pharmacokinetic parameters after eravacycline administration. We designed the trial to be consistent

with the FDA s draft cIAI guidance, in which the FDA suggested that the primary efficacy endpoint for a trial of cIAI should be complete resolution of baseline signs

Table of Contents

and symptoms attributable to cIAI in the microbiological intent-to-treat patient population 28 days after randomization and the absence of clinical failure including death and unplanned surgical procedures through the period ending 28 days following randomization. The draft guidance defined this population as all randomized patients who have baseline bacterial pathogens that cause cIAI and against which the investigational drug has antibacterial activity.

Planned Phase 3 cUTI Clinical Trial

We plan to initiate our Phase 3 clinical trial of eravacycline for the treatment of cUTI by the end of 2013. We have designed this trial as a two-part, multi-center, randomized, double-blind trial to assess the efficacy and safety of eravacycline compared with levofloxacin in the treatment of cUTI. We plan to enroll 120 patients in the lead-in portion of the trial. These patients will be randomized into three arms on a 1:1:1 basis:

- an arm in which patients will receive 1.5 mg/kg of eravacycline intravenously every 24 hours followed by 200 mg of eravacycline orally every 12 hours;
- an arm in which patients will receive 1.5 mg/kg of eravacycline intravenously every 24 hours followed by 250 mg of eravacycline orally every 12 hours; and
- an arm in which patients will receive 750 mg of levofloxacin intravenously every 24 hours followed by 750 mg of levofloxacin orally every 24 hours.

Following treatment of the 120 patients, we plan to evaluate primary efficacy, safety and tolerability endpoints to determine the dose regimen for eravacycline to be studied in the second portion of the trial.

In the second portion of the trial, we plan to enroll 720 patients who will be randomized on a 1:1 basis to receive the selected dose regimen of eravacycline or the levofloxacin dose regimen. We have designed the second portion of the trial as a non-inferiority study and the primary endpoint is clinical and microbiological response in the micro-ITT population approximately seven days after completion of treatment. In order to achieve the primary endpoint, eravacycline would need to demonstrate non-inferiority as compared to levofloxacin within a margin of no more than 10%.

We expect to have top-line data from the Phase 3 cIAI clinical trial in the first quarter of 2015, data from the lead-in portion of the Phase 3 cUTI clinical trial in mid-2014 and top-line data from the Phase 3 cUTI clinical trial in the first half of 2015. If we complete the Phase 3 clinical trials of eravacycline when we anticipate and the trials are successful, we expect to submit an NDA to the FDA in the second half of 2015 and an MAA to the EMA in the first half of 2016. Our goal is to develop eravacycline to be the drug of choice for first-line empiric treatment of a wide variety of serious and life-threatening infections.

Preclinical Studies

In preclinical studies, we have evaluated the *in vitro* activity of eravacycline against a broad range of bacterial pathogens including Gram-negative, Gram-positive, atypical and anaerobic pathogens. In these studies, we also compared the potency of eravacycline to the potency of other antibiotic compounds against the same pathogens. In many cases, the isolates measured were resistant to one or more of the antibiotic compounds against which eravacycline was compared. In each case, we measured potency by determining the concentration of drug required to

inhibit the growth of 90% of a panel of bacterial strains isolated from patients. We refer to this measurement as a MIC_{90} measurement. A lower MIC_{90} indicates greater potency against a particular bacterium *in vitro*. Historically, with tetracyclines, MIC_{90} values of up to 2 μg/mL have indicated that Gram-positive bacteria were susceptible to tetracyclines and for most Gram-negative bacteria up to 4 μg/mL. Traditionally, bacteria considered resistant to an antibiotic have MIC_{90} values for Gram-positive bacteria of 8 μg/mL and for Gram-negative bacteria of 16 μg/mL and higher.

Table of Contents

In Vitro Activity Against Gram-negative Bacteria

The table below summarizes the *in vitro* activity of eravacycline and various antibiotics commonly used in hospitals today for the treatment of Gram-negative bacteria in panels that included 1,059 Gram-negative isolates. In each panel, isolates of a single species of bacteria were separately treated with each of the antibiotics in the study. The number specified in the table below for each species of bacteria indicates the number of isolates of that species that were included in the studies. The bacteria selected for evaluation were chosen because they are commonly found in serious hospital infections.

As shown in the table, eravacycline demonstrated potent, broad-spectrum Gram-negative antibacterial activity. In the majority of instances, the MIC_{90} of eravacycline was equivalent to or lower than the MIC_{90} values of the other antibiotics studied for each bacterium. Key observations from these *in vitro* studies include:

Eravacycline had MIC_{90} values of under 2 μg/mL against clinical isolates of *E. cloacae, A. baumannii, K. pneumoniae*, including ESBL-producing and carbapenem-resistant isolates, *C. freundii, S. maltophilia, M. morganii, P. vulgaris, P. stuartii,* and *K. oxytoca*.

Eravacycline was twice as potent as the next most active comparator, tigecycline, against *A. baumannii* in a panel that was 44% resistant to carbapenems, 53% resistant to tetracyclines and 64% resistant to fluoroquinolones.

Eravacycline was four times more potent than tigecycline against ESBL-producing *K. pneumoniae* isolates.

83%, 29%, and 43% of the isolates were fully resistant to fluoroquinolones, carbapenems and gentamicin, respectively.

Isolates of *Proteus mirabilis*, one of the *proteeae* species included in the table above, were two times more susceptible to eravacycline (MIC_{90} of 4 μg/mL) than to tigecycline.

P. aeruginosa isolates were largely not susceptible to eravacycline (MIC_{90} of 16 μg/mL) or tigecycline (MIC_{90} in excess of 16 μg/mL).

Table of Contents

In Vitro Activity Against Gram-positive Bacteria

The table below summarizes the *in vitro* activity of eravacycline and various antibiotics commonly used in hospitals today for the treatment of Gram-positive bacteria in panels that included 762 Gram-positive isolates. The bacteria selected for evaluation were chosen because they are commonly found in serious hospital infections.

Eravacycline demonstrated excellent *in vitro* potency against methicillin-susceptible and resistant *Staphylococcus aureus* and *Staphylococcus epidermidis*, vancomycin-susceptible and resistant *Enterococcus faecium* and *Enterococcus faecalis*, penicillin-susceptible and -resistant *Streptococcus pneumoniae*, *Streptococcus anginosus, Streptococcus intermedius, Streptococcus mitis, Streptococcus sanguis, Streptococcus pyogenes,* and *Streptococcus agalactiae.* The MIC_{90} values for eravacycline against all of the *streptococci* and *enterococci* in the panels were less than 0.12 μg/mL. For *staphylococci*, including MRSA confirmed to contain Panton-Valentine leukocidin virulence factor, the MIC_{90} values were less than 0.5 μg/mL in 180 MRSA isolates tested.

Table of Contents

In Vitro Activity Against Anaerobic Bacteria

The table below summarizes the *in vitro* activity of eravacycline and various antibiotics commonly used in hospitals today for the treatment of anaerobic bacteria in panels that included 190 anaerobic isolates. The bacteria selected for evaluation were chosen because they are commonly found in serious hospital infections.

Key observations from these *in vitro* studies include that eravacycline:

- had a MIC_{90} against *B. fragilis*, the most prevalent anaerobe in human infections, of 1 μg/mL, which was four times lower than tigecycline;
- had excellent activity against a wide range of Gram-positive and Gram-negative anaerobes; and
- provided broader coverage than the other antibiotics tested in the panel.

In addition, in the studies, many of the isolates from the *Bacteroides*, *Prevotella* and *Clostridium perfringens* species were vancomycin-resistant, and many of the isolates of the *Peptostreptococcus* spp. and *C. perfringens* species were metronidazole-resistant. Eravacycline showed strong activity against these isolates.

Other Indications

Subject to obtaining additional financing beyond this offering, we intend to pursue development of eravacycline for the treatment of additional indications, including hospital-acquired bacterial pneumonias and other serious and life-threatening infections following our development of eravacycline for the treatment of cIAI and cUTI.

We are also developing eravacycline as a potential empiric countermeasure for the treatment of disease caused by bacterial biothreat pathogens under funding from BARDA. In January 2012, BARDA awarded a five-year contract that provides a total of up to $67 million in funding for the development, manufacturing and clinical evaluation of eravacycline as a potential empiric countermeasure for respiratory diseases caused by biothreat and antibiotic-resistant public health pathogens, including *Francisella tularensis*, which causes tularemia, *Yersinia pestis*, which causes plague, and *Bacillus anthracis*, which causes anthrax disease, as well as bacterial pathogens associated with moderate-to-severe community-acquired bacterial pneumonia and other serious hospital infections. Under this program, we have conducted a number of *in vitro*, toxicology and animal

Table of Contents

studies to evaluate the efficacy of eravacycline against biothreat pathogens. Eravacycline has performed as well as, or better than, standard-of-care comparators in studies in murine respiratory infection models challenged with public health pathogens. In addition we have also completed a Phase 1 clinical trial assessing the bronchial pulmonary disposition, safety and tolerability of eravacycline, the first clinical assessment of its potential use for treating pneumonia.

We are collaborating with CUBRC because when we initially determined to seek government funding we recognized that we did not have any expertise in bidding for, or the administration and management of, government-funded contracts. CUBRC serves as the prime contractor under the BARDA Contract, primarily carrying out a program management and administrative role with additional responsibility for the management of certain preclinical studies. We serve as lead technical experts on all aspects of the BARDA Contract and serve as a subcontractor responsible for management of chemistry, manufacturing and control activities and clinical studies.

In connection with the BARDA Contract, in February 2012, we entered into with CUBRC a five-year cost-plus-fixed-fee subcontract under which we may receive funding of up to approximately $39.8 million, reflecting the portion of the BARDA funding that may be paid to us for our activities.

Although the BARDA Contract, and our subcontract with CUBRC under the BARDA Contract, have five-year terms, BARDA is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond current-year amounts from Congressionally approved annual appropriations. To the extent that BARDA ceases to provide funding of the program to CUBRC, CUBRC has the right to cease providing funding to us. Committed funding from CUBRC under our BARDA subcontract is $15.6 million from the initial contract date through April 30, 2015, of which $7.5 million had been received through June 30, 2013. If BARDA continues to support the program under the contract for the full five-year term, we believe BARDA funding for this program will be sufficient to provide the funds to advance eravacycline through enabling studies for an NDA, evaluation of efficacy in non-pivotal murine and non-human primate models challenged with biothreat pathogens and a Phase 2 clinical trial for the treatment of community-acquired bacterial pneumonia, commonly referred to as CABP.

Technology Platform

We believe that our proprietary chemistry technology, licensed from Harvard on an exclusive worldwide basis and enhanced at our company, represents a significant innovation in the creation of tetracycline drugs and has the potential to reinvigorate the clinical and market potential of the class.

The tetracycline class of antibiotics has been used successfully for more than 50 years. Unlike our tetracycline compounds, all tetracyclines on the market and under development of which we are aware are produced semi-synthetically, first in bacteria and then modified in a limited number of ways by available chemistry. These conventional methods have only been able to produce tetracycline antibiotics with limited chemical diversity, making it difficult for conventional technology to create tetracycline antibiotics that address a wide variety of multi-drug resistant bacteria. In part, because of the challenges in creating novel tetracycline molecules, only one tetracycline antibiotic has been developed and approved by the FDA for sale in the United States in the past 30 years.

By contrast, our proprietary technology makes it possible to create novel tetracycline antibiotics using a practical, fully synthetic process for what we believe is the first time. This fully synthetic process avoids the limitations of bacterially derived tetracyclines and allows us to chemically modify many positions in the tetracycline scaffold, including most of the positions that we believe could not practically be modified by any previous method. Using our proprietary chemistry technology, we can create a wider variety of tetracycline-based compounds than was previously possible, enabling us to pursue novel tetracycline derivatives for the treatment of multi-drug resistant bacteria that are

resistant to existing tetracyclines and other classes of antibiotic products.

Table of Contents

The diagram below illustrates the tetracycline core scaffold. Scaffold positions marked with dots have been modified to date using conventional chemistry to create either tetracycline drugs that have been marketed or drug candidates of which we are aware that are currently in development. Our fully synthetic process also allows for modification of the positions marked with dots, but with greater opportunity for substitution than is possible using conventional chemistry. The scaffold positions marked with stars in the diagram below indicate useful positions that we have modified through our fully synthetic process that could not practically be modified by conventional chemistry.

While the four positions on the bottom of the scaffold in the diagram above that are not marked with dots or stars can also be modified using our proprietary chemistry technology, these positions are involved in the binding of tetracyclines to the bacterial ribosome and, consequently, changes to these positions greatly reduce antibacterial activity of compounds. As a result, we are not pursuing compounds based on modifications of these positions.

We believe that our approach to tetracycline drug development provides us with strong intellectual property protection. We hold or have licensed rights under patents and patent applications that protect both our synthetic processes for developing tetracyclines and the compositions of matter of the individual compounds themselves. These include patents and patent applications directed towards the composition of matter for key intermediates like the enone used in the synthesis of eravacycline and our other product candidates. Unless a new synthetic method is created, we believe that, for the life of our intellectual property, our proprietary chemistry technology will be the only practical way of modifying the positions on the tetracycline core scaffold that have not been previously modified using conventional chemistry.

Our proprietary chemistry technology has allowed us to develop compounds that have been highly active in *in vitro* studies against tetracycline-resistant bacterial strains, including multi-drug resistant Gram-negative bacteria, and that have novel pharmacokinetic properties. To date, we have used our proprietary chemistry technology to create more than 3,000 new tetracycline derivatives that we believe could not be practically created with conventional methods. Our discovery program is focused on identifying novel compounds that will be effective against the toughest multi-drug resistant Gram-negative bacteria.

Table of Contents

Other Drug Development Programs

The following table sets forth our clinical and earlier-stage antibiotic compounds that we are developing for the treatment of serious and life-threatening infections and their status.

Candidate	Indication	Status
Eravacycline	cIAI (IV)	Phase 3 started third quarter of 2013
	cUTI (IV/oral)	Phase 3 to begin fourth quarter of 2013
	Pneumonia (IV)	Phase 1
TP-834	CABP (IV/oral)	IND-enabling studies completed
TP-271	Bacterial biothreats	IND-enabling studies ongoing
Pseudomonas/Gram - ve Program	Multi-drug resistant Gram-negative infections	Preclinical

TP-834

We synthesized TP-834 using our proprietary chemistry technology. In preclinical studies evaluating the *in vitro* potency of TP-834, the compound demonstrated broad coverage of the spectrum of pathogens associated with CABP and ABSSSI. In these studies, the pathogens covered included *S. pneumoniae*, *H. influenzae*, *S. pyogenes*, *M. catarrhalis* and MRSA, and TP-834 s spectrum compared well with clarithromycin, Zyvox, Levaquin and most drugs currently under development for CABP and ABSSSI. In studies in non-human primates, TP-834 was well-absorbed orally. We have completed most investigational new drug application, or IND, enabling studies on the compound. Any further efforts by us with respect to TP-834 will be subject to the availability of resources not allocated to our development of eravacycline.

TP-271

TP-271 is a fully synthetic broad-spectrum preclinical compound that we are developing for respiratory diseases caused by bacterial biothreat pathogens under funding provided by NIAID. We are collaborating with CUBRC on the TP-271 program funded by NIAID.

We created TP-271 using our proprietary chemistry technology. In doing so, we made modifications to the tetracycline scaffold that were designed to improve potency and effectiveness against a broader spectrum of bacteria as compared to tetracycline and doxycycline, which are currently used for the treatment of pneumonia and other respiratory ailments.

In our development program for TP-271, we have conducted a number of *in vitro*, toxicology and animal studies to evaluate the efficacy of TP-271 against biothreat pathogens. TP-271 has performed as well as, or better than, standard-of-care comparators in studies in murine respiratory infection models challenged with public health pathogens. In susceptibility studies, TP-271 also demonstrated broad-spectrum activity against NIAID Category A and B public health bacterial pathogens including *Francisella tularensis*, *Yersinia pestis*, *Burkholderia mallei*, *Burkholderia pseudomallei*, *Bacillus anthracis*, and NIAID Category C public health bacterial pathogens (*in vitro* and *in vivo*) that are associated with CABP, including *Streptococcus pneumoniae*, including multi-drug resistant *pneumococci*, *Staphylococcus aureus* (methicillin-susceptible and methicillin-resistant), *Haemophilus influenzae*, *Moraxella catarrhalis* and *Legionella pneumophila*, including strains that are tetracycline-resistant.

Funding for TP-271 is covered by two awards from NIAID. The first award is a grant awarded in July 2011 that provides up to approximately $2.8 million in funding over five years, which we refer to as the NIAID Grant. The second award is a contract awarded to CUBRC in September 2011 that provides up to approximately $35.8 million in funding over five years. The NIAID Grant and the NIAID Contract each support the development, manufacturing and clinical evaluation of TP-271 for respiratory diseases caused by biothreat and antibiotic-resistant public health pathogens, including *Francisella tularensis, Yersinia pestis* and *Bacillus anthracis*, as well as bacterial pathogens associated with community-acquired bacterial pneumonia.

Table of Contents

We are collaborating with CUBRC because when we initially determined to seek government funding we recognized that we did not have any expertise in bidding for, or the administration and management of, government-funded contracts. CUBRC serves as the prime contractor under the NIAID awards, primarily carrying out a program management and administrative role, though also with responsibility for the management of certain preclinical studies under the NIAID Contract. We serve as lead technical experts on all aspects of the NIAID Grant and NIAID Contract and serve as a subcontractor responsible for management of chemistry, manufacturing and control activities and clinical studies.

In connection with the NIAID Contract, in October 2011, we entered into with CUBRC a five-year cost-plus-fixed-fee subcontract under which we may receive funding of up to approximately $13.3 million, reflecting the portion of the NIAID Contract funding that may be paid to us for our activities. In connection with the NIAID Grant, in November 2011, CUBRC awarded us a 55-month, no-fee subaward of approximately $980,000 reflecting the portion of the NIAID Grant funding that may be paid to us for our activities.

Although the NIAID Contract, and our subcontract with CUBRC under the NIAID Contract, have five-year terms, NIAID is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond September 30, 2016. To the extent NIAID ceases to provide funding of the programs to CUBRC, CUBRC has the right to cease providing funding to us. Committed funding from CUBRC under our subcontract with respect to the NIAID Contract is $7.5 million, of which $3.4 million had been received through June 30, 2013. In addition, although the NIAID Grant has a term of five years and our subaward from CUBRC has a term of 55 months, NIAID is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond May 31, 2016. To the extent NIAID ceases to provide funding of the programs to CUBRC, CUBRC has the right to cease providing funding to us. Committed funding from CUBRC under our subaward with respect to the NIAID Grant is $0.7 million from the initial grant date through May 31, 2016, of which $0.4 million had been received through June 30, 2013. If NIAID continues to support the program for the full term, we believe NIAID funding for our TP-271 program will provide funding sufficient to advance TP-271 through IND-enabling studies, determination of efficacy in non-pivotal murine and non-human primate models challenged with biothreat pathogens, filing intravenous and oral IND and performing Phase 1 single and multiple-ascending dose clinical trials.

***Pseudomonas*/Gram-negative Program**

The only major class of pathogenic bacteria not covered by eravacycline and TP-271 is the Pseudomonas species. Pseudomonas bacteria have not been previously treatable by tetracycline-derived antibiotics, and resistance of Pseudomonas bacteria to other existing antibiotics has been increasing. We are using our proprietary chemistry technology to pursue the discovery and development of tetracycline-derived compounds effective against this class of bacteria. We have identified several series of tetracycline derivatives that have demonstrated activity in in vitro studies and animal models against Pseudomonas bacteria in comparison to Merrem and Tygacil, while also demonstrating coverage of a variety of Gram-negative bacteria, including Proteus mirabilis, Enterobacter cloacae, Klebsiella pneumoniae, Acinetobacter baumanni and Escherichia coli. We are trying to enhance the potency of these compounds against multi-drug resistant Gram-negative bacteria including Pseudomonas. Any efforts by us with respect to this program will be subject to the availability of resources not allocated to our development of eravacycline.

Commercialization Strategy

Our commercialization strategy is to develop our product candidates into leading therapies that will be available worldwide for the treatment of serious multi-drug resistant infections. We have retained worldwide commercial rights to all of our product candidates. We intend to retain control over the commercial execution of each of our product candidates in the United States.

We are currently developing our lead product candidate, eravacycline, as a broad-spectrum intravenous and oral antibiotic for use as a first-line empiric monotherapy for the treatment of serious and life-threatening

Table of Contents

infections, including a wide variety of multi-drug resistant infections. Assuming the successful completion of clinical trials and receipt of regulatory approvals, we intend to directly commercialize eravacycline in the United States. We currently have limited marketing capabilities and no sales or distribution capabilities. We intend to build a commercial organization in the United States and recruit experienced marketing, sales and medical education professionals and to develop a commercial strategy to target institutions with the greatest use of drugs for multi-drug resistant serious and life-threatening infections. We expect that our sales force will focus on educating hospital and institution-based physicians, nurses, pharmacy directors and payers about the benefits of eravacycline for the product s approved indications.

If we complete our planned Phase 3 clinical trials of eravacycline when we anticipate and the trials are successful, we expect to submit an NDA to the FDA in the second half of 2015 and an MAA to the EMA in the first half of 2016. Our current plan is to develop and commercialize eravacycline outside the United States with collaborators.

Manufacturing and Supply

We do not own or operate manufacturing facilities for the production of any of our product candidates, nor do we have plans to develop our own manufacturing operations in the foreseeable future. All of our product candidates are organic compounds of low molecular weight, commonly referred to as small molecules. They are manufactured in a fully synthetic process from readily available starting materials. As a result, we believe that our use of synthetic process will enable us to have a cost of manufacturing for our product candidates that is sufficiently low to enable us to sell our product candidates, when and if approved, for a cost that is similar to other hospital-based antibiotics.

We currently rely on a limited number of third-party contract manufacturers for all of our required raw materials, drug substance and finished product for our preclinical research and clinical trials. We do not have long-term agreements with any of these third parties. We also do not have any current contractual relationships for the manufacture of commercial supplies of any of our product candidates after they are approved. If any of our products are approved by any regulatory agency, we intend to enter into agreements with third-party contract manufacturers for the commercial production of those products. We currently employ internal resources to manage our manufacturing.

Intellectual Property

We strive to protect the proprietary technology that we believe is important to our business, including seeking and maintaining patents intended to cover our product candidates and compositions, their methods of use and processes for their manufacture and any other inventions that are commercially important to the development of our business. We also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

Our success will significantly depend on our ability to obtain and maintain patent and other proprietary protection for commercially important technology and inventions and know-how related to our business, defend and enforce our patents, preserve the confidentiality of our trade secrets and operate without infringing the valid and enforceable patents and proprietary rights of third parties. We also rely on know-how and continuing technological innovation to develop and maintain our proprietary position.

As of September 30, 2013, we owned two U.S. patents, six foreign patents, eight pending U.S. patent applications, one pending international application filed under the Patent Cooperation Treaty and 46 pending foreign patent applications in Europe and 17 other jurisdictions. In addition we have exclusively licensed from Harvard University rights under five U.S. patents, eleven foreign patents, three pending U.S. patent applications and 24 pending foreign patent applications in Europe and ten other jurisdictions. Certain of our patents and patent applications are directed to the

composition of matter and use of eravacycline and applications are pending in the United States, Europe, Japan and other countries.

Table of Contents

Tetraphase-Owned Intellectual Property Relating to Eravacycline and Other Compounds Under Development

We have patent applications directed to the composition of matter and use of eravacycline and other fluorocyclines, such as TP-271, pending in the United States, Europe, Japan and other countries. Patents specific to the composition and use of eravacycline have been granted in Europe, Australia, Mexico, New Zealand and Singapore. The granted patents have an expiration date of August 7, 2029, as will any patents that may issue from the pending applications absent any term extensions or adjustments that may be available. We have also filed patent applications directed to the composition of matter and use of TP-834. Any patents that may issue from these pending applications will have an expiration date no earlier than 2031.

We have also filed patent applications directed to the composition of matter and use of various derivatives of tetracycline and pentacycline (a tetracycline scaffold extended to five rings) in the United States, Europe and other foreign countries. Any patents that might issue from these pending applications will have an expiration date no earlier than 2030, with some expiration dates as late as 2033.

Exclusively Licensed Intellectual Property Relating to Our Proprietary Chemistry Technology

The patents and patent applications that we exclusively license from Harvard provide patent protection for the proprietary chemistry technology used in our fully synthetic process to make eravacycline and other tetracycline derivatives. The key intermediates that enable our fully synthetic process are commonly referred to as enone intermediates. The licensed patents and patent applications are directed towards the composition of matter of enone intermediates and compounds used to make the enone intermediates, referred to as key precursors, as well as synthetic routes to those enone intermediates, precursors and our tetracycline derivatives under development.

Composition of matter for the enone intermediates and precursors used in preparing the enone intermediates, as well as methods of making the precursors and enone intermediates are covered by the U.S. patents we license from Harvard, which will expire no earlier than 2027, taking into consideration patent term adjustment. Corresponding patent applications have been filed in foreign jurisdictions and any patents that have issued and might issue from these applications expire or will expire no earlier than 2025.

Exclusively Licensed Intellectual Property Relating to Pentacycline and Tetracycline Derivatives

Our license from Harvard also includes patent applications directed to the composition of matter and use of other novel tetracycline or pentacycline derivatives. These applications are pending in the United States, Europe and other countries. Any patents that might issue from these pending applications will have an expiration date no earlier than 2027.

The term of individual patents depends upon the legal term for patents in the countries in which they are obtained. In most countries, including the United States, the patent term is 20 years from the earliest filing date of a non-provisional patent application. In the United States, a patent s term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the U.S. Patent and Trademark Office in examining and granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier filed patent. The term of a patent that covers a drug, biological product or medical device approved pursuant to a pre-market approval, or PMA, may also be eligible for patent term extension when FDA approval is granted, provided statutory and regulatory requirements are met. The length of the patent term extension is related to the length of time the drug is under regulatory review while the patent is in force. 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 date set for the patent. Patent extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of

product approval, only one patent applicable to each regulatory review period may be granted an extension and only those claims reading on the approved drug are extended. Similar provisions are available in Europe and other foreign jurisdictions to extend the term of a patent that covers an approved drug.

Table of Contents

We rely, in some circumstances, on trade secrets to protect our unpatented technology. However, trade secrets can be difficult to protect. We seek to protect our trade secrets and proprietary technology and processes, in part, by confidentiality agreements with our employees, consultants, scientific advisors and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached. We may not have adequate remedies for any breach and could lose our trade secrets through such a breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our consultants, contractors or collaborators use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting trade secrets, know-how and inventions.

License Agreement

On August 3, 2006, we entered into a license agreement with The President and Fellows of Harvard College, under which Harvard granted us an exclusive worldwide license under specified Harvard patent rights to develop and commercialize tetracycline-based products such as eravacycline. Under the license agreement, we also have the right to expand the patent rights subject to the license to include improvement patents that may be owned by Harvard in the future and that meet specified criteria by paying to Harvard an additional license issuance fee in an amount to be agreed between Harvard and us. We also have a right of negotiation to expand the license to include additional patents relating to tetracycline chemistry within a specified category that may be owned by Harvard in the future, including patents covering inventions made by Andrew Myers, Ph.D., our scientific founder, under his consulting agreement with us. Since entering into the license agreement, we have entered into amendments to the license agreement pursuant to which we expanded the patent rights subject to the license in accordance with these rights. Under the license agreement, we are obligated to satisfy diligence requirements, including using commercially reasonable efforts to develop and commercialize licensed compounds and to implement a specified development plan, meeting specified development milestones and providing an update on progress on an annual basis. Our license grant from Harvard is subject to academic rights retained by Harvard and United States government rights and obligations that are customary in patent license agreements with universities in the United States.

In consideration for the rights granted to us by Harvard under the license agreement, we have paid Harvard an aggregate of $3.7 million in upfront license fees and development milestone payments, and issued 31,379 shares of our common stock to Harvard. In addition, we have agreed to make payments to Harvard upon the achievement of specified future development and regulatory milestones totaling up to $15.1 million per licensed product ($3.1 million of which has already been paid with respect to eravacycline), and to pay tiered royalties in the single digits based on annual worldwide net sales, if any, of licensed products by us, our affiliates and sublicensees. We are also obligated to pay Harvard a specified share of non-royalty sublicensing revenues that we receive from sublicensees for the grant of sublicenses under the license and to reimburse Harvard for specified patent prosecution and maintenance costs.

The license agreement expires on a licensed product-by-licensed product and country-by-country basis upon the expiration of the last-to-expire patent covering the applicable product in the applicable country that is included in the license. Harvard may terminate the license agreement based on our uncured material breach or insolvency or bankruptcy. We have the right to terminate the license agreement for any or no reason at any time on sixty (60) days prior written notice to Harvard.

Government Contracts

Eravacycline

Our program to develop eravacycline for the treatment of disease caused by bacterial biothreat pathogens is funded by BARDA through a five-year contract that provides a total of up to $67 million in funding that BARDA

awarded to CUBRC in January 2012. The contract contemplates that CUBRC will collaborate with us on the development, manufacturing and clinical evaluation of a novel broad-spectrum tetracycline antibiotic with potential as an empiric countermeasure for respiratory diseases caused by biothreat and antibiotic-resistant public health pathogens, including *Francisella tularensis*, which causes tularemia, *Yersinia pestis*, which causes plague, and *Bacillus anthracis*, which causes anthrax disease, as well as bacterial pathogens associated with moderate-to-severe CABP and other serious hospital infections. In connection with the BARDA Contract, in February 2012, we entered into a five-year cost-plus-fixed-fee subcontract with CUBRC under which we may receive funding of up to approximately $39.8 million, reflecting the portion of the BARDA funding that may be paid to us for our activities.

We collaborated with CUBRC in seeking government funding of this development program because we did not have any expertise in bidding for, or the administration and management of, government-funded contracts. Because CUBRC had the expertise to manage and administer awards issued by government funding agencies, we agreed with CUBRC that CUBRC would serve as the prime contractor under the BARDA Contract, primarily carrying out a program management and administrative role with additional responsibility for the management of certain preclinical studies. We serve as lead technical experts on all aspects of the BARDA Contract and serve as a subcontractor of CUBRC responsible for management of chemistry, manufacturing and control activities and clinical studies. The flow of funds under this arrangement follows the respective activities being conducted by us and by CUBRC, with funds being paid to us under our subcontract with CUBRC reflecting payment for our activities.

We have agreed upon a research plan with CUBRC detailing the activities to be conducted by CUBRC and by us. In addition to our obligations to conduct the activities provided for by the research plan, we are also obligated under the CUBRC subcontract to satisfy various federal reporting requirements, extending to technical reporting with respect to our activities, reporting with respect to intellectual property and financial reporting.

Payments under our subcontract with CUBRC are made in installments as activities are conducted in accordance with the research plan. Payments are based on direct and indirect costs incurred plus fixed fees, where applicable.

Under the subcontract, CUBRC s use of our eravacycline data is expressly limited to purposes of performing CUBRC s obligations under the BARDA Contract, and CUBRC and its other subcontractors must assign to us, subject to government rights, all intellectual property rights relating to our compounds and related data that arise from the project. Under standard government contracting terms, the government receives only limited rights for government use of certain of our pre-existing data and certain data produced with non-federal funding, to the extent such data are required for delivery to BARDA under the project. The government receives unlimited rights to use and disclose new data first produced under the project with BARDA funding, and the government is entitled to at least a nonexclusive, worldwide, royalty-free license to practice or have practiced any patent on an invention that is conceived or first reduced to practice under the project.

BARDA is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond current-year amounts from Congressionally approved annual appropriations, and CUBRC has a right to terminate its subcontract with us only to the extent that BARDA first cancels the corresponding portions of CUBRC s prime contract.

We retain a right to terminate CUBRC s rights to use eravacycline. Permissible grounds for such termination of CUBRC s rights include but are not limited to the sale of our assets relating to the project, an acquisition of us or our granting an exclusive or partially exclusive license to use eravacycline to a licensee that declines to continue CUBRC s license rights. In such an event, the subcontract may be terminated upon CUBRC s negotiation of a corresponding termination of CUBRC s obligations to BARDA.

106

Table of Contents

TP-271

Our program to develop TP-271 is funded by NIAID through the NIAID Grant, a grant awarded in July 2011 that provides up to approximately $2.8 million in funding over five years, and the NIAID Contract, a separate a five-year contract that provides up to $35.8 million in funding that NIAID awarded to CUBRC in October 2011. The NIAID Contract contemplates that CUBRC will collaborate with us on the development, manufacturing and clinical evaluation of a novel broad-spectrum tetracycline antibiotic for respiratory diseases caused by biothreat and antibiotic-resistant public health pathogens, including *Francisella tularensis*, *Yersinia pestis* and *Bacillus anthracis*, as well as bacterial pathogens associated with CABP.

In connection with the NIAID Contract, in October 2011, we entered into a five-year cost-plus-fixed-fee subcontract with CUBRC under which we may receive funding of up to approximately $13.3 million, reflecting the portion of the NIAID Contract funding that may be paid to us for our activities. In connection with the NIAID Grant, in November 2011, CUBRC awarded us a 55-month, no-fee subaward of approximately $980,000 reflecting the portion of the NIAID Grant funding that may be paid to us for our activities.

We collaborated with CUBRC in seeking government funding of this development program because we did not have any expertise in bidding for, or the administration and management of, government-funded contracts. Because CUBRC had the expertise to manage and administer awards issued by government funding agencies, we agreed with CUBRC that CUBRC would serve as the prime contractor under the NIAID Contract, primarily carrying out a program management and administrative role with additional responsibility for the management of certain preclinical studies. We serve as lead technical experts on all aspects of the NIAID Contract and serve as a subcontractor of CUBRC responsible for management of chemistry, manufacturing and control activities and clinical studies. The flow of funds under this arrangement follows the respective activities being conducted by us and by CUBRC, with funds being paid to us under our subcontract with, and subaward from, CUBRC reflecting payment for our activities.

We have agreed upon a research plan with CUBRC detailing the activities to be conducted by CUBRC and by us. In addition to our obligations to conduct the activities provided for by the research plan, we are also obligated under the CUBRC subcontract to satisfy various federal reporting requirements, extending to technical reporting with respect to our activities, reporting with respect to intellectual property and financial reporting.

Payments under our subcontract with CUBRC are made in installments as activities are conducted in accordance with the research plan. Payments are based on direct and indirect costs incurred plus fixed fees, where applicable.

Under the subcontract, CUBRC s use and disclosure of our proprietary data pertaining to the project are expressly subject to a separate confidentiality agreement between CUBRC and us. CUBRC and its other subcontractors or subawardees must assign to us, subject to government rights, all intellectual property rights relating to our compounds and related data that arise from the project. Under standard government contracting terms and grant conditions, the government is entitled to at least a nonexclusive, worldwide, royalty-free license to practice or have practiced any patent on an invention that is conceived or first reduced to practice under the project.

NIAID is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond September 30, 2016 in the case of the NIAID Contract and May 31, 2016 in the case of the NIAID Grant, and CUBRC has a right to terminate its subcontract with, or subaward to, us only to the extent that NIAID first cancels the corresponding portions of CUBRC s prime contract or award.

We retain rights to terminate the subcontract if CUBRC breaches the subcontract, subject in certain cases to CUBRC s failure to cure such breach, or by written notice to CUBRC, effective upon CUBRC s negotiation of a corresponding

termination of CUBRC s obligations to NIAID.

Table of Contents

Competition

The biopharmaceutical industry is characterized by intense competition and rapid innovation. Our potential competitors include large pharmaceutical and biotechnology companies, specialty pharmaceutical companies and generic drug companies. Many of our potential competitors have substantially greater financial, technical and human resources than we do, as well as greater experience in the discovery and development of product candidates, obtaining FDA and other regulatory approvals of products and the commercialization of those products. Accordingly, our potential competitors may be more successful than us in obtaining FDA approval for drugs and achieving widespread market acceptance. Our potential competitors drugs may be more effective, or more effectively marketed and sold, than any product candidate we may commercialize and may render our product candidates obsolete or non-competitive before we can recover the expenses of their development and commercialization. We anticipate that we will face intense and increasing competition as new drugs enter the market and advanced technologies become available. Finally, the development of new treatment methods for the diseases we are targeting could render our product candidates non-competitive or obsolete.

We believe the key competitive factors that will affect the development and commercial success of our most advanced product candidate, eravacycline, if approved, will be efficacy, coverage of drug-resistant strains of bacteria, safety and tolerability profile, reliability, convenience of dosing, including capability for intravenous-to-oral step-down, price, availability of reimbursement from governmental and other third-party payers and susceptibility to drug resistance.

We are developing eravacycline as a broad-spectrum intravenous and oral antibiotic for use as a first-line empiric monotherapy for the treatment of multi-drug resistant infections, including multi-drug resistant Gram-negative infections. If approved, eravacycline would compete with a number of currently marketed antibiotics, including meropenem, which is marketed by AstraZeneca as Merrem, imipenem/cilastatin, which is marketed by Merck as Primaxin, tigecycline, which is marketed by Pfizer as Tygacil, levofloxacin, which is marketed by Ortho-McNeil and Johnson & Johnson as Levaquin, and piperacillin/tazobactam, which is marketed by Pfizer as Zosyn, as well as antibiotics currently in Phase 3 development, including ceftazidime/avibactam, which is being developed by AstraZeneca, and cefalozine/tazobactam, which is being developed by Cubist. We also expect that eravacycline, if approved, would compete with future generic versions of currently marketed antibiotics.

If approved, we believe that eravacycline would compete effectively against these compounds on the basis of:

- broad-spectrum activity against a wide variety of multi-drug resistant Gram-negative, Gram-positive and anaerobic bacteria;
- lower probability of drug resistance;
- a favorable safety and tolerability profile;
- a convenient dosing regimen; and
- potentially, convenient intravenous-to-oral step-down.

Recent Changes in the Regulatory Landscape

The FDA s Anti-Infective Drugs Division has undergone evolution in recent years, primarily driven by concerns that increasingly less effective antibiotics may have been approved in the last 10 to 15 years and a desire to bring what they perceive to be greater statistical rigor to their analyses. The impact of this was a rethinking of how antibiotic efficacy is measured in clinical trials, and a review of the statistical tools used to analyze the data. In February 2012, the FDA published a draft guidance entitled Guidance for Industry Complicated Urinary Tract Infections: Developing Drugs for Treatment and in September 2012, it published a draft guidance entitled Guidance for Industry Complicated Intra-Abdominal Infections: Developing Drugs for Treatment. The purpose of these guidelines was to address any uncertainties regarding what the FDA expected from sponsors and clinical trials for the indications of cUTI and cIAI. The FDA asked sponsors to include

Table of Contents

additional measurements in their evaluation of efficacy that the FDA believes are more objective and less susceptible to interpretation by investigators.

Government Regulation and Product Approval

Government authorities in the United States, at the federal, state and local level, and in other countries extensively regulate, among other things, the research, development, testing, manufacture, including any manufacturing changes, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, import and export of pharmaceutical products such as those we are developing. The processes for obtaining regulatory approvals in the United States and in foreign countries, along with subsequent compliance with applicable statutes and regulations, require the expenditure of substantial time and financial resources.

U.S. Government Regulation

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations requires 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 a variety of administrative or judicial sanctions, such as the FDA s refusal to approve pending NDAs, withdrawal of an approval, imposition of a clinical hold, issuance of 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.

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 compliance with the FDA s good laboratory practice, or GLP, 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 practices, or GCP, to establish the safety and efficacy of the proposed drug product for each indication;
- 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 product is produced to assess compliance with current good manufacturing practices, or cGMP, and 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.

Preclinical Studies

Preclinical studies include laboratory evaluation of product chemistry, toxicity and formulation, as well as animal studies to assess potential safety and efficacy. An IND sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data and any available clinical data or literature, among other things, to the FDA as part of an IND. Some preclinical testing may continue even after the IND is submitted. An IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to one or more proposed clinical trials and places the clinical trial on a

Table of Contents

clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in the FDA allowing clinical trials to commence.

Clinical Trials

Clinical trials involve the administration of the investigational new drug to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include the requirement that all research subjects provide their informed consent in writing for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. In addition, an IRB at each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on their www.clinicaltrials.gov website.

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

Phase 1: The drug is initially introduced into healthy human subjects or patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early indication of its effectiveness.

Phase 2: The drug is administered to 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 optimal dosage.

Phase 3: The drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically evaluate the efficacy and safety of the product for approval, to establish the overall risk-benefit profile of the product, and to provide adequate information for the labeling of the product.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, or at all. Furthermore, the FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects 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.

Special Protocol Assessment

The special protocol assessment, or SPA, process is designed to facilitate the FDA s review and approval of drugs by allowing the FDA to evaluate the proposed design and size of Phase 3 clinical trials that are intended to form the primary basis for determining a drug product s efficacy. Upon specific request by a clinical trial sponsor, the FDA will evaluate the protocol and respond to a sponsor s questions regarding, among other things, primary efficacy endpoints, trial conduct and data analysis, within 45 days of receipt of the request.

The FDA ultimately assesses whether the protocol design and planned analysis of the trial are acceptable to support regulatory approval of the product candidate with respect to effectiveness of the indication studied. All agreements

and disagreements between the FDA and the sponsor regarding an SPA must be clearly documented in an SPA letter or the minutes of a meeting between the sponsor and the FDA.

Table of Contents

Even if the FDA agrees to the design, execution and analyses proposed in protocols reviewed under the SPA process, the FDA may revoke or alter its agreement under the following circumstances:

- public health concerns emerge that were unrecognized at the time of the protocol assessment, or the director of the review division determines that a substantial scientific issue essential to determining safety or efficacy has been identified after testing has begun;
- a sponsor fails to follow a protocol that was agreed upon with the FDA; or
- the relevant data, assumptions, or information provided by the sponsor in a request for SPA change, are found to be false statements or misstatements, or are found to omit relevant facts.

A documented SPA may be modified, and such modification will be deemed binding on the FDA review division, except under the circumstances described above, if FDA and the sponsor agree in writing to modify the protocol and such modification is intended to improve the study.

Marketing Approval

Assuming successful completion of the required clinical testing, the results of the preclinical and clinical studies, together with detailed information relating to the product s chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of an NDA requesting approval to market the product for one or more indications. In most cases, the submission of an NDA is subject to a substantial application user fee. 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.

In addition, under the Pediatric Research Equity Act of 2003, or PREA, as amended and reauthorized, certain NDAs or supplements to an NDA must contain data that are adequate to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements.

Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation. Our product candidates are not designated as orphan drugs.

The FDA also may require submission of a risk evaluation and mitigation strategy, or REMS, plan to mitigate any identified or suspected serious risks. The REMS plan could include medication guides, physician communication plans, assessment plans, and elements to assure safe use, such as restricted distribution methods, patient registries, or other risk minimization tools.

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 application must be resubmitted with the

additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews an NDA to determine, among other things, whether the drug is safe and effective and whether the facility in which it is manufactured, processed, packaged or held meets standards designed to assure the product s continued safety, quality and purity.

The FDA is required to refer an application for a novel drug to an advisory committee or explain why such referral was not made. An advisory committee is a panel of independent experts, including clinicians and other

Table of Contents

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 typically 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 will typically inspect one or more clinical trial sites to assure compliance with GCP.

The FDA generally accepts data from foreign clinical trials in support of an NDA if the trials were conducted under an IND. If a foreign clinical trial is not conducted under an IND, the FDA nevertheless may accept the data in support of an NDA if the study was conducted in accordance with GCPs and the FDA is able to validate the data through an on-site inspection, if deemed necessary. Although the FDA generally requests that marketing applications be supported by some data from domestic clinical studies, the FDA may accept foreign data as the sole basis for marketing approval if (1) the foreign data are applicable to the U.S. population and U.S. medical practice, (2) the studies were performed by clinical investigators with recognized competence, and (3) the data may be considered valid without the need for an on-site inspection or, if the FDA considers the inspection to be necessary, the FDA is able to validate the data through an on-site inspection or other appropriate means.

The testing and approval process for an NDA requires substantial time, effort and financial resources, and each may take several years to complete. Data obtained from preclinical and clinical testing are not always conclusive and may be susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. The FDA may not grant approval on a timely basis, or at all.

After evaluating the NDA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a complete response letter. A complete response letter generally contains a statement of specific conditions that must be met in order to secure final approval of the NDA and may require additional clinical or preclinical testing in order for FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA s satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications.

Even if the FDA approves a product, it may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a drug s safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution and use restrictions or other risk management mechanisms under a REMS which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes, and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Special FDA Expedited Review and Approval Programs

The FDA has various programs, including fast track designation, accelerated approval and priority review, that are intended to expedite or simplify the process for the development and FDA review of drugs that are intended for the

treatment of serious or life threatening diseases or conditions and demonstrate the potential to address unmet medical needs. The purpose of these programs is to provide important new drugs to patients earlier than under standard FDA review procedures.

Table of Contents

To be eligible for a fast track designation, the FDA must determine, based on the request of a sponsor, that a product is intended to treat a serious or life threatening disease or condition and demonstrates the potential to address an unmet medical need, or if the drug qualifies as a qualified infectious disease product under the recently enacted Generating Antibiotic Incentives Now, or GAIN Act. The FDA will determine that a product will fill an unmet medical need if it will provide a therapy where none exists or provide a therapy that may be potentially superior to existing therapy based on efficacy or safety factors. We have not requested fast track designation for any of our product candidates.

The FDA may give a priority review designation to drugs that offer major advances in treatment, or provide a treatment where no adequate therapy exists. A priority review means that the goal for the FDA to review an application is six months, rather than the standard review of ten months under current PDUFA guidelines. Under the new PDUFA agreement, these six and ten month review periods are measured from the filing date rather than the receipt date for NDAs for new molecular entities, which typically adds approximately two months to the timeline for review and decision from the date of submission. Most products that are eligible for fast track designation are also likely to be considered appropriate to receive a priority review.

In addition, products studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval and may be approved on the basis of adequate and well-controlled clinical trials establishing that the drug 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 a sponsor of a drug receiving accelerated approval to perform post-marketing studies to verify and describe the predicted effect on irreversible morbidity or mortality or other clinical endpoint, and the drug may be subject to accelerated withdrawal procedures.

Moreover, under the provisions of the new Food and Drug Administration Safety and Innovation Act, or FDASIA, enacted in 2012, a sponsor can request designation of a product candidate as a breakthrough therapy. A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Drugs designated as breakthrough therapies are also eligible for accelerated approval. The FDA must take certain actions, such as holding timely meetings and providing advice, intended to expedite the development and review of an application for approval of a breakthrough therapy.

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.

Post-Approval Requirements

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims are subject to prior FDA review and approval. There also are continuing, annual user fee requirements for any marketed products and the establishments at which such products are manufactured, as well as new application fees for supplemental applications with clinical data.

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.

Table of Contents

In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies, and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market.

Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in mandatory revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label. 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 liability.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act, or PDMA, which regulates the distribution of drugs and drug samples at the federal level, and sets minimum standards for the registration and regulation of drug distributors by the states. Both the PDMA and state laws limit the distribution of prescription pharmaceutical product samples and impose requirements to ensure accountability in distribution.

Exclusivity and Approval of Competing Products

Hatch-Waxman Exclusivity

Market and data exclusivity provisions under the FDCA can delay the submission or the approval of certain applications for competing products. The FDCA provides a five-year period of non-patent data exclusivity within the United States to the first applicant to gain 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 activity of the drug substance. We believe that eravacycline and our other product candidates are new chemical entities. During the exclusivity period, the FDA may not accept for review an abbreviated new drug application, or ANDA, or a 505(b)(2) NDA submitted by another company that references the previously approved drug. However, an ANDA or 505(b)(2) NDA may be submitted after four years if it contains a certification of patent invalidity or non-infringement. The FDCA also provides three years of marketing exclusivity for an NDA, 505(b)(2) NDA, or supplement to an existing NDA or 505(b)(2) NDA if

Table of Contents

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 or supplement. Three year exclusivity may be awarded for changes to a previously approved drug product, such as new indications, dosages, strengths or dosage forms of an existing drug. This three-year exclusivity covers only the conditions of use associated with the new clinical investigations and, as a general matter, does not prohibit the FDA from approving ANDAs or 505(b)(2) NDAs for generic versions of the original, unmodified drug product. 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. For drug products that contain an antibiotic ingredient approved prior to 1997, such as tetracycline, the statute imposes certain limitations on the award of non-patent exclusivity. However, we do not believe these limitations would apply to eravacycline or any of our other investigational antibiotics.

Qualified Infectious Disease Product Exclusivity

Under the GAIN provisions of FDASIA, which was signed into law in July 2012, the FDA may designate a product as a qualified infectious disease product, or QIDP. In order to receive this designation, a drug must qualify as an antibacterial or antifungal drug for human use intended to treat serious or life-threatening infections, including those caused by either (1) an antibacterial or antifungal resistant pathogen, including novel or emerging infectious pathogens, or (2) a so-called qualifying pathogen found on a list of potentially dangerous, drug-resistant organisms to be established and maintained by the FDA under the new law. A sponsor must request such designation before submitting a marketing application. We obtained a QIDP designation for the intravenous formulation of eravacycline for cUTI and cIAI in July 2013 and expect to request QIDP designations for our other product candidates prior to submitting a marketing application for such product candidates, as appropriate.

Upon approving an application for a qualified infectious disease product, the FDA will extend by an additional five years any non-patent marketing exclusivity period awarded, such as a five-year exclusivity period awarded for a new molecular entity. This extension is in addition to any pediatric exclusivity extension awarded, and the extension will be awarded only to a drug first approved on or after the date of enactment.

The GAIN provisions prohibit the grant of an exclusivity extension where the application is a supplement to an application for which an extension is in effect or has expired, is a subsequent application for a specified change to an approved product, or is an application for a product that does not meet the definition of qualified infectious disease product based on the uses for which it is ultimately approved.

Foreign Regulation

In addition to regulations in the United States, we will be subject to a variety of foreign regulations governing clinical trials and commercial sales and distribution of our products. Whether or not we obtain FDA approval for a product, we must obtain approval by the comparable regulatory authorities of foreign countries or economic areas, such as the European Union, before we may commence clinical trials or market products in those countries or areas. The approval process and requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary greatly from place to place, and the time may be longer or shorter than that required for FDA approval.

Under European Union regulatory systems, a company may submit marketing authorization applications either under a centralized or decentralized procedure. The centralized procedure, which is compulsory for medicinal products produced by biotechnology or those medicinal products containing new active substances for specific indications such as the treatment of AIDS, cancer, neurodegenerative disorders, diabetes, viral diseases and designated orphan medicines, and optional for other medicines which are highly innovative. Under the centralized procedure, a

marketing application is submitted to the European Medicines Agency where it will be evaluated by the Committee for Medicinal Products for Human Use and a favorable opinion typically results in

Table of Contents

the grant by the European Commission of a single marketing authorization that is valid for all European Union member states within 67 days of receipt of the opinion. The initial marketing authorization is valid for five years, but once renewed is usually valid for an unlimited period. The decentralized procedure provides for approval by one or more concerned member states based on an assessment of an application performed by one member state, known as the reference member state. Under the decentralized approval procedure, an applicant submits an application, or dossier, and related materials to the reference member state and concerned member states. The reference member state prepares a draft assessment and drafts of the related materials within 120 days after receipt of a valid application. Within 90 days of receiving the reference member state s assessment report, each concerned member state must decide whether to approve the assessment report and related materials. If a member state does not recognize the marketing authorization, the disputed points are eventually referred to the European Commission, whose decision is binding on all member states.

Coverage and Reimbursement

Sales of our products will depend, in part, on the extent to which our products will be covered and reimbursed by third-party payors, such as government health programs, including Medicare and Medicaid, commercial insurance and managed healthcare organizations. These third-party payors are increasingly reducing coverage and reimbursement amounts for medical products and services. Additionally, the containment of healthcare costs has become a priority of federal and state governments, and the prices of drugs have been a focus in this effort. The U.S. government, state legislatures and foreign governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on coverage and reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit our net revenue and results. Decreases in third-party reimbursement for our product candidates or a decision by a third-party payor to not cover our product candidates could reduce physician usage of the product candidate and have a material adverse effect on our sales, results of operations and financial condition.

In the United States, a number of recent legislative reform measures have been passed to contain healthcare reimbursement for pharmaceuticals, including drugs such as our product candidates. For example, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, known collectively as ACA, among other things, establishes annual fees to be paid by manufacturers for certain branded prescription drugs, requires manufacturers to participate in a discount program for certain outpatient drugs under Medicare Part D, increases manufacturer rebate responsibilities under the Medicaid Drug Rebate Program for outpatient drugs dispensed to Medicaid recipients, addresses 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 and expands oversight and support for the federal government s comparative effectiveness research of services and products. In addition, other legislative changes have been proposed and adopted since the ACA was enacted. We cannot predict the full impact of ACA or future reform measures on our operations.

In addition, in some foreign countries, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the European Union provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products. Historically, products launched in the European Union do not follow price structures of the United States and generally tend to be significantly lower.

116

Table of Contents

Other Healthcare Laws

Although we currently do not have any products on the market, if our drug candidates are approved and we begin commercialization, we may be subject to additional healthcare regulation and enforcement by the federal government and by authorities in the states and foreign jurisdictions in which we conduct our business. Such laws include, without limitation, state and federal anti-kickback, fraud and abuse, false claims, privacy and security and physician sunshine laws and regulations. If our operations are found to be in violation of any of such laws or any other governmental regulations that apply to us, we may be subject to penalties, including, without limitation, civil and criminal penalties, damages, fines, the curtailment or restructuring of our operations, exclusion from participation in federal and state healthcare programs and imprisonment, any of which could adversely affect our ability to operate our business and our financial results.

Legal Proceedings

We are not currently a party to any material legal proceedings.

Facilities

Our headquarters are located in Watertown, Massachusetts, where we occupy approximately 15,900 square feet of office and laboratory space. The term of the lease expires May 31, 2014.

Employees

As of September 30, 2013, we had 40 full-time employees, 29 of whom were primarily engaged in research and development activities. A total of 21 employees have an M.D. or Ph.D. degree. None of our employees is represented by a labor union and we consider our employee relations to be good.

Table of Contents

MANAGEMENT

Executive Officers, Directors and Key Employees

Our executive officers, directors and key employees, their current positions and their ages as of September 30, 2013 are set forth below:

Name	Age	Position(s)
Executive Officers		
Guy Macdonald	54	President and Chief Executive Officer, Director
David C. Lubner	49	Senior Vice President and Chief Financial Officer
Patrick T. Horn, M.D., Ph.D.	58	Chief Medical Officer
Joyce Sutcliffe, Ph.D.	61	Senior Vice President, Biology
Key Employees		
Magnus Ronn, Ph.D.	47	Vice President, Chemistry, Manufacturing and Control
Margaret M. Wasilewski, M.D.	56	Vice President, Clinical Development
Leland Webster, Ph.D.	50	Vice President, Business Development
Xiao-Yi Xiao, Ph.D.	48	Vice President, Medicinal Chemistry
Non-Employee Directors		
L. Patrick Gage, Ph.D.(1)(2)(3)	71	Director, Chairman of the Board of Directors
Garen Bohlin(1)	66	Director
John G. Freund, M.D.(1)(2)(3)	59	Director
Steven R. Gullans, Ph.D.(2)(3)	60	Director

(1) Member of finance and audit committee.
(2) Member of compensation committee.
(3) Member of nominating and corporate governance committee.

Executive Officers

Guy Macdonald has served as our President and Chief Executive Officer and a member of our board of directors since January 2008. From August 2003 until January 2008, Mr. Macdonald served as Executive Vice President, Operations, of Idenix Pharmaceuticals, Inc., a biopharmaceutical company. Prior to joining Idenix, he served in various positions at Merck & Co., Inc., a pharmaceutical company, from 1981 to 2003, most recently serving as the Vice President for Anti-Infective and Hospital Products. Mr. Macdonald currently serves as Chairman of the board of directors of Spring Bank Pharmaceuticals, Inc., a privately held company. Mr. Macdonald received an Honours Degree in biochemistry from Dundee University in Dundee, Scotland. We believe that Mr. Macdonald s detailed knowledge of our company and his 25 year career in the global pharmaceutical and biotechnology industries, including his roles at Idenix Pharmaceuticals and Merck & Co., provides a critical contribution to our board of directors.

David C. Lubner has served as our Senior Vice President and Chief Financial Officer since October 2010 and from our inception in 2006 until October 2010 he served on a part-time basis as our Senior Vice President and Chief Operating Officer. Mr. Lubner also served as Chief Financial Officer of Mediphase Venture Partners, a venture capital firm, from 2006 until October 2010. From 1999 to 2005, he served as Vice President and Chief Financial Officer at PharMetrics, Inc., a pharmacy and medical claims data informatics company, until its acquisition by IMS Health in

2005. Prior to joining PharMetrics, Mr. Lubner served as Vice President and Chief Financial Officer of ProScript, Inc., a biotechnology company, from 1996 to 1999. Mr. Lubner is a member of the American Institute of CPAs and is a certified public accountant in the Commonwealth of Massachusetts. Mr. Lubner received a B.S. in business administration from Northeastern University and an M.S. in Taxation from Bentley University.

Table of Contents

Patrick T. Horn, M.D., Ph.D. has served as our Chief Medical Officer since January 2011. From September 2007 until December 2010, he served as Vice President, Clinical & Medical Affairs at Dyax Corporation, a biopharmaceutical company. Prior to joining Dyax, Dr. Horn served in various positions at Abbott Laboratories, a pharmaceutical company, from 2001 to 2006, most recently serving as Medical Director, Head of Clinical Pharmacology. Dr. Horn received a B.S. in Chemistry from the University of Illinois, doctorate in the Pharmacological and Physiological Sciences from the University of Chicago and an M.D. from the University of Chicago, Pritzker School of Medicine.

Joyce Sutcliffe, Ph.D. has served as our Senior Vice President, Biology, since May 2009. From October 2007 until May 2009, Dr. Sutcliffe served as Vice President, Research at NanoBio Corporation, a biopharmaceutical company. From September 2001 until September 2007, Dr. Sutcliffe served as Chief Research Scientist and Vice President, Biology at Rib-X Pharmaceuticals, Inc., a biopharmaceutical company. Prior to joining Rib-X Pharmaceuticals, she held various positions at Pfizer, Inc., a pharmaceutical company, for 16 years. Dr. Sutcliffe received a B.S. in zoology from the University of Florida and a Ph.D. in microbiology from the University of Florida, Gainesville, and has held postdoctoral positions at the University of Massachusetts Medical School and the National Institutes of Health.

Key Employees

Magnus Ronn, Ph.D. has served as our Vice President, Chemistry, Manufacturing and Control since October 2009 and as our Senior Director for Chemistry, Manufacturing and Control since our inception in 2006 until September 2009. From 2001 to 2006, he served as a Scientist at increasing levels of responsibility within Process Chemistry Research & Development at Millennium Pharmaceuticals, Inc. (now a Takeda company), a pharmaceutical company. Prior to joining Millennium, Dr. Ronn was a scientist at Roche Colorado Corporation (now known as Corden Pharma Colorado, Inc.), a pharmaceutical manufacturing company. Dr. Ronn received a B.S. in chemistry and a Ph.D. in organic chemistry from the University of Uppsala, Sweden.

Margaret M. Wasilewski, M.D. has served as our Vice President, Clinical Development since August 2013. From 2003 to 2006, and again from 2009 until joining us, Dr. Wasilewski was President of ID Remedies LLC, a consulting firm providing comprehensive, infectious-disease focused physician consulting to the biopharmaceutical and venture capital industries. From 2006 to 2009, she served as Vice President of Clinical Development and Medical Science Team Leader at Targanta Therapeutics, Inc., where she led the teams responsible for the clinical development of oritavancin through to regulatory filings in the United States and Europe. Dr. Wasilewski served in a variety of roles at Eli Lilly and Company from 1996 to 2003 including Clinical Action Team Leader, Oritavancin Product Team Lead Physician, and Senior Clinical Research Physician, Infectious Disease. She holds a B.A. in chemistry from Douglass College, Rutgers University, an M.S. in nutrition from the University of California, Berkeley, and an M.D. from Tufts University School of Medicine.

Leland Webster, Ph.D. has served as our Vice President, Business Development since January 2009. From August 2007 to January 2009, Dr. Webster served as Vice President, Corporate Development at Surface Logix, Inc., a biomedical development company. Prior to joining Surface Logix, Dr. Webster served in various positions in business development (in-licensing and out-licensing) at ImmunoGen, a biopharmaceutical company, from 2004 to 2007, and at Vertex Pharmaceuticals, a biotechnology company, from 1999 to 2004. Dr. Webster served as a Senior Analyst at MPM Capital L.P., a venture capital firm, from 1994 to 1997. Dr. Webster served as Damon Runyon-Walker Winchell postdoctoral fellow in the Department of Biological Chemistry and Molecular Pharmacology at the Harvard Medical School from 1991 to 1994. Dr. Webster received a B.A. in biological sciences from Northwestern University, a Ph.D. in biochemistry from the University of Pennsylvania and an M.B.A. from the MIT Sloan School of Management.

Xiao-Yi Xiao, Ph.D. has served as our Vice President, Medicinal Chemistry since September 2006. From 2003 to 2006, Dr. Xiao served as Senior Director of Discovery Chemistry at Miikana Therapeutics (now part of EntreMed), a pharmaceutical company. Prior to joining Miikana Therapeutics, Dr. Xiao served as Director of Discovery Chemistry at Syrrx, Inc. (now a Takeda Pharmaceuticals company), a pharmaceutical company, from

Table of Contents

2001 to 2003. From 1995 to 2001, he served in various positions at Discovery Partners International (now part of Infinity Pharmaceuticals), a chemical synthesis company. From 1993 to 1995, Dr. Xiao served in various positions at Affymax Research Institute, a biopharmaceutical company. Dr. Xiao has published more than 40 research articles and book chapters as well as over 20 issued patents and patent applications. Dr. Xiao received a B.S. in chemistry from Zhongshan University, China, and a Ph.D. in organic and bio-organic chemistry from State University of New York Stony Brook.

Non-Employee Directors

L. Patrick Gage, Ph.D. has served as a member of our board of directors and as Chairman of our board of directors since December 2011. Since July 2002, Dr. Gage has served as a consultant to the biopharmaceutical industry. From 1998 to 2002, Dr. Gage served as President of Wyeth Research (now part of Pfizer, Inc.) and Senior Vice President, Science and Technology. Prior to joining Wyeth Research, he served in various positions at Genetics Institute, Inc., a biotechnology company, from 1989 to 1998, first as head of Research and Development, then as Chief Operating Officer and eventually as President. From 1971 to 1989, Dr. Gage served in various positions in research management with Hoffmann-La Roche Inc., a pharmaceutical company, most recently serving as Vice President responsible for U.S. drug discovery. Dr. Gage has served on the board of directors of Cytokinetics, Incorporated, a publicly traded biopharmaceuticals company, since November 2009 and as Chairman of its board of directors since March 2010. Dr. Gage also currently serves on the board of directors of two privately held companies, Alvine Pharmaceuticals and Corridor Pharmaceuticals. Dr. Gage currently serves on the board of directors of two non-profit organizations, the Marine Biological Laboratories and the Wistar Institute. Dr. Gage received a B.S. in physics from the Massachusetts Institute of Technology and a Ph.D. in biophysics from the University of Chicago. We believe that Dr. Gage s extensive industry and board experience as well as his independence allows him to serve as an effective Chairman of our board of directors and to be a key contributor to our board of directors.

Garen Bohlin has served as a member of our board of directors since July 2010. Since May 2012, Mr. Bohlin has served as a consultant to life sciences companies. From January 2010 until April 2012, he served as Executive Vice President of Constellation Pharmaceuticals, Inc., a biopharmaceutical company. Prior to joining Constellation Pharmaceuticals, Mr. Bohlin served as Chief Operating Officer of Sirtris Pharmaceuticals, a biotechnology company, from 2005 to December 2009. Mr. Bohlin was the founding Chief Executive Officer of Syntonix Pharmaceuticals, Inc., a biopharmaceutical company, from 1999 through December 2008. Earlier in his career, he held multiple executive positions at Genetics Institute, a biotechnology company, and was a partner at Arthur Andersen & Co., a public accounting and consulting organization. Mr. Bohlin currently serves on the board of directors of Karyopharm Therapeutics, Inc., a public pharmaceutical company. He also serves on the board of directors of Acusphere, Inc., a privately held (previously publicly traded) biotechnology company, and Precision Dermatology, Inc., a private company. He also served on the board of directors for Praecis Pharmaceuticals, Inc., previously a publicly traded biopharmaceuticals company that is now part of GlaxoSmithKline, from 2005 to 2007, Targanta Therapeutics, Inc., previously a publicly traded biopharmaceuticals company that is now part of The Medicines Company, from 2007 to 2009 and SpringLeaf Therapeutics, Inc., a private company, from 2010 to 2013. Mr. Bohlin received his B.S. in accounting and finance from The University of Illinois. We believe that Mr. Bohlin s industry and board experience, including his audit committee experience, for both publicly traded and privately held companies makes him a key contributor to our board of directors.

John G. Freund, M.D. has served as a member of our board of directors since October 2012. Dr. Freund co-founded Skyline Ventures in 1997 and has served as a partner at Skyline since its founding. Prior to joining Skyline, Dr. Freund served as managing director in the private equity group of Chancellor Capital Management, a private capital investment firm. In 1995, he co-founded Intuitive Surgical, a medical device company, and served on its board of directors until 2000. From 1988 to 1994, Dr. Freund served in various positions at Acuson Corporation, a maker of

ultrasound equipment that is now part of Siemens, most recently as Executive Vice President. Prior to joining Acuson, Dr. Freund was a general partner of Morgan Stanley Venture Partners from

Table of Contents

1987 to 1988. From 1982 to 1988, Dr. Freund was a general partner at Morgan Stanley & Co., an investment banking company, where he co-founded the Healthcare Group in the Corporate Finance Department in 1983. He has served on the board of directors of Mako Surgical Corp., a publicly traded medical device company, since 2008, and XenoPort, Inc., a publicly traded biopharmaceutical company, since 1999. Dr. Freund also serves on the board of directors of two privately held companies, Advion and DiscoverX, and three U.S. registered investment funds managed by Capital Research and Management. He also previously served on the board of directors of three publicly traded companies, Map Pharmaceuticals, a biopharmaceutical company, Hansen Medical, a biotechnology company, and Sirtris Pharmaceuticals, a biopharmaceutical company. Dr. Freund is a member of the Advisory Board for the Harvard Business School Healthcare Initiative, and is a member of the Therapeutics Advisory Council of Harvard Medical School. Dr. Freund received a B.A. in history from Harvard College, an M.D. from Harvard Medical School, and an M.B.A. from Harvard Business School. We believe that Dr. Freund s extensive finance and investment experience, his experience as an executive and his service on the board of directors of numerous public and privately held companies allows him to be a key contributor to our board of directors.

Steven R. Gullans, Ph.D. has served as a member of our board of directors since May 2010. Dr. Gullans co-founded Excel Venture Management in February 2008 and has served as a partner at Excel since its founding. Prior to co-founding Excel, Dr. Gullans co-founded RxGen, Inc., a privately held pharmaceutical services company, where he served as Chief Executive Officer from July 2004 to February 2008, and as a member of its board of directors from April 2002 until August 2012. From 2002 until 2004, Dr. Gullans served as Chief Scientific Officer at U.S. Genomics, a pathogen-diagnostic technology company. Dr. Gullans was a faculty member at Harvard Medical School and Brigham and Women s Hospital from 1985 to 2003. Dr. Gullans currently serves on the board of directors of four privately held companies, Cleveland HeartLab, PathoGenetix, nanoMR and Catch.com. Dr. Gullans received a B.S. in biology at Union College, a Ph.D. in physiology at Duke University, and postdoctoral training at the Yale School of Medicine. In addition to representing one of our principal stockholders, we believe that Dr. Gullans scientific and business background and his service on numerous boards of directors allows him to be a key contributor to our board of directors.

Family Relationships

There are no family relationships among any of our directors or executive officers.

Board Composition

Our board of directors currently consists of five members, all of whom were elected as directors pursuant to a stockholders agreement that we entered into with the holders of our preferred stock prior to our initial public offering, which terminated upon the closing of our initial public offering. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal.

Our amended and restated certificate of incorporation and amended and restated bylaws provide that the authorized number of directors may be changed only by resolution of the board of directors. Our amended and restated certificate of incorporation and amended and restated bylaws also provide that our directors may be removed only for cause by the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in an annual election of directors, and that any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office.

In accordance with the terms of our certificate of incorporation and bylaws, our board of directors is divided into three classes, class I, class II and class III, with members of each class serving staggered three-year terms. The members of the classes are as follows:

the sole class I director is Dr. Gage, whose term will expire at the annual meeting of stockholders to be held in 2014;

Table of Contents

the class II directors are Dr. Gullans and Mr. Macdonald, and their term will expire at the annual meeting of stockholders to be held in 2015; and

the class III directors are Mr. Bohlin and Dr. Freund, and their term will expire at the annual meeting of stockholders to be held in 2016.

Upon the expiration of the term of a class of directors, directors in that class are eligible to be elected for a new three-year term at the annual meeting of stockholders in the year in which their term expires.

We have no formal policy regarding board diversity. Our priority in selection of board members is identification of members who will further the interests of our stockholders through his or her established record of professional accomplishment, the ability to contribute positively to the collaborative culture among board members, knowledge of our business and understanding of the competitive landscape.

Director Independence

Rule 5605 of the NASDAQ Listing Rules requires a majority of a listed company s board of directors to be comprised of independent directors within one year of listing. In addition, the NASDAQ Listing Rules require that, subject to specified exceptions, each member of a listed company s audit, compensation and nominating and corporate governance committees be independent and that audit committee members also satisfy independence criteria set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Under Rule 5605(a)(2), a director will only qualify as an independent director if, in the opinion of our board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries.

In February 2013, our board of directors undertook a review of the composition of our board of directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our board of directors has determined that each of our directors, with the exception of Guy Macdonald, is an independent director as defined under Rule 5605(a)(2) of the NASDAQ Listing Rules. Our board of directors also determined that Garen Bohlin and John Freund, who comprise our finance and audit committee, and Steven Gullans and John Freund, who comprise our compensation committee, satisfy the independence standards for such committees established by the Securities and Exchange Commission and the NASDAQ Listing Rules, as applicable. In making such determinations, our board of directors considered the relationships that each such non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining independence, including the beneficial ownership of our capital stock by each non-employee director.

Board Committees

Our board of directors has established a finance and audit committee, a compensation committee and a nominating and corporate governance committee. Each of these committees operates under a charter that has been approved by our board of directors. Copies of the committee charters are posted on the Investor Relations section of our website, which is located at www.tphase.com.

Finance and Audit Committee

The members of our finance and audit committee are Garen Bohlin, John Freund and Patrick Gage. Garen Bohlin is the chair of the finance and audit committee. Our board of directors has determined that each of these directors is independent within the meaning of Rule 10A-3 under the Exchange Act. In addition, our board of

Table of Contents

directors has determined that Garen Bohlin qualifies as an audit committee financial expert within the meaning of SEC regulations and the NASDAQ Listing Rules. In making this determination, our board has considered the formal education and nature and scope of his previous experience, coupled with past and present service on various audit committees. Our finance and audit committee assists our board of directors in its oversight of our accounting and financial reporting process and the audits of our financial statements. Our finance and audit committee s responsibilities include:

- appointing, approving the compensation of, and assessing the independence of the our registered public accounting firm;
- overseeing the work of our independent registered public accounting firm, including through the receipt and consideration of reports from such firm;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures;
- monitoring our internal control over financial reporting, disclosure controls and procedures and code of business conduct and ethics;
- overseeing our internal audit function, if any;
- discussing our risk management policies;
- establishing policies regarding hiring employees from our independent registered public accounting firm and procedures for the receipt and retention of accounting related complaints and concerns;
- meeting independently with our internal auditing staff, our independent registered public accounting firm and management;
- reviewing and approving or ratifying any related person transactions; and
- preparing the audit committee report required by Securities and Exchange Commission, or SEC, rules. All audit services to be provided to us and all non-audit services, other than de minimis non-audit services, to be provided to us by our registered public accounting firm must be approved in advance by our finance and audit committee.

Compensation Committee

The members of our compensation committee are John Freund, Patrick Gage and Steven Gullans. Steven Gullans is the chair of the compensation committee. Our compensation committee assists our board of directors in the discharge of its responsibilities relating to the compensation of our executive officers. The compensation committee s responsibilities include:

- reviewing and approving, or making recommendations to our board with respect to, the compensation of our chief executive officer and other executive officers;
- overseeing the evaluation of our senior executives;
- reviewing and making recommendations to our board of directors with respect to our incentive-compensation and equity-based compensation plans;
- overseeing and administering our equity-based plans;
- reviewing and making recommendations to our board with respect to director compensation;
- reviewing and discussing with management our Compensation Discussion and Analysis disclosure to the extent such disclosure is required by SEC rules; and
- preparing the compensation committee report required by SEC rules.

Table of Contents

Nominating and Corporate Governance Committee

The members of our nominating and corporate governance committee are John Freund, Patrick Gage and Steven Gullans. Patrick Gage is the chair of the nominating and corporate governance committee. The nominating and corporate governance committee s responsibilities include:

- identifying individuals qualified to become members of our board;
- recommending to our board the persons to be nominated for election as directors and to each of our board s committees;
- developing and recommending to our board corporate governance principles; and
- overseeing an annual evaluation of our board.

Compensation Committee Interlocks and Insider Participation

None of our executive officers serves, or in the past has served, as a member of the board of directors or compensation committee, or other committee serving an equivalent function, of any entity that has one or more executive officers who serve as members of our board of directors or our compensation committee. None of the members of our compensation committee is an officer or employee of our company, nor have they ever been an officer or employee of our company.

Code of Business Conduct and Ethics

We have adopted 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. A copy of the code is posted on the Investor Relations section of our website, which is located at www.tphase.com. If we make any substantive amendments to, or grant any waivers from, the code of business conduct and ethics for any officer or director, we will disclose the nature of such amendment or waiver on our website or in a current report on Form 8-K.

Director Compensation

Under our director compensation program, we pay our non-employee directors retainers in cash. We do not pay any compensation to our President and Chief Executive Officer in connection with his service on our board of directors. The compensation that we pay to our President and Chief Executive Officer is discussed in the Executive Compensation section of this prospectus. Each non-employee director receives a cash retainer for service on the board of directors and for service on each committee on which the director is a member. The chairmen of the board and of each committee receive higher retainers for such service. These fees are payable quarterly in arrears. The fees paid to non-employee directors for service on the board of directors and for service on each committee of the board of directors on which the director is a member are as follows:

	Member Annual Fee	Chairman Annual Fee
Board of Directors	$ 30,000	$
Audit Committee	$ 7,500	$ 15,000
Compensation Committee	$ 7,500	$ 15,000
Nomination and Corporate Governance Committee	$ 3,750	$ 7,500
Service as Chairman of the Board		$ 25,000

We also continue to reimburse our non-employee directors for reasonable travel and out-of-pocket expenses incurred in connection with attending board of director and committee meetings.

In addition, under our director compensation program, each non-employee director that was serving on our board of directors upon the closing of our initial public offering in March 2013 received an option to purchase

Table of Contents

20,000 shares of our common stock and each non-employee director subsequently elected to our board of directors will receive an option to purchase 20,000 shares of our common stock, with each of these options vesting in equal quarterly installments over a three-year period measured from the date of grant, subject to the non-employee director s continued service as a director, and becoming exercisable in full upon a change in control of our company. Further, on the date of the first board meeting held after each annual meeting of stockholders, each non-employee director that has served on our board of directors for at least six months will receive an option to purchase 10,000 shares of our common stock. Each of these options will vest in equal quarterly installments over a one-year period measured from the date of grant, subject to the non-employee director s continued service as a director, and will become exercisable in full upon a change in control of our company. The exercise price of these options will equal the fair market value of our common stock on the date of grant.

This policy is intended to provide a total compensation package that enables us to attract and retain qualified and experienced individuals to serve as directors and to align our directors interests with those of our stockholders.

Our current director compensation arrangements have been in effect since the time of our initial public offering in March 2013. Prior to that time, we did not have a formal non-employee director compensation policy. In connection with their initial elections to our board of directors, we agreed to pay Dr. Gage, our chairman of the board, an annual cash retainer of $50,000 and Mr. Bohlin an annual cash retainer of $25,000. None of our other non-employee directors received any compensation. We reimbursed our non-employee directors for reasonable travel and out-of-pocket expenses incurred in connection with attending board of director and committee meetings.

In connection with their initial elections to our board of directors, on December 8, 2011, we granted Dr. Gage options to purchase an aggregate of 54,544 shares of our common stock with an exercise price of $2.03 per share, and on July 12, 2010, we granted to Mr. Bohlin options to purchase an aggregate of 32,565 shares of our common stock with an exercise price of $2.03 per share. The options granted to Dr. Gage and Mr. Bohlin each provided for vesting as to 25% of the shares on the first anniversary of commencement of service and as to an additional 6.25% of the shares at the end of each successive three-month period thereafter. Prior to our initial public offering, we had not granted stock options to any of our other non-employee directors.

The following table sets forth information regarding compensation earned by our non-employee directors during 2012.

Name	Fees Earned or Paid in Cash ($)	Total ($)
L. Patrick Gage, Ph.D.	50,000	50,000
Garen Bohlin	25,000	25,000
Douglas Cole, M.D.(1)		
John G. Freund, M.D.(2)		
Eric M. Gordon, Ph.D.(3)		
Steven R. Gullans, Ph.D.		
Karl D. Handelsman(4)		
Lawrence G. Miller, M.D.(4)		
Robert M. Weisskoff, Ph.D.(4)		

(1) Dr. Cole served as a director until his resignation from our board of directors on October 18, 2013.
(2) Dr. Freund commenced service on our board of directors on October 23, 2012.

(3) Dr. Gordon served as a director until his resignation from our board of directors on October 23, 2012.
(4) Mr. Handelsman, Dr. Miller and Dr. Weisskoff each resigned from our board of directors on March 18, 2013, in anticipation of our initial public offering.

Table of Contents

EXECUTIVE COMPENSATION

This section discusses the material elements of our executive compensation policies and decisions and the most important factors relevant to an analysis of these policies and decisions. It provides qualitative information regarding the manner and context in which compensation is awarded to and earned by our executive officers named in the Summary Compensation Table below, or our named executive officers, and is intended to place in perspective the data presented in the following tables and the corresponding narrative.

As a newly public company, we have begun a thorough review of all elements of our executive compensation program, including the function and design of our equity incentive programs. We have begun, and we expect to continue in the coming months, to evaluate the need for revisions to our executive compensation program to ensure our program is competitive with the companies with which we compete for executive talent and is appropriate for a public company.

Summary Compensation Table

The following table sets forth information regarding compensation earned by our President and Chief Executive Officer and our next three highest paid executive officers during the years ended December 31, 2011 and 2012. We refer to these individuals as our named executive officers.

Name	Year	Salary ($)	Bonus ($)	Option Awards ($)(1)	Non-Equity Incentive Plan Compensation ($)(2)	Total ($)
Guy Macdonald, *President and Chief Executive Officer*	2012	373,106		26,175	104,469	503,750
	2011	361,235			95,088	456,323
David C. Lubner *Senior Vice President and Chief Financial Officer*	2012	272,950		111,597	43,672	428,219
	2011	265,000			39,750	304,750
Patrick T. Horn, M.D., Ph.D. *Chief Medical Officer*	2012	324,450		89,576	64,890	478,916
	2011	315,000	50,000(3)	198,310	59,063	622,373
Joyce Sutcliffe, Ph.D. *Senior Vice President, Biology*	2012	272,950		23,125	43,672	339,747
	2011	265,000			39,750	304,750

(1) Represents the grant date fair value of option awards granted in 2011 and 2012 in accordance with ASC 718. The assumptions we use in calculating these amounts are discussed in Note 9 to our consolidated financial statements for the years ended December 31, 2011 and 2012 and the period from July 7, 2006 (inception) to December 31, 2012 appearing elsewhere in this prospectus.

(2) This amount consists of cash bonuses paid under our executive bonus program. See the Narrative Disclosure to Summary Compensation Table described below for a description of this plan. The amounts reported for 2012 were earned in 2012 and are to be paid in January 2013. The amounts reported for 2011 were earned in 2011 and paid in February 2012.

(3) Represents a cash bonus paid to Dr. Horn in connection with the commencement of his employment.

Narrative Disclosure to Summary Compensation Table

In 2012, we paid base salaries to Mr. Macdonald, Dr. Horn, Mr. Lubner and Dr. Sutcliffe of $373,106, $324,450, $272,950 and $272,950, respectively. Base salaries are used to recognize the experience, skills, knowledge and responsibilities required of all our employees, including our named executive officers. None of our named executive officers is currently party to an employment agreement or other agreement or arrangement that provides for automatic or scheduled increases in base salary.

Our board of directors may, in their discretion, award bonuses to our named executive officers from time to time. We typically establish bonus targets for our named executive officers and conduct an annual performance

Table of Contents

review process to serve as the basis for determining eligibility for any such bonuses. Among the key parameters that typically are the basis for such bonus determinations are our achievement of corporate goals and the achievement of specified goals and objectives by each individual employee. Our management may propose bonus awards to the compensation committee of the board or the board primarily based on such review process. Our board of directors makes the final determination of the eligibility requirements for and the amount of such bonus awards. In 2012, we awarded bonuses to Mr. Macdonald, Dr. Horn, Mr. Lubner and Dr. Sutcliffe in the amounts of $104,469, $64,890, $43,672 and $43,672, respectively, in each case based on our achievement of company goals with respect to the development of the intravenous and oral formulations of eravacycline.

Although we do not have a formal policy with respect to the grant of equity incentive awards to our executive officers, or any formal equity ownership guidelines applicable to them, we believe that equity grants provide our executives with a strong link to our long-term performance, create an ownership culture and help to align the interests of our executives and our stockholders. In addition, we believe that equity grants with a time-based vesting feature promote executive retention because this feature incentivizes our executive officers to remain in our employment during the vesting period. Accordingly our compensation committee and board of directors annually review the equity incentive compensation of our named executive officers and from time to time may grant equity incentive awards to them in the form of stock options. In 2012, we granted options to purchase 12,893, 44,126, 54,973 and 11,391 shares of our common stock to Mr. Macdonald, Dr. Horn, Mr. Lubner and Dr. Sutcliffe, respectively, in each case based on the executive officer s existing equity incentive holdings, level of responsibility within our company and our subjective assessment of the executive officer s individual performance and our overall corporate performance, in each case without reference to any specific metric.

Outstanding Equity Awards at Year End

The following table sets forth information regarding outstanding stock options held by our named executive officers as of December 31, 2012.

	Option Awards			
Name	Number of Securities Underlying Unexercised Options (#) exercisable	Number of Securities Underlying Unexercised Options (#) unexercisable	Option Exercise Price ($)	Option Expiration Date
Guy Macdonald	30,378	0	$ 2.90	12/5/2017
	27,090	0	$ 5.80	8/8/2018
	223,307(1)	31,864	$ 0.87	9/11/2019
	55,626(2)	33,375	$ 2.03	9/28/2020
	1,611(3)	11,282	$ 2.03	6/6/2022
David C. Lubner	30,176(1)	4,306	$ 0.87	9/11/2019
	25,612(2)	15,367	$ 2.03	9/28/2020
	6,871(3)	48,102	$ 2.03	6/6/2022
Patrick T. Horn, M.D., Ph.D.	42,739(4)	54,950	$ 2.03	1/3/2021
	5,515(3)	38,610	$ 2.03	6/6/2022
Joyce Sutcliffe, Ph.D.	7,543(5)	1,077	$ 5.80	4/14/2019
	42,025(6)	9,698	$ 0.87	9/11/2019
	23,345(2)	14,007	$ 2.03	9/28/2020

1,423(3)	9,967	$	2.03	6/6/2022

(1) This option vested as to 33.4% of the shares on September 11, 2009 and as to an additional 4.1625% of the shares at the end of each successive three-month period through and including September 11, 2013.
(2) This option vested as to 6.25% of the shares on September 18, 2010 and vests as to 6.25% of the shares at the end of each successive three-month period through and including June 18, 2014.
(3) This option vested as to 6.25% of the shares on September 6, 2012 and vests as to 6.25% of the shares at the end of each successive three-month period through and including June 6, 2016.

Table of Contents

(4) This option vested as to 25% of the shares on January 3, 2012 and vests as to an additional 6.25% of the shares at the end of each successive three-month period through and including January 3, 2015.
(5) This option vested as to 25% of the shares on May 4, 2010 and as to an additional 6.25% of the shares at the end of each successive three-month period through and including May 4, 2013.
(6) This option vested as to 16.67% of the shares on May 4, 2010 and 2.08% of the shares on June 11, 2010 and as to an additional 6.25% of the shares at the end of each successive three-month period following June 11, 2010 through and including September 11, 2013.

Employment Agreements, Severance and Change in Control Arrangements

We do not have formal employment agreements with any of our named executive officers. We have entered into offer letter agreements and non-competition, non-solicitation and non-disclosure agreements with each of our named executive officers. Under the non-competition, non-solicitation and non-disclosure agreements, each named executive officer has agreed (i) not to compete with us during his employment and for a period of one year after the termination of his employment, (ii) not to solicit our employees during his employment and for a period of one year after the termination of his employment, (iii) to protect our confidential and proprietary information, and (iv) to assign to us related intellectual property developed during the course of his employment. Each named executive officer s employment is at will.

Benefits Provided Upon Termination Without Cause

Under the terms of the offer letters we have entered into with our executive officers, if an executive s employment is terminated by us without cause, subject to the executive s signing a general release of potential claims against us:

in the case of Mr. Macdonald, (1) he will be entitled to receive a lump sum payment equal to his monthly base salary for a period of nine months and (2) we will continue to provide medical and dental benefits to the extent that he was receiving them at the time of termination for nine months;

in the case of each of Mr. Lubner and Dr. Horn, (1) he will be entitled to receive a lump sum payment equal to his monthly base salary for a period of six months, and (2) we will continue to provide medical and dental benefits to the extent that he was receiving them at the time of termination for six months; and

in the case of Dr. Sutcliffe, (1) she will be entitled to receive a lump sum payment equal to her monthly base salary for a period of three months, and (2) we will continue to provide medical and dental benefits to the extent that she was receiving them at the time of termination for three months.

Benefits Provided Upon a Change in Control

Under the terms of Mr. Macdonald s offer letter, the vesting of his initial options will accelerate with respect to 50% of the then unvested shares upon a change of control event (as defined in the offer letter). In addition, if, following the change of control event, Mr. Macdonald remains employed by us or the succeeding company for six months or, during the six months following the change of control event, Mr. Macdonald s employment is terminated without cause or he terminates his employment as a result of a substantial diminution in his authority and responsibilities, these initial options will vest and become exercisable in full.

In addition, under certain of the stock option agreements that we have entered into with our named executive officers, we have agreed that if the named executive officer is terminated without cause, or resigns for good reason, in connection with or within one year after a change in control of our company (as defined in the applicable stock option agreement) that stock option will vest in full.

We believe that equity-based awards are important vehicles by which to align the interest of our employees with the financial interests of our stockholders, and we historically have awarded stock options broadly to our

Table of Contents

employees, including our named executive officers. The material terms and conditions of our stock option and other equity compensation plans are described below.

Stock Option and Other Compensation Plans

2006 Stock Incentive Plan

Our 2006 Stock Incentive Plan, which we refer to as the 2006 Plan, was first adopted by our board of directors and first approved by our stockholders in August 2006 and was amended in December 2007, June 2008, September 2009 and May 2010. Our board of directors determined that, effective upon the closing of our initial public offering, which occurred in March 2013, that we would grant no further stock options or other awards under the 2006 Plan. Awards granted under the 2006 Plan prior to our initial public offering remain outstanding under the 2006 Plan.

The 2006 Plan provided for the grant of incentive stock options, nonstatutory stock options, restricted stock and other stock-based awards. Our employees, officers, directors, consultants and advisors were eligible to receive awards under the 2006 Plan; however, incentive stock options could only be granted to employees. In accordance with the terms of the 2006 Plan, our board of directors, or a committee appointed by our board, administers the 2006 Plan and, subject to any limitations in the 2006 Plan, selected the recipients of awards and determined:

- the number of shares of common stock covered by options and the dates upon which those options were to become exercisable;
- the exercise prices of options;
- the duration of options;
- the methods of payment of the exercise price of options; and
- the number of shares of common stock subject to any restricted stock or other stock-based awards and the terms and conditions of those awards, including the issue price, conditions for repurchase and repurchase price.

In the event of a reorganization event, as defined in the 2006 Plan, our board, or the compensation committee, has the discretion to take one or more of the following actions:

- arrange for or provide that each outstanding award will be assumed or a substantially similar award will be substituted by the acquiring or succeeding corporation (or an affiliate thereof);
- provide, upon notice to the participant, that all unexercised awards will terminate immediately prior to the consummation of such transaction unless exercised within a specified period of time;

provide that all or any outstanding awards will become vested or exercisable, or restrictions applicable to such awards will lapse, in full or in part, at or immediately prior to such event;

in the event of a reorganization event under the terms of which holders of our common stock will receive a cash payment per share surrendered in the transaction, make or provide for an equivalent cash payment in exchange for the termination of such equity awards; or

provide that in the event of a liquidation or dissolution, awards will convert into the right to receive liquidation proceeds.

As of September 30, 2013, there were options to purchase an aggregate of 1,429,545 shares of common stock outstanding under the 2006 Plan at a weighted-average exercise price of $1.67 per share and an aggregate of 163,373 shares of common stock had been issued upon the exercise of options granted under the 2006 Plan. No further awards may be made under the 2006 Plan.

Table of Contents

2013 Stock Incentive Plan

Our 2013 Stock Incentive Plan, which we refer to as the 2013 Plan, was adopted by our board of directors and approved by our stockholders effective upon the closing of our initial public offering, which occurred in March 2013. The 2013 Plan provides for the grant of incentive stock options, nonstatutory stock options, restricted stock awards and other stock-based awards. The 2013 Plan provides for the grant of awards with respect to 1,949,077 shares of our common stock plus (1) the number of shares of our common stock subject to outstanding awards under the 2006 Plan upon the closing of our initial public offering that later expire, terminate or are otherwise surrendered, cancelled, forfeited or repurchased by us at their original issuance price pursuant to a contractual repurchase right and (2) an annual increase, to be added on January 1 of each year, from and after 2014 through 2023, equal to the lowest of (a) 3,000,000 shares of our common stock, (b) 4% of the number of our outstanding shares on January 1 of each such fiscal year and (c) an amount determined by our board of directors.

Our employees, officers, directors, consultants and advisors are eligible to receive awards under the 2013 Plan; however, incentive stock options may only be granted to our employees. The maximum number of shares of common stock with respect to which awards may be granted to any participant under the 2013 Plan is 1,000,000 per calendar year.

Pursuant to the terms of the 2013 Plan, our board of directors selects the recipients of awards and determine:

- the number of shares of common stock covered by options and the dates upon which those options become exercisable;
- the exercise price of options;
- the duration of options;
- the methods of payment of the exercise price of options; and
- the number of shares of common stock subject to any restricted stock or other stock-based awards and the terms and conditions of such awards, including the issue price, conditions for repurchase, repurchase price and performance conditions, if any.

If our board of directors delegates authority to an executive officer to grant awards under the 2013 Plan, the executive officer will have the power to make awards to all of our employees, except executive officers. Our board of directors will fix the terms of the awards to be granted by such executive officer, including the exercise price of such awards, and the maximum number of shares subject to awards that such executive officer may make.

Upon a merger or other reorganization event, our board of directors, may, in its sole discretion, take any one or more of the following actions pursuant to the 2013 Plan, as to some or all outstanding awards, other than restricted stock awards:

provide that all outstanding awards will be assumed or substituted by the successor corporation;

upon written notice to a participant, provide that the participant s unexercised options or awards will terminate immediately prior to the consummation of such transaction unless exercised by the participant;

provide that outstanding awards will become exercisable, realizable or deliverable, or restrictions applicable to an award will lapse, in whole or in part, prior to or upon the reorganization event;

in the event of a reorganization event pursuant to which holders of our common stock will receive a cash payment for each share surrendered in the reorganization event, make or provide for a cash payment to the participants equal to the excess, if any, of the acquisition price times the number of shares of our common stock subject to such outstanding awards (to the extent then exercisable at prices

Table of Contents

not in excess of the acquisition price), over the aggregate exercise price of all such outstanding awards and any applicable tax withholdings, in exchange for the termination of such awards; and

provide that, in connection with a liquidation or dissolution, awards convert into the right to receive liquidation proceeds.

Upon the occurrence of a reorganization event other than a liquidation or dissolution, the repurchase and other rights under each outstanding restricted stock award will continue for the benefit of the successor company and will, unless our board of directors may otherwise determine, apply to the cash, securities or other property into which our common stock is converted pursuant to the reorganization event. Upon the occurrence of a reorganization event involving a liquidation or dissolution, all restrictions and conditions on each outstanding restricted stock award will automatically be deemed terminated or satisfied, unless otherwise provided in the agreement evidencing the restricted stock award.

No award may be granted under the 2013 Plan after February 26, 2023. Our board of directors may amend, suspend or terminate the 2013 Plan at any time, except that stockholder approval will be required to comply with applicable law or stock market requirements.

401(k) Retirement Plan

We maintain a 401(k) retirement plan that is intended to be a tax-qualified defined contribution plan under Section 401(k) of the Internal Revenue Code. In general, all of our employees are eligible to participate, beginning on the first day of the month following commencement of their employment. The 401(k) plan includes a salary deferral arrangement pursuant to which participants may elect to reduce their current compensation by up to the statutorily prescribed limit, equal to $17,500 in 2013, and have the amount of the reduction contributed to the 401(k) plan.

Limitation of Liability and Indemnification

As permitted by Delaware law, we have adopted provisions in our certificate of incorporation that limit or eliminate the personal liability of our directors. Our certificate of incorporation limits the liability of directors to the maximum extent permitted by Delaware law. Delaware law provides that directors of a corporation will not be personally liable for monetary damages for breaches of their fiduciary duties as directors, except liability for:

any breach of the director s duty of loyalty to us or our stockholders;

any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;

any unlawful payments related to dividends or unlawful stock repurchases, redemptions or other distributions; or

any transaction from which the director derived an improper personal benefit.

These limitations do not apply to liabilities arising under federal securities laws and do not affect the availability of equitable remedies, including injunctive relief or rescission. If Delaware law is amended to authorize the further elimination or limiting 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.

As permitted by Delaware law, our certificate of incorporation also provides that:

- we will indemnify our directors and officers to the fullest extent permitted by law;
- we may indemnify our other employees and other agents to the same extent that we indemnify our officers and directors, unless otherwise determined by our board of directors; and
- we will advance expenses to our directors and officers in connection with legal proceedings in connection with a legal proceeding to the fullest extent permitted by law.

Table of Contents

The indemnification provisions contained in our certificate of incorporation are not exclusive. In addition, we have entered into indemnification agreements with each of our directors and executive officers. Each of these indemnification agreements provides that we will indemnify the director or executive officer to the fullest extent permitted by law for claims arising in his capacity as a director or executive officer, respectively, provided that he acted in good faith and in a manner that he reasonably believed to be in, or not opposed to, our best interests and, with respect to any criminal proceeding, had no reasonable cause to believe that his conduct was unlawful. Each of these indemnification agreements provides that in the event that we do not assume the defense of a claim against a director or executive officer, we are required to advance his expenses in connection with his defense, provided that he undertakes to repay all amounts advanced if it is ultimately determined that he is not entitled to be indemnified by us.

We believe that these provisions and agreements are necessary to attract and retain qualified persons as directors and executive officers. Insofar as indemnification for liabilities arising under the Securities Act of 1933, which we refer to as the Securities Act, may be permitted to directors, officers or persons controlling our company pursuant to the foregoing provisions, we understand that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

In addition, we maintain standard policies of insurance under which coverage is provided to our directors and officers against losses arising from claims made by reason of breach of duty or other wrongful act, and to us with respect to payments which may be made by us to such directors and officers pursuant to the above indemnification provisions or otherwise as a matter of law.

Table of Contents

RELATED PERSON TRANSACTIONS

The following is a description of transactions since January 1, 2010 to which we have been a party, and in which any of our directors, executive officers or beneficial owners of more than 5% of our voting securities, or affiliates or immediate family members of any of our directors, executive officers or beneficial owners of more than 5% of our voting securities, had or will have a direct or indirect material interest. We believe the terms obtained or consideration that we paid or received, as applicable, in connection with the transactions described below were comparable to terms available or the amounts that would be paid or received, as applicable, from unrelated third parties.

Series C Preferred Stock Financing

During May and June of 2010, we issued and sold an aggregate of 175,418,122 shares of our Series C preferred stock at a purchase price per share of $0.2571 for an aggregate purchase price of $45,099,999.

The following table sets forth the number of shares of Series C preferred stock that were issued to our directors, executive officers and holders of more than 5% of our voting securities, and affiliates or immediate family members of our directors, executive officers and holders of more than 5% of our voting securities in connection with the Series C preferred stock financing and the aggregate cash purchase price paid by such persons and entities.

Purchaser	Shares of Series C Preferred Stock	Purchase Price
Mediphase Venture Partners II Limited Partnership	8,556,982	$ 2,200,000.07
Mediphase Venture Partners II (Annex Fund) Limited Partnership	2,761,571	$ 709,999.90
Mediphase Venture Partners (DP & UP) Limited Partnership	9,101,517	$ 2,340,000.02
Mediphase Venture Partners II (Select Fund) Limited Partnership	2,917,152	$ 749,999.78
Beacon Bioventures Limited Partnership	27,043,477	$ 6,952,877.94
Beacon Bioventures Principals Limited Partnership	183,283	$ 47,122.06
Skyline Venture Partners Qualified Purchaser Fund IV, L.P.	27,226,760	$ 7,000,000.00
Flagship Ventures Fund 2004, L.P.	9,626,604	$ 2,474,999.89
Flagship Ventures Fund 2007, L.P.	19,544,924	$ 5,024,999.96
CMEA Ventures VI, L.P.	28,485,997	$ 7,323,749.83
CMEA Ventures VI, GmbH & Co. KG	685,531	$ 176,250.02
Excel Medical Fund, L.P.	27,226,760	$ 7,000,000.00
Excel Medical Fund, L.P.	972,384	$ 249,999.92
David Lubner	116,686	$ 29,999.97

Agreements With Our Stockholders

In connection with the Series C preferred stock financing, we entered into a registration rights agreement with the purchasers of our preferred stock. The registration rights agreement provides those holders with the right to demand that we file a registration statement, subject to certain limitations, and to request that their shares be covered by a registration statement that we are otherwise filing. See Description of Capital Stock Registration Rights for additional information.

We have also entered into a stockholders agreement with certain purchasers of our common stock and preferred stock, which terminated upon the closing of our initial public offering in March 2013. The stockholders agreement provided for rights of first refusal and co-sale rights in respect of sales of securities by certain holders of our capital stock. The stockholders agreement also provided holders of our preferred stock with a participation right to purchase their pro rata share of new securities that the Company might propose to

Table of Contents

sell and issue, subject to specified exceptions. The stockholders agreement also contained provisions with respect to the election of our board of directors and its composition.

Severance and Change in Control Agreements

See the Management Employment Agreements, Severance and Change in Control Arrangements section of this prospectus for a further discussion of these arrangements.

Indemnification of Officers and Directors

Our certificate of incorporation provides that we will indemnify our directors and officers to the fullest extent permitted by Delaware law. In addition, we have entered into indemnification agreements with each of our directors and executive officers that may be broader in scope than the specific indemnification provisions contained in the Delaware General Corporation Law. See the Executive Compensation Limitation of Liability and Indemnification section of this prospectus for a further discussion of these arrangements.

Purchases in Initial Public Offering

In our initial public offering, beneficial owners of more than 5% of our voting securities and their affiliates purchased an aggregate of 3,240,384 shares of our common stock at the initial public offering price of $7.00 per share. The following table sets forth the number of shares of our common stock purchased and the aggregate cash purchase price paid by each of these entities in our initial public offering.

Purchaser	Shares of Common Stock	Purchase Price
Mediphase Venture Partners II Limited Partnership	164,285	$ 1,149,995.00
Mediphase Venture Partners (DP & UP) Limited Partnership	121,428	$ 849,996.00
Beacon Bioventures Limited Partnership	638,528	$ 4,469,696.00
Beacon Bioventures Principals Limited Partnership	4,329	$ 30,303.00
Skyline Venture Partners Qualified Purchaser Fund IV, L.P.(1)	681,012	$ 4,767,084.00
Flagship Ventures Fund 2004, L.P.	491,824	$ 3,442,768.00
CMEA Ventures VI, L.P.	628,071	$ 4,396,497.00
CMEA Ventures VI, GmbH & Co. KG	14,786	$ 103,502.00
Excel Medical Fund, L.P.(2)	496,121	$ 3,472,847.00

(1) John G. Freund, a member of our board of directors, is a Managing Member of Skyline Venture Management IV, LLC, which is the sole general partner of Skyline Venture Partners Qualified Purchaser Fund IV, L.P.

(2) Steven R. Gullans, a member of our board of directors, is a Managing Director of Excel Venture Management, LLC, which is the sole general partner of Excel Medical Fund, L.P.

Policies and Procedures for Related Person Transactions

Our board of directors has adopted a written related person transaction policy to set forth policies and procedures for the review and approval or ratification of related person transactions. This policy covers any transaction, arrangement

or relationship, or any series of similar transactions, arrangements or relationships, in which we were or are to be a participant, 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.

Our related person transaction policy contains exceptions for any transaction or interest that is not considered a related person transaction under SEC rules as in effect from time to time. In addition, the policy

Table of Contents

provides that an interest arising solely from a related person s position as an executive officer of another entity that is a participant in a transaction with us will not be subject to the policy if each of the following conditions is met:

- the related person and all other related persons own in the aggregate less than a 10% equity interest in such entity;
- the related person and his or her immediate family members are not involved in the negotiation of the terms of the transaction with us and do not receive any special benefits as a result of the transaction; and
- the amount involved in the transaction equals less than the greater of $200,000 or 5% of the annual gross revenue of the company receiving payment under the transaction.

The policy provides that any related person transaction proposed to be entered into by us must be reported to our chief financial officer and will be reviewed and approved by our finance and audit committee in accordance with the terms of the policy, prior to effectiveness or consummation of the transaction whenever practicable. The policy provides that if our chief financial officer determines that advance approval of a related person transaction is not practicable under the circumstances, our finance and audit committee will review and, in its discretion, may ratify the related person transaction at the next meeting of the finance and audit committee. The policy also provides that alternatively, our chief financial officer may present a related person transaction arising in the time period between meetings of the finance and audit committee to the chair of the finance and audit committee, who will review and may approve the related person transaction, subject to ratification by the finance and audit committee at the next meeting of the finance and audit committee.

In addition, the policy provides that any related person transaction previously approved by the finance and audit committee or otherwise already existing that is ongoing in nature will be reviewed by the finance and audit committee annually to ensure that such related person transaction has been conducted in accordance with the previous approval granted by the finance and audit committee, if any, and that all required disclosures regarding the related person transaction are made.

The policy provides that transactions involving compensation of executive officers will be reviewed and approved by our compensation committee in the manner to be specified in the charter of the compensation committee.

A related person transaction reviewed under this policy will be considered approved or ratified if it is authorized by the finance and audit committee in accordance with the standards set forth in the policy after full disclosure of the related person s interests in the transaction. As appropriate for the circumstances, the policy provides that the finance and audit committee will review and consider:

- the related person s interest in the related person transaction;
- the approximate dollar value of the amount involved in the related person transaction;

the approximate dollar value of the amount of the related person s interest in the transaction without regard to the amount of any profit or loss;

whether the transaction was undertaken in the ordinary course of business of our company;

whether the transaction with the related person is proposed to be, or was, entered into on terms no less favorable to us than the terms that could have been reached with an unrelated third party;

the purpose of, and the potential benefits to us of, the transaction; and

any other information regarding the related person transaction or the related person in the context of the proposed transaction that would be material to investors in light of the circumstances of the particular transaction.

Table of Contents

The policy provides that the finance and audit committee will review all relevant information available to it about the related person transaction. The policy provides that the finance and audit committee may approve or ratify the related person transaction only if the finance and audit committee determines that, under all of the circumstances, the transaction is in, or is not inconsistent with, our best interests. The policy provides that the finance and audit committee may, in its sole discretion, impose such conditions as it deems appropriate on us or the related person in connection with approval of the related person transaction.

Table of Contents

PRINCIPAL STOCKHOLDERS

The following table sets forth information regarding the beneficial ownership of our common stock as of September 30, 2013 by:

- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock;
- each of our named executive officers;
- each of our directors; and
- all of our directors and executive officers as a group.

Beneficial ownership is determined in accordance with SEC rules. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities and include shares of common stock issuable upon the exercise of stock options that are immediately exercisable or exercisable within 60 days after September 30, 2013. Except as otherwise indicated, all of the shares reflected in the table are shares of common stock and all persons listed below have sole voting and investment power with respect to the shares beneficially owned by them, subject to applicable community property laws. The information is not necessarily indicative of beneficial ownership for any other purpose.

The percentage ownership calculations for beneficial ownership prior to this offering are based on 20,676,298 shares outstanding as of September 30, 2013. Percentage ownership calculations for beneficial ownership after this offering also include the shares we are offering hereby. Except as otherwise indicated in the table below, addresses of named beneficial owners are in care of Tetraphase Pharmaceuticals, Inc., 480 Arsenal Street, Suite 110, Watertown, Massachusetts 02472.

In computing the number of shares of common stock beneficially owned by a person and the percentage ownership of that person, we deemed outstanding shares of common stock subject to options or warrants held by that person that are currently exercisable or exercisable within 60 days after September 30, 2013. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned Before Offering	Percentage of Shares Beneficially Owned After Offering
5% Stockholders			
Skyline Venture Partners Qualified Purchaser Fund IV, L.P.(1)	2,190,145	10.59%	8.70%
Entities affiliated with FMR LLC(2)	2,141,645	10.36%	8.51%

Entities affiliated with Flagship Ventures(3)	2,057,673	9.95%	8.17%
Entities affiliated with CMEA Ventures(4)	2,055,238	9.94%	8.16%
Entities affiliated with Mediphase Venture Partners(5)	1,654,544	8.00%	6.57%
Excel Medical Fund, L.P.(6)	1,468,505	7.10%	5.83%
Entities affiliated with Broadfin Capital(7)	1,405,444	6.80%	5.58%
Executive Officers and Directors			
Guy Macdonald(8)	388,982	1.85%	1.52%
David C. Lubner(9)	107,502	*	*
Patrick T. Horn, M.D., Ph.D.(10)	80,950	*	*
Joyce Sutcliffe, Ph.D.(11)	94,251	*	*
L. Patrick Gage, Ph.D.(12)	27,196	*	*
Garen Bohlin(13)	29,792	*	*
John G. Freund, M.D.(14)	2,193,478	10.61%	8.71%
Steven R. Gullans, Ph.D.(15)	1,471,838	7.12%	5.85%
All current executive officers and directors as a group (8 persons)(16)	4,393,989	20.54%	16.97%

Table of Contents

* Represents beneficial ownership of less than 1% of our outstanding stock.

(1) John G. Freund and Yasunori Kaneko are the Managing Members of Skyline Venture Management IV, LLC, which is the sole general partner of Skyline Venture Partners Qualified Purchaser Fund IV, L.P., and as such Drs. Freund and Kaneko may be deemed to share voting and dispositive power with respect to all shares held by Skyline Venture Partners Qualified Purchaser Fund IV, L.P. Each of Drs. Freund and Kaneko disclaims beneficial ownership of such shares except to the extent of any pecuniary interest therein. The address for each of the individuals and entities listed above is 525 University Ave, Suite 520, Palo Alto, California 94301.

(2) Consists of 14,418 shares of common stock held by Beacon Bioventures Limited Partnership and 2,127,227 shares of common stock held by Beacon Bioventures Principals Limited Partnership. Beacon Bioventures Advisors Limited Partnership is the general partner of Beacon Bioventures Limited Partnership and Beacon Bioventures Principals Limited Partnership. Beacon Bioventures Advisors Limited Partnership is solely managed by Northern Neck Investors LLC, its general partner and investment manager. Northern Neck Investors LLC is owned by the shareholders and certain employees of FMR LLC. Northern Neck Investors LLC is managed on a day-to-day basis by its President, Paul L. Mucci, and as such Mr. Mucci may be deemed to share voting and dispositive power with respect to all shares held by Beacon Bioventures Advisors Limited Partnership. Each of the individuals and entities listed above expressly disclaims beneficial ownership of the securities listed above except to the extent of any pecuniary interest therein. The address for each of the individuals and entities listed above is 100 Summer Street R7B, Boston, Massachusetts 02110.

(3) Consists of 891,887 shares of common stock held by Flagship Ventures Fund 2004, L.P. (Flagship 2004) and 1,165,786 shares of common stock held by Flagship Ventures Fund 2007, L.P. (Flagship 2007). Flagship Ventures General Partner LLC (Flagship LLC) is the general partner of Flagship 2004. Flagship Ventures 2007 General Partner, LLC (Flagship 2007 LLC) is the general partner of Flagship 2007. Noubar B. Afeyan Ph.D. and Edwin M. Kania, Jr. are the managers of Flagship LLC and Flagship 2007 LLC and may be deemed to share voting and investment power with respect to all shares held by Flagship 2004 and Flagship 2007. Each of the individuals and entities listed above expressly disclaims beneficial ownership of the securities listed above except to the extent of any pecuniary interest therein. The address for each of the individuals and entities listed above is One Memorial Drive, 7th Floor, Cambridge, Massachusetts 02140.

(4) Consists of 2,007,246 shares of common stock held by CMEA Ventures VI, L.P. and 47,992 shares of common stock held by CMEA Ventures VI, GmbH & Co. KG. The general partner of each of CMEA Ventures VI, L.P. and CMEA Ventures VI, GmbH & Co. KG is CMEA Ventures Management, L.P. The general partners of CMEA Ventures Management, L.P. are Karl Handelsman, David Collier, and James Watson. Each of these individuals exercises shared voting and investment power over the shares held of record by CMEA Ventures VI, L.P. and CMEA Ventures VI, GmbH & Co. KG. Each of the individuals and entities listed above expressly disclaims beneficial ownership of the securities listed above except to the extent of any pecuniary interest therein. The address for each of the individuals and entities listed above is 1 Letterman Drive, Bldg C Ste CM500, San Francisco, California 94129.

(5) Consists of 540,592 shares of common stock held by Mediphase Venture Partners (DP & UP) Limited Partnership, 765,208 shares of common stock held by Mediphase Venture Partners II Limited Partnership, 248,153 shares of common stock held by Mediphase Venture Partners II (Annex Fund) Limited Partnership and 100,591 shares of common stock held by Mediphase Venture Partners II (Select Fund) L.P. Mediphase (DP & UP) LLC is the general partner of Mediphase Venture Partners (DP & UP) Limited Partnership. The members of Mediphase (DP & UP) LLC are Lawrence Miller and Paul Howard. Mediphase (DP & UP) LLC and each of these individuals exercises shared voting and investment power over the shares held of record by Mediphase Venture Partners (DP & UP) Limited Partnership. Mediphase II LLC is the general partner of Mediphase Venture Partners II Limited Partnership. The members of Mediphase II LLC are Lawrence Miller and Paul Howard. Mediphase II LLC and each of these individuals

exercises shared voting and investment power over the shares held of record by Mediphase Venture Partners II Limited Partnership. Mediphase II (Annex Fund) LLC is the general partner of Mediphase Venture Partners II (Annex Fund)

Table of Contents

Limited Partnership. The members of Mediphase II (Annex Fund) LLC are Lawrence Miller and Paul Howard. Mediphase II (Annex Fund) LLC and each of these individuals exercises shared voting and investment power over the shares held of record by Mediphase Venture Partners II (Annex Fund) Limited Partnership. Mediphase II (Select Fund) LLC is the general partner of Mediphase Venture Partners II (Select Fund) L.P. The members of Mediphase II (Select Fund) LLC are Lawrence Miller and Paul Howard. Mediphase II (Select Fund) LLC and each of these individuals exercises shared voting and investment power over the shares held of record by Mediphase Venture Partners II (Select Fund) L.P. Each of the individuals and entities listed above expressly disclaims beneficial ownership of the securities listed above except to the extent of any pecuniary interest therein. The address for each of the individuals and entities listed above is 1 Gateway Center, Suite 407, Newton, Massachusetts 02458.

(6) Excel Medical Ventures, LLC is the general partner of Excel Medical Fund, L.P. Steven R. Gullans, Frederick R. Blume, Juan Enriquez and Enrico Petrillo are the Managing Directors of Excel Medical Ventures, LLC and may be deemed to share voting and dispositive power with respect to all shares held by Excel Medical Fund, L.P. Each of the individuals and entities listed above expressly disclaims beneficial ownership of the securities listed above except to the extent of any pecuniary interest therein. The address for each of the individuals and entities listed above is 800 Boylston Street, Suite 2825, Boston, Massachusetts 02199.

(7) Each of Broadfin Capital, LLC, Broadfin Healthcare Master Fund, Ltd. and Kevin Kotler has shared power to vote or to direct the vote of, and shared power to dispose or to direct the disposition of, these 1,405,444 shares of common stock. The address of Broadfin Capital, LLC and Kevin Kotler is 237 Park Avenue, Suite 900, New York, New York 10017 and the address of Broadfin Healthcare Master Fund, Ltd. is 20 Genesis Close, Ansbacher House, Second Floor, P.O. Box 1344, Grand Cayman KY1-1108, Cayman Islands. This information is based on a Schedule 13G filed on March 27, 2013 with the Securities and Exchange Commission by each of the foregoing persons.

(8) Consists of 388,982 shares of common stock issuable upon the exercise of options exercisable within 60 days after September 30, 2013.

(9) Includes 84,956 shares of common stock issuable upon the exercise of options exercisable within 60 days after September 30, 2013.

(10) Consists of 80,950 shares of common stock issuable upon the exercise of options exercisable within 60 days after September 30, 2013.

(11) Consists of 94,251 shares of common stock issuable upon the exercise of options exercisable within 60 days after September 30, 2013.

(12) Consists of 27,196 shares of common stock issuable upon the exercise of options exercisable within 60 days after September 30, 2013.

(13) Consists of 29,792 shares of common stock issuable upon the exercise of options exercisable within 60 days after September 30, 2013.

(14) Consists of the shares described in note (4) above and 3,333 shares of common stock issuable upon the exercise of an option exercisable within 60 days after September 30, 2013. Dr. Freund is a Managing Member of Skyline Venture Management IV, LLC, which is the sole general partner of Skyline Venture Partners Qualified Purchaser Fund IV, L.P., and as such Dr. Freund may be deemed to share voting and dispositive power with respect to all shares held by Skyline Venture Partners Qualified Purchaser Fund IV, L.P. Dr. Freund disclaims beneficial ownership of such shares except to the extent of any pecuniary interest therein. Dr. Freund s address is 525 University Ave, Suite 520, Palo Alto, California 94301.

(15) Consists of the shares described in note (6) above and 3,333 shares of common stock issuable upon the exercise of an option exercisable within 60 days after September 30, 2013. Dr. Gullans is a Managing Director of Excel Venture Management, LLC, which is the sole general partner of Excel Medical Fund, L.P., and as such Dr. Gullans may be deemed to share voting and dispositive power with respect to all shares held by Excel Medical Fund, L.P. Dr. Gullans disclaims beneficial ownership of such shares except to the extent of any pecuniary interest therein. Dr. Gullans address is 800 Boylston St., Suite 2825, Boston, MA 02199.

(16) Includes 712,793 shares of common stock issuable upon the exercise of options exercisable within 60 days after September 30, 2013.

Table of Contents

DESCRIPTION OF CAPITAL STOCK

General

Our authorized capital stock consists of 125,000,000 shares of common stock, par value $0.001 per share, and 5,000,000 shares of preferred stock, par value $0.001 per share, all of which preferred stock is undesignated. The following description of our capital stock and provisions of our restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to our certificate of incorporation and bylaws. Copies of these documents are filed with the SEC as exhibits to our Quarterly Report on Form 10-Q filed with the SEC on May 13, 2013.

Common Stock

As of September 30, 2013, we had outstanding 20,676,298 shares of common stock, held of record by 36 stockholders. We believe that the number of beneficial owners of our common stock at that date was substantially greater.

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. An election of directors by our stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. 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. Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of outstanding preferred stock.

In the event of our liquidation or dissolution, the holders of common stock are entitled to receive proportionately all assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock. Holders of common stock have no preemptive, subscription, redemption or conversion rights. 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

Under the terms of our certificate of incorporation, our board of directors is authorized to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a majority of our outstanding voting stock. There are no shares of preferred stock outstanding, and we have no present plans to issue any shares of preferred stock.

Stock Options

As of September 30, 2013, options to purchase 2,866,985 shares of our common stock at a weighted average exercise price of $4.91 per share were outstanding, of which options to purchase 1,163,650 shares of our common stock were exercisable, at a weighted average exercise price of $1.64 per share.

Warrants

As of September 30, 2013, we had outstanding warrants to purchase 104,107 shares of our common stock at a weighted average exercise price of $7.68 per share. These warrants are exercisable in full.

Table of Contents

Registration Rights

We have entered into a second amended and restated registration rights agreement, dated as of May 14, 2010, which we refer to as the Registration Rights Agreement, with certain of our stockholders. As of September 30, 2013, holders of approximately 4,113,284 shares of our common stock, including for this purpose 54,751 shares issuable upon exercise of outstanding warrants, had the right to require us to register these shares under the Securities Act under specified circumstances and had incidental registration rights as described below. After registration pursuant to these rights, these shares will become freely tradable without restriction under the Securities Act.

Demand Registration Rights

Subject to specified limitations set forth in the Registration Rights Agreement, the holders of at least 40% of the then outstanding registrable securities, as defined in the Registration Rights Agreement, acting together, may demand in writing that we register their registrable securities under the Securities Act so long as the total amount of registrable securities registered has an aggregate proposed offering price of at least $5.0 million. We are not obligated to file a registration statement pursuant to this demand provision on more than two occasions, subject to specified exceptions.

In addition, at any time after we become eligible to file a registration statement on Form S-3 under the Securities Act, subject to specified limitations, the holders of at least 40% of the outstanding registrable securities may demand in writing that we register on Form S-3 the registrable securities held by them so long as the total amount of registrable securities being registered has an aggregate offering price of at least $2.0 million. We are not obligated to file a Form S-3 pursuant to this provision within six months of the effective date of any other registration statement that we may file.

Incidental Registration Rights

If we propose to file a registration statement to register any of our securities under the Securities Act, either for our own account or for the account of any of our stockholders, other than pursuant to the demand registration rights described above and other than pursuant to a Form S-4 or Form S-8, the holders of our registrable securities are entitled to notice of registration and, subject to specified exceptions, we will be required to use commercially reasonable efforts to register the registrable securities then held by them that they request that we register.

Expenses

Pursuant to the Registration Rights Agreement, we are required to pay all registration expenses, including registration and filing fees, printing expenses, fees and disbursements of our counsel and accountants, fees and expenses incurred in connection with complying with state securities or blue sky laws, fees of the Financial Industry Regulatory Authority, Inc., transfer taxes, fees of transfer agents and registrations, any insurance costs and reasonable fees and disbursements of one counsel representing the selling stockholders, other than any underwriting discounts and commissions, related to any demand or incidental registration. The Registration Rights Agreement contains customary cross-indemnification provisions, pursuant to which we are obligated to indemnify the selling stockholders in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions in the registration statement attributable to them.

Anti-Takeover Effects of Delaware Law and Our Charter and Bylaws

Delaware law, our certificate of incorporation and our bylaws contain provisions that could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are

summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids. These

Table of Contents

provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors.

Staggered Board; Removal of Directors

Our certificate of incorporation and bylaws divide our board of directors into three classes with staggered three-year terms. In addition, a director may be removed only for cause and only by the affirmative vote of the holders of at least 75% of the votes that all of our stockholders would be entitled to cast in an annual election of directors. Any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office. The classification of our board of directors and the limitations on the removal of directors and filling of vacancies could make it more difficult for a third party to acquire, or discourage a third party from seeking to acquire, control of our company.

Stockholder Action by Written Consent; Special Meetings

Our certificate of incorporation provides that any action required or permitted to be taken by our stockholders must be effected at a duly called annual or special meeting of such holders and may not be effected by any consent in writing by such holders. Our certificate of incorporation and bylaws also provide that, except as otherwise required by law, special meetings of our stockholders can only be called by our chairman of the board, our chief executive officer or our board of directors.

Advance Notice Requirements for Stockholder Proposals

Our bylaws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of stockholders, including proposed nominations of persons for election to our board of directors. Stockholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors or by a stockholder of record on the record date for the meeting who is entitled to vote at the meeting and who has delivered timely written notice in proper form to our secretary of the stockholder s intention to bring such business before the meeting. These provisions could have the effect of delaying until the next stockholder meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities.

Delaware Business Combination Statute

We are subject to Section 203 of the Delaware General Corporation Law. Subject to certain exceptions, Section 203 prevents a publicly-held Delaware corporation from engaging in a business combination with any interested stockholder for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in a prescribed manner. A business combination includes, among other things, a merger or consolidation involving us and the interested stockholder and the sale of more than 10% of our assets. In general, an interested stockholder is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

Amendment of Certificate of Incorporation and Bylaws

The Delaware General Corporation Law provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation s certificate of incorporation or bylaws, unless a corporation s certificate of incorporation or bylaws, as the case may be, requires a greater percentage. Our bylaws may

be amended or repealed by a majority vote of our board of directors or by the affirmative vote of the holders of at least 75% of the votes that all of our stockholders would be entitled to cast in any annual election of directors. In addition, the affirmative vote of the holders of at least 75% of the votes that all of our

Table of Contents

stockholders would be entitled to cast in any annual election of directors is required to amend or repeal or to adopt any provisions inconsistent with any of the provisions of our certificate of incorporation described above under Staggered Board; Removal of Directors and Stockholder Action by Written Consent; Special Meetings.

Listing on The NASDAQ Global Market

Our common stock is listed on The NASDAQ Global Market under the symbol TTPH.

Authorized but Unissued Shares

The authorized but unissued shares of common stock and preferred stock are available for future issuance without stockholder approval, subject to any limitations imposed by the NASDAQ Listing Rules. These additional shares may be used for a variety of corporate finance transactions, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could make it more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

Table of Contents

SHARES ELIGIBLE FOR FUTURE SALE

Future sales of significant amounts of our common stock, including shares issued upon exercise of outstanding options or warrants or in the public market after this offering, or the anticipation of those sales, could adversely affect the public market prices prevailing from time to time and could impair our ability to raise capital through sales of our equity securities. Our common stock is listed on The NASDAQ Global Market under the symbol TTPH.

Upon the closing of this offering, and after giving effect to the issuance of the 4,500,000 shares of our common stock offered in this offering, we will have outstanding an aggregate of 25,176,298 shares of common stock, assuming no exercise of outstanding options or warrants after September 30, 2013. Of these shares, the 4,500,000 shares sold by us (assuming that the underwriters do not exercise their option to purchase additional shares) in this offering, the 11,512,078 shares sold by us in our initial public offering and the 4,363 shares issued by us upon the exercise of stock options following our registration of such shares on a registration statement on Form S-8 on June 14, 2013, will be freely tradable without restriction or further registration under the Securities Act, subject to the lock-up agreements described below and except in each case for any shares purchased by our affiliates, as that term is defined in Rule 144 under the Securities Act, whose sales would be subject to the Rule 144 resale restrictions described below, other than the holding period requirement.

The remaining 9,159,852 shares of common stock are, to the extent such shares have not already been sold under an exemption from registration under Rule 144 or 701 under the Securities Act, restricted securities, as that term is defined in Rule 144. Subject to the lock-up agreements described below, these shares are eligible for public sale under Rule 144 or Rule 701, which are summarized below.

In addition, of the 2,866,985 shares of common stock that were issuable pursuant to stock options outstanding as of September 30, 2013, options to purchase 1,163,650 shares of common stock had vested and were exercisable as of September 30, 2013. Upon exercise, these shares will be freely tradable without restriction or further registration under the Securities Act, subject to the lock-up agreements described below and except for any shares purchased by our affiliates, as that term is defined in Rule 144 under the Securities Act, whose sales would be subject to the Rule 144 resale restrictions described below, other than the holding period requirement. All of the 104,107 shares of common stock that were issuable pursuant to warrants outstanding as of September 30, 2013, were exercisable as of September 30, 2013 and upon issuance these shares will be eligible for sale, subject to the lock-up agreements and securities laws described below.

Rule 144

Affiliate Resales of Restricted Securities

In general, under Rule 144 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 251,763 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 Stock Market concurrently with either the placing of a sale order with the broker or the execution directly with a market maker.

Table of Contents

Non-Affiliate Resales of Restricted Securities

In general, under Rule 144 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 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 our employees, directors, officers, consultants or advisors who purchased shares from us in connection with a compensatory stock or option plan or other written agreement entered into before the effective date of our initial public offering is entitled to sell such shares without further restriction under the Securities Act.

Lock-up Agreements

Our executive officers and directors 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 for a period through the date 90 days after the date of this prospectus, except with the prior written consent of the representatives of the underwriters.

The representatives of the underwriters currently do not anticipate shortening or waiving any of the lock-up agreements and do not have any pre-established conditions for such modifications or waivers. The representatives of the underwriters may, however, with the approval of our board of directors, release for sale in the public market all or any portion of the shares subject to the lock-up agreements.

Registration Rights

Subject to the lock-up agreements described above, upon the closing of this offering, the holders of an aggregate of approximately 4,113,284 shares of our common stock will have the right to require us to register these shares under the Securities Act under specified circumstances. After registration pursuant to these rights, these shares will become freely tradable without restriction under the Securities Act. See Description of Capital Stock Registration Rights for additional information regarding these registration rights.

Stock Options and Warrants

As of September 30, 2013, we had outstanding options to purchase 2,866,985 shares of common stock, of which options to purchase 1,163,650 shares of common stock were vested and exercisable. We have filed a registration statement on Form S-8 under the Securities Act to register all of the shares of common stock subject to these outstanding options and other awards issuable pursuant to the 2006 Plan and 2013 Plan.

As of September 30, 2013, we also had outstanding and exercisable warrants to purchase 104,107 shares of common stock. Any shares purchased by our non-affiliates pursuant to the cashless exercise features of our warrants will be freely tradable under Rule 144(b)(1). Any shares purchased through the exercise of these warrants for cash will be eligible for sale subject to securities laws described above.

145

Table of Contents

CERTAIN MATERIAL U.S. FEDERAL TAX CONSIDERATIONS

The following is a general discussion of the material U.S. federal income and estate tax considerations applicable to non-U.S. holders with respect to their ownership and disposition of shares of our common stock. This discussion is for general information only and is not tax advice. Accordingly, all prospective non-U.S. holders of our common stock should consult their own tax advisors with respect to the U.S. federal, state, local and non-U.S. tax consequences of the purchase, ownership and disposition of our common stock. For purposes of this discussion, a non-U.S. holder means a beneficial owner of our common stock who is not for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation or any other organization taxable as a corporation for U.S. federal income tax purposes, created or organized in the United States or under the laws of the United States or of 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 if (1) a U.S. court is able to exercise primary supervision over the trust s administration and one or more U.S. persons have the authority to control all of the trust s substantial decisions or (2) the trust has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

This discussion is based on current provisions of the U.S. Internal Revenue Code of 1986, as amended, which we refer to as the Code, existing and proposed U.S. Treasury Regulations promulgated thereunder, current administrative rulings and judicial decisions, all as in effect as of the date of this prospectus, all of which are subject to change or to differing interpretation, possibly with retroactive effect. Any change could alter the tax consequences to non-U.S. holders described in this prospectus. We assume in this discussion that a non-U.S. holder holds shares of our common stock as a capital asset, generally property held for investment.

This discussion does not address all aspects of U.S. federal income and estate taxation, including the Medicare contribution tax, that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder s individual circumstances nor does it address any aspects of U.S. state, local or non-U.S. taxes. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as:

- insurance companies;
- tax-exempt organizations;
- financial institutions;

brokers or dealers in securities;

regulated investment companies;

pension plans;

controlled foreign corporations;

passive foreign investment companies;

owners that hold our common stock as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment; and

certain U.S. expatriates.

In addition, this discussion does not address the tax treatment of partnerships or persons who hold our common stock through partnerships or other pass-through entities for U.S. federal income tax purposes. A partner in a partnership or other pass-through entity that will hold our common stock should consult his, her or its own tax advisor regarding the tax consequences of acquiring, holding and disposing of our common stock through a partnership or other pass-through entity, as applicable.

Table of Contents

There can be no assurance that the Internal Revenue Service, which we refer to as the IRS, will not challenge one or more of the tax consequences described herein, and we have not obtained, nor do we intend to obtain, a ruling from the IRS with respect to the U.S. federal income or estate tax consequences to a non-U.S. holder of the purchase, ownership or disposition of our common stock.

Distributions on Our Common Stock

Distributions on our common stock generally 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. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder s investment, up to such holder s tax basis in the common stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below in Gain on Sale, Exchange or Other Taxable Disposition of Our Common Stock. Any such distributions will also be subject to the discussion below under the section titled Withholding and Information Reporting Requirements FATCA.

Dividends paid to a non-U.S. holder generally will be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder s country of residence. If we determine, at a time reasonably close to the date of payment of a distribution on our common stock, that the distribution will not constitute a dividend because we do not anticipate having current or accumulated earnings and profits, we intend not to withhold any U.S. federal income tax on the distribution as permitted by U.S. Treasury Regulations. If we or another withholding agent withholds tax on such a distribution, a non-U.S. holder may be entitled to a refund of the tax withheld, which the non-U.S. holder may claim by timely filing the required information with the IRS.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. However, such U.S. effectively connected income, net of specified deductions and credits, is generally taxed at the same graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also, under certain circumstances, be subject to an additional branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder s country of residence.

A non-U.S. holder of our common stock who claims the benefit of an applicable income tax treaty between the United States and such holder s country of residence generally will be required to provide a properly executed IRS Form W-8BEN (or successor form) and satisfy applicable certification and other requirements. Non-U.S. holders are urged to consult their tax advisors regarding their entitlement to benefits under a relevant income tax treaty.

A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing the required information with the IRS.

Gain on Sale, Exchange or Other Taxable Disposition of Our Common Stock

In general, a non-U.S. holder will not be subject to any U.S. federal income tax on any gain realized upon such holder s sale, exchange or other taxable disposition of shares of our common stock unless:

the gain is effectively connected with the non-U.S. holder s conduct of a U.S. trade or business and, if an applicable income tax treaty so provides, is attributable to a permanent establishment or a fixed base maintained by such non-U.S. holder in the United States, in which case the non-U.S. holder generally

Table of Contents

will be taxed at the graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code) and, if the non-U.S. holder is a foreign corporation, the branch profits tax described above in Distributions on Our Common Stock also may apply;

the non-U.S. holder is a nonresident alien individual who is present in the United States for 183 days or more in the taxable year of the taxable disposition and certain other conditions are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder s country of residence) on the net gain derived from the taxable disposition, which may be offset by certain U.S. source capital losses of the non-U.S. holder, if any; or

we are, or have been, at any time during the five-year period preceding such taxable disposition (or the non-U.S. holder s holding period, if shorter) a U.S. real property holding corporation, unless our common stock is regularly traded on an established securities market and the non-U.S. holder holds no more than 5% of our outstanding common stock, directly or indirectly, during the shorter of the 5-year period ending on the date of the taxable disposition or the period that the non-U.S. holder held our common stock. If we are determined to be a U.S. real property holding corporation and the foregoing exception does not apply, then a purchaser may withhold 10% of the proceeds payable to a non-U.S. holder from a sale of our common stock and the non-U.S. holder generally will be taxed on its net gain derived from the disposition at the graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code). Generally, a corporation is a U.S. real property holding corporation only if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we do not believe that we are, or have been, a U.S. real property holding corporation, or that we are likely to become one in the future. No assurance can be provided that our common stock will be regularly traded on an established securities market for purposes of the rules described above.

U.S. Federal Estate Tax

Shares of our common stock that are owned or treated as owned at the time of death by an individual who is not a citizen or resident of the United States, as specifically defined for U.S. federal estate tax purposes, are considered U.S. situs assets and will be included in the individual s gross estate for U.S. federal estate tax purposes. Such shares, therefore, may be subject to U.S. federal estate tax, unless an applicable estate tax or other treaty provides otherwise.

Backup Withholding and Information Reporting

We must report annually to the IRS and to each non-U.S. holder the gross amount of the distributions on our common stock paid to such holder and the tax withheld, if any, with respect to such distributions. Non-U.S. holders may have to comply with specific certification procedures to establish that the holder is not a United States person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to dividends on our common stock. Dividends paid to non-U.S. holders subject to the U.S. withholding tax, as described above in Distributions on Our Common Stock, generally will be exempt from U.S. backup withholding.

Information reporting and backup withholding will generally apply to the proceeds of a disposition of our common stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or foreign, unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a

non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Non-U.S. holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them.

Table of Contents

Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder can be refunded or credited against the non-U.S. holder s U.S. federal income tax liability, if any, provided that an appropriate claim is timely filed with the IRS.

Withholding and Information Reporting Requirements FATCA

The Foreign Account Tax Compliance Act, or FATCA, will impose a U.S. federal withholding tax at a rate of 30% on payments of dividends on, or gross proceeds from the sale or other disposition of, our common stock paid to certain foreign entities, unless (i) if the foreign entity is a foreign financial institution, such foreign entity undertakes certain due diligence, reporting, withholding, and certification obligations, (ii) if the foreign entity is not a foreign financial institution, such foreign entity identifies certain of its U.S. investors, if any, or (iii) the foreign entity is otherwise exempt under FATCA. Although this legislation is effective with respect to amounts paid after December 31, 2012, under final U.S. Treasury Regulations and applicable IRS guidance, withholding under FATCA will only apply to payments of (1) dividends on our common stock made after June 30, 2014 and (2) gross proceeds from a sale or other disposition of our common stock made after December 31, 2016. Under certain circumstances, a non-U.S. holder may be eligible for refunds or credits of the tax. Certain intergovernmental agreements between the United States and other countries may modify these rules. Non-U.S. holders should consult their own tax advisors regarding the possible implications of this legislation on their investment in our common stock and the entities through which they hold our common stock, including, without limitation, the process and deadlines for meeting the applicable requirements to prevent the imposition of the 30% withholding tax under FATCA.

Table of Contents

UNDERWRITING

BMO Capital Markets Corp. and Stifel, Nicolaus & Company, Incorporated are acting as the representatives of the underwriters and the book-running managers of this offering. Under the terms of an underwriting agreement, which is filed as an exhibit to the registration statement, each of the underwriters named below has severally agreed to purchase from us the respective number of shares of common stock shown opposite its name below:

Underwriters	Number of Shares
BMO Capital Markets Corp.	1,687,500
Stifel, Nicolaus & Company, Incorporated	1,462,500
Guggenheim Securities, LLC	450,000
JMP Securities LLC	450,000
Needham & Company, LLC	450,000
Total	4,500,000

The underwriting agreement provides that the underwriters obligation to purchase shares of common stock depends on the satisfaction of the conditions contained in the underwriting agreement including:

- the representations and warranties made by us to the underwriters being true;
- there having been no material change in our business or the financial markets; and
- our delivery of customary closing documents to the underwriters.

Commissions and Expenses

The following table summarizes the underwriting discounts and commissions we will pay to the underwriters. These amounts are shown assuming both no exercise and full exercise of the underwriters option to purchase additional shares. The underwriting fee is the difference between the initial price to the public and the amount the underwriters pay to us for the shares.

	No Exercise	Full Exercise
Per Share	$ 0.60	$ 0.60
Total	$ 2,700,000	$ 3,105,000

The representatives have advised us that the underwriters propose to offer the shares of common stock directly to the public at the public offering price on the cover of this prospectus and to selected dealers, which may include the underwriters, at such offering price less a selling concession not in excess of $0.36 per share. After the offering, the representatives may change the offering price and other selling terms.

The expenses of this offering that are payable by us are estimated to be approximately $606,440 (excluding estimated underwriting discounts and commissions). We have also agreed to reimburse the underwriters for certain of their expenses, in an amount of up to $30,000, incurred in connection with review by the Financial Industry Regulatory Authority, Inc. of the terms of this offering, as set forth in the underwriting agreement.

Option to Purchase Additional Shares

We have granted the underwriters an option exercisable for 30 days after the date of this prospectus, to purchase, from time to time, in whole or in part, up to an aggregate of 675,000 shares from us at the public offering price less underwriting discounts and commissions. To the extent that this option is exercised, each underwriter will be obligated, subject to certain conditions, to purchase its pro rata portion of these additional shares based on the underwriter s percentage underwriting commitment in this offering as indicated in the table at the beginning of this Underwriting Section.

Table of Contents

Lock-Up Agreements

We and all of our directors and executive officers have agreed that, for a period of 90 days after the date of this prospectus subject to certain limited exceptions, we and they will not directly or indirectly, without the prior written consent of BMO Capital Markets Corp. and Stifel, Nicolaus & Company, Incorporated, (1) offer for sale, sell, pledge, or otherwise dispose of (or enter into any transaction or device that is designed to, or could be expected to, result in the disposition by any person at any time in the future of) any shares of common stock (including, without limitation, shares of common stock that may be deemed to be beneficially owned by them in accordance with the rules and regulations of the SEC and shares of common stock that may be issued upon exercise of any options or warrants) or securities convertible into or exercisable or exchangeable for common stock, (2) enter into any swap or other derivatives transaction that transfers to another, in whole or in part, any of the economic benefits or risks of ownership of shares of common stock, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of common stock or other securities, in cash or otherwise, (3) make any demand for or exercise any right or file or cause to be filed a registration statement, including any amendments thereto, with respect to the registration of any shares of common stock or securities convertible into or exercisable or exchangeable for common stock or any of our other securities, or (4) publicly disclose the intention to do any of the foregoing.

BMO Capital Markets Corp. and Stifel, Nicolaus & Company, Incorporated, in their sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time. When determining whether or not to release common stock and other securities from lock-up agreements, BMO Capital Markets Corp. and Stifel, Nicolaus & Company, Incorporated will consider, among other factors, the holder s reasons for requesting the release, the number of shares of common stock and other securities for which the release is being requested and market conditions at the time.

Indemnification

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make for these liabilities.

Stabilization, Short Positions and Penalty Bids

The representatives may engage in stabilizing transactions, short sales and purchases to cover positions created by short sales, and penalty bids or purchases for the purpose of pegging, fixing or maintaining the price of the common stock, in accordance with Regulation M under the Exchange Act:

Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum.

A short position involves a sale by the underwriters of shares in excess of the number of shares the underwriters are obligated to purchase in the offering, which creates the syndicate short position. This short position may be either a covered short position or a naked short position. In a covered short position, the number of shares involved in the sales made by the underwriters in excess of the number of shares they are obligated to purchase is not greater than the number of shares that they may purchase by exercising their option to purchase additional shares. In a naked short position, the number of shares involved is greater than the number of shares in their option to purchase additional shares. The underwriters may close out any short

position by either exercising their option to purchase additional shares and/or purchasing shares in the open market. In determining the source of shares to close out the 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 shares through their option to purchase additional shares. A naked short position is more likely to be created if the underwriters are concerned that there could be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in the offering.

Table of Contents

Syndicate covering transactions involve purchases of the common stock in the open market after the distribution has been completed in order to cover syndicate short positions.

Penalty bids permit the representatives to reclaim a selling concession from a syndicate member when the common stock originally sold by the syndicate member is purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of the common stock. As a result, the price of the common stock may be higher than the price that might otherwise exist in the open market. These transactions may be effected on The NASDAQ Global Market or otherwise and, if commenced, may be discontinued at any time.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of the common stock. In addition, neither we nor any of the underwriters make any representation that the representatives will engage in these stabilizing transactions or that any transaction, once commenced, will not be discontinued without notice.

Listing on The NASDAQ Global Market

Our common stock is listed on The NASDAQ Global Market under the symbol TTPH.

Stamp Taxes

If you purchase shares of common stock offered in this prospectus, you may be required to pay stamp taxes and other charges under the laws and practices of the country of purchase, in addition to the offering price listed on the cover page of this prospectus.

Other Relationships

The underwriters and certain of their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for the issuer and its affiliates, for which they received or may in the future receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of the issuer or its affiliates. If the underwriters or their affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriters and certain of their affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such securities or instruments

and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Table of Contents

Selling Restrictions

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State) an offer to the public of any common stock which are the subject of the offering contemplated herein may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any common stock may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

to legal entities which are qualified investors as defined under the Prospectus Directive;

by the underwriters to fewer than 100, or, if the Relevant Member State has implemented the relevant provisions of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives of the underwriters for any such offer; or

in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of common stock shall result in a requirement for us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

Each person in a Relevant Member State who receives any communication in respect of, or who acquires any common stock under, the offers contemplated here in this prospectus will be deemed to have represented, warranted and agreed to and with each underwriter and us that:

it is a qualified investor as defined under the Prospectus Directive; and

in the case of any common stock acquired by it as a financial intermediary, as that term is used in Article 3(2) of the Prospectus Directive, (i) the common stock acquired by it in the offering have not been acquired on behalf of, nor have they been acquired with a view to their offer or resale to, persons in any Relevant Member State other than qualified investors, as that term is defined in the Prospectus Directive, or in the circumstances in which the prior consent of the representatives of the underwriters has been given to the offer or resale or (ii) where common stock have been acquired by it on behalf of persons in any Relevant Member State other than qualified investors, the offer of such common stock to it is not treated under the Prospectus Directive as having been made to such persons.

For the purposes of this representation and the provision above, the expression an offer of common stock to the public in relation to any common stock 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 any common stock to be offered so as to enable an investor to decide to purchase or subscribe for the common stock, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State, the expression

Prospectus Directive means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in each Relevant Member State and the expression 2010 PD Amending Directive means Directive 2010/73/EU.

United Kingdom

This prospectus has only been communicated or caused to have been communicated and will only be communicated or caused to be communicated as an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act of 2000 (the FSMA)) as received in connection with the issue or sale of the common stock in circumstances in which Section 21(1) of the FSMA does not apply to us. All applicable provisions of the FSMA will be complied with in respect to anything done in relation to the common stock in, from or otherwise involving the United Kingdom.

Table of Contents

Switzerland

This document, as well as any other material relating to the shares which are the subject of the offering contemplated by this prospectus, do not constitute an issue prospectus pursuant to Article 652a and/or 1156 of the Swiss Code of Obligations. The shares will not be listed on the SIX Swiss Exchange and, therefore, the documents relating to the shares, including, but not limited to, this document, do not claim to comply with the disclosure standards of the listing rules of SIX Swiss Exchange and corresponding prospectus schemes annexed to the listing rules of the SIX Swiss Exchange. The shares are being offered in Switzerland by way of a private placement, i.e., to a small number of selected investors only, without any public offer and only to investors who do not purchase the shares with the intention to distribute them to the public. The investors will be individually approached by the issuer from time to time. This document, as well as any other material relating to the shares, is personal and confidential and does not constitute an offer to any other person. This document may only be used by those investors to whom it has been handed out in connection with the offering described herein and may neither directly nor indirectly be distributed or made available to other persons without express consent of the issuer. It may not be used in connection with any other offer and shall in particular not be copied and/or distributed to the public in (or from) Switzerland.

Hong Kong

The shares may not be offered or sold 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 Ordinance (Cap.32, Laws of Hong Kong), or (ii) to professional investors within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a prospectus within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), 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 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 within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) 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 under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the SFA), (ii) to a relevant person, or any person pursuant to Section 275(1A), 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.

Where the shares are subscribed or purchased under Section 275 by a relevant person which is: (i) a corporation (which is not an accredited investor) 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; or (ii) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries rights and interest in that trust shall not be transferable for 6 months after that corporation or that trust has acquired the shares under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person

pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

Table of Contents

Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the Financial Instruments and Exchange Law) and each underwriter has agreed that it will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

Electronic Distribution

A prospectus in electronic format may be made available on the Internet sites or through other online services maintained by one or more of the underwriters and/or selling group members participating in this offering, or by their affiliates. In those cases, prospective investors may view offering terms online and, depending upon the particular underwriter or selling group member, prospective investors may be allowed to place orders online. The underwriters may agree with us to allocate a specific number of shares for sale to online brokerage account holders. Any such allocation for online distributions will be made by the representatives on the same basis as other allocations.

Other than the prospectus in electronic format, the information on any underwriter s or selling group member s web site and any information contained in any other web site maintained by an underwriter or selling group member is not part of the prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or any underwriter or selling group member in its capacity as underwriter or selling group member and should not be relied upon by investors.

Table of Contents

LEGAL MATTERS

The validity of the common stock being offered will be passed upon for us by Wilmer Cutler Pickering Hale and Dorr LLP, Boston, Massachusetts. Certain legal matters related to this offering will be passed upon for the underwriters by Latham & Watkins LLP, Boston, Massachusetts.

EXPERTS

The consolidated financial statements of Tetraphase Pharmaceuticals, Inc. at December 31, 2011 and December 31, 2012 and for the years then ended and the period from July 7, 2006 (inception) to December 31, 2012, appearing in this Prospectus and Registration Statement have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon (which contains an explanatory paragraph describing conditions that raise substantial doubt about the Company s ability to continue as a going concern as described in Note 1 to the audited consolidated financial statements) appearing elsewhere herein, and are included in reliance upon such report given on the authority of such firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act of 1933 with respect to the shares of common stock to be sold in this offering. This prospectus, which constitutes part of the registration statement, does not include all of the information contained in the registration statement and the exhibits, schedules and amendments to the registration statement. Some items are omitted in accordance with the rules and regulations of the SEC. For further information with respect to us and our common stock, we refer you to the registration statement and to the exhibits and schedules to the registration statement filed as part of the registration statement. Statements contained in this prospectus about the contents of any contract or any other document filed as an exhibit are not necessarily complete, and, and in each instance, we refer you to the copy of the contract or other documents filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference.

You may read and copy the registration statement of which this prospectus is a part at the SEC s public reference room, which is located at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You can request copies of the registration statement by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the SEC s public reference room. In addition, the SEC maintains an Internet website, which is located at www.sec.gov, that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. You may access the registration statement of which this prospectus is a part at the SEC s Internet website.

We are subject to the full informational and periodic reporting requirements of the Exchange Act. We file periodic reports and other information with the SEC. We intend to furnish our stockholders with annual reports containing consolidated financial statements certified by an independent registered public accounting firm. We also maintain a website at www.tphase.com. Our website is not a part of this prospectus.

Table of Contents

INDEX TO FINANCIAL STATEMENTS

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Condensed Consolidated Balance Sheets

(In thousands except share and per share data)

(Unaudited)

	June 30, 2013	December 31, 2012
Assets		
Current assets:		
Cash and cash equivalents	$ 77,216	$ 9,079
Accounts receivable	2,912	2,452
Restricted cash	121	
Prepaid expenses and other current assets	674	850
Total current assets	80,923	12,381
Property and equipment, net	185	235
Restricted cash	40	161
Other assets	20	1,295
Total assets	$ 81,168	$ 14,072
Liabilities, convertible preferred stock and stockholders equity (deficit)		
Current liabilities:		
Accounts payable	$ 1,963	$ 2,018
Accrued expenses	3,235	2,303
Deferred revenue		699
Current portion of term loan payable	5,682	3,641
Total current liabilities	10,880	8,661
Preferred stock warrant liability		610
Accrued final interest payment on term loan	233	128
Term loan	7,478	7,881
Commitments and contingencies		
Convertible preferred stock, par value $0.001 per share: no shares and 259,044,157 shares authorized at June 30, 2013 and December 31, 2012, respectively; no shares and 256,024,993 shares issued and outstanding at June 30, 2013 and December 31, 2012, respectively		79,841
Stockholders equity (deficit):		
Preferred stock, par value $0.001 per share; 5,000,000 shares and no shares authorized at June 30, 2013 at December 31, 2012, respectively; no shares issued and outstanding at June 30, 2013 and December 31, 2012		
Common stock, par value $0.001 per share; 125,000,000 and 317,789,510 shares authorized at June 30, 2013 and December 31, 2012, respectively; 20,671,935 and 325,243 shares issued and outstanding at June 30, 2013 and December 31, 2012, respectively	21	
Additional paid-in capital	160,858	7,036
Deficit accumulated during the development stage	(98,302)	(90,085)
Total stockholders equity (deficit)	62,577	(83,049)
Total liabilities, convertible preferred stock and stockholders equity (deficit)	$ 81,168	$ 14,072

See accompanying notes to condensed consolidated financial statements

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

Condensed Consolidated Statements of Operations and Comprehensive Loss

(In thousands except per share data)

(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,		Period from July 7, 2006 (Inception) to June 30, 2013
	2013	2012	2013	2012	
Revenues	$ 3,722	$ 1,316	$ 6,422	$ 1,823	$ 14,207
Operating expenses					
Research and development	6,924	4,261	11,022	8,262	86,129
General and administrative	1,756	1,002	2,981	1,963	20,284
Total operating expenses	8,680	5,263	14,003	10,225	106,413
Loss from operations	(4,958)	(3,947)	(7,581)	(8,402)	(92,206)
Other income (expense)					
Interest income	2		2		610
Interest expense	(470)	(216)	(901)	(450)	(2,339)
Other (expense) income		(105)	263	(105)	(4,367)
Other expense, net	(468)	(321)	(636)	(555)	(6,096)
Net loss	$ (5,426)	$ (4,268)	$ (8,217)	$ (8,957)	$ (98,302)
Net loss per share applicable to common stockholders-basic and diluted	$ (0.26)	$ (13.42)	$ (0.73)	$ (28.60)	$ (96.85)
Weighted-average number of common shares used in net loss per share applicable to common stockholders-basic and diluted	20,575	318	11,263	313	1,015
Comprehensive loss	$ (5,426)	$ (4,268)	$ (8,217)	$ (8,957)	$ (98,302)

See accompanying notes to condensed consolidated financial statements

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Condensed Consolidated Statements of Cash Flows

(In thousands)

(Unaudited)

	Six Months Ended June 30,		The Period from July 7, 2006 (inception) to June 30, 2013
	2013	2012	
Operating activities			
Net loss	$ (8,217)	$ (8,957)	$ (98,302)
Adjustments to reconcile net loss to net cash used in operating activities			
Depreciation and amortization	72	206	2,451
Amortization of deferred financing costs and debt discount	177	67	476
Accretion of final interest payment on term loans	105		233
Fair value adjustment of warrants and investor right obligation	(263)	105	5,099
Stock-based compensation expense	335	222	1,881
Loss from disposal of property and equipment			5
Changes in operating assets and liabilities:			
Restricted cash			(161)
Accounts receivable	(460)	(844)	(2,912)
Prepaid expenses and other current assets	176	196	(643)
Accounts payable	392	204	1,964
Accrued expenses	1,135	(1,662)	3,235
Deferred revenue	(699)		
Net cash used in operating activities	(7,247)	(10,463)	(86,674)
Investing activities			
Purchases of property and equipment	(22)	(10)	(2,641)
Net cash used in investing activities	(22)	(10)	(2,641)
Financing activities			
Proceeds from sale of common stock, net of issuance costs	73,805		73,194
Proceeds from sale of convertible preferred stock, net of issuance costs			79,841
Deferred financing fees			(275)
Proceeds from issuance of term loan payable	3,000		18,750
Repayment of term loan payable	(1,409)	(857)	(5,156)
Proceeds from sale of restricted common stock and common stock to founders			20
Proceeds from exercise of stock options	10	20	157
Net cash provided by (used in) financing activities	75,406	(837)	166,531
Net increase (decrease) in cash and cash equivalents	$ 68,137	$ (11,310)	$ 77,216
Cash and cash equivalents at beginning of period	9,079	22,454	
Cash and cash equivalents at end of period	$ 77,216	$ 11,144	$ 77,216

Supplemental cash flow and noncash financing activities			
Cash paid for interest	$ 561	$ 355	$ 1,573
Fair value of warrants issued in connection with issuance of term loan	$ 115	$	$ 684
Reclassification of investors rights/liability to stockholders equity	$	$	$ 5,321
Conversion of convertible preferred stock into common stock	$ 79,832	$	$ 79,832
Reclassification of warrant liability to additional paid-in-capital	$ 462	$	$ 462
Reclassification of deferred financing costs to additional paid-in-capital	$ 1,261	$	$ 1,261

See accompanying notes to condensed consolidated financial statements

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(1) Organization and Operations

Tetraphase Pharmaceuticals, Inc. (the Company), is a clinical stage biopharmaceutical company that was incorporated in Delaware on July 7, 2006 and has a principal place of business in Watertown, Massachusetts, using its proprietary chemistry technology to create novel antibiotics for serious and life-threatening multi-drug resistant infections. The Company s lead product candidate, eravacycline, is a fully synthetic tetracycline derivative that the Company is developing as a broad-spectrum intravenous and oral antibiotic for use as a first-line monotherapy for the treatment of multi-drug resistant infections, including multi-drug Gram-negative infections. The Company completed a successful Phase 2 clinical trial of eravacycline with intravenous administration for the treatment of patients with complicated intra-abdominal infections, or cIAI, in 2012. The Company is conducting a Phase 3 clinical trial of eravacycline with intravenous administration for the treatment of cIAI and is planning to initiate a second Phase 3 clinical trial of eravacycline for the treatment of complicated urinary tract infections, or cUTI, with intravenous-to-oral step-down therapy by the end of 2013. Subject to obtaining additional financing beyond the offering contemplated by this prospectus, the Company intends to pursue development of eravacycline for the treatment of additional indications, including hospital-acquired bacterial pneumonias and other serious and life-threatening infections following its development of eravacycline for the treatment of cIAI and cUTI. The Company is also pursuing the discovery and development of additional antibiotics to target unmet medical needs.

The Company is in the development stage, and is devoting substantially all of its efforts to product research and development, initial market development, and raising capital. The Company has not generated any product revenue related to its primary business purpose to date and is subject to a number of risks similar to those of other development stage life science companies, including dependence on key individuals, competition from other companies, the need for development of commercially viable products, and the need to obtain adequate additional financing to fund the development of its product candidates. The Company is also subject to a number of risks similar to other companies in the industry, including rapid technological change, regulatory approval of products, uncertainty of market acceptance of products, competition from substitute products and larger companies, the need to obtain additional financing, compliance with government regulations, protection of proprietary technology, dependence on third parties, product liability, and dependence on key individuals.

The Company has incurred annual net operating losses in every year since its inception. The Company has not generated any product revenues related to its primary business purpose and has financed its operations primarily through public offerings of its common stock, private placements of its preferred stock, debt financings and funding from the United States government. The Company has not completed development of any product candidate and has devoted substantially all of its financial resources and efforts to research and development, including preclinical and clinical development. The Company expects to continue to incur significant expenses and increasing operating losses for at least the next several years.

As of June 30, 2013, the Company has incurred losses since inception of $98.3 million. The Company expects to continue to incur losses and require additional financial resources to advance its products to either commercial stage or liquidity events.

There can be no assurance that the Company will be able to obtain additional debt or equity financing or generate revenues from collaborative partners, on terms acceptable to the Company, on a timely basis or at all. The failure of the Company to obtain sufficient funds on acceptable terms when needed could have a material adverse effect on the Company s business, results of operations and financial condition.

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(1) Organization and Operations (continued)

Liquidity

In May 2011, the Company executed a Loan and Security Agreement (Term Loan) with two financial institutions, Silicon Valley Bank and Oxford Finance, which provided for up to $8.0 million in funding, to be made available in two tranches. The Company borrowed the first $1.5 million in May 2011 and the second tranche for the remaining $6.5 million in December 2011. On December 20, 2012, the Company amended the Term Loan to provide for up to an additional $9.2 million in funding, to be made available in two tranches (2012 Term Loan). The Company borrowed the first $6.2 million under the 2012 Term Loan on December 20, 2012. The Company borrowed the second tranche of $3.0 million on February 28, 2013.

In October 2011, the National Institutes of Health s (NIH) National Institute of Allergy and Infectious Diseases (NIAID) division awarded a contract of up to $35.8 million over a five-year term for the development of TP-271, a preclinical compound, for respiratory disease caused by bacterial biothreat pathogens (NIAID Contract) (Note 3). The Company is collaborating with CUBRC Inc., or CUBRC, an independent, not for profit, research corporation that specializes in U.S. government based contracts, on this NIAID Contract and has entered into a subcontract with CUBRC which could potentially provide funding to the Company of up to approximately $13.3 million over the five year term, including committed funding of $7.5 million from the initial contract date through September 30, 2016, of which $3.4 million had been received by the Company through June 30, 2013. In addition during 2011, the Company was a subawardee under a separate grant from the NIAID (NIAID Grant) (Note 3).

In February 2012 the Biomedical Advanced Research and Development Authority (BARDA), an agency of the U.S. Department of Health and Human Services, awarded a contract of up to $67.0 million for the development of eravacycline as a potential countermeasure for the treatment of disease caused by bacterial biothreat pathogens (BARDA Contract). The Company is also collaborating with CUBRC on the BARDA Contract and has entered into a subcontract with CUBRC which could potentially provide funding to the Company of up to approximately $39.8 million including committed funding of $15.6 million from the initial contract date through April 30, 2015, of which $7.5 million had been received by the Company through June 30, 2013 (Note 3).

In March 2013, the Company completed the sale of 10,714,286 shares of common stock at a price to the public of $7.00 per share, resulting in net proceeds to the Company of $68.1 million after deducting underwriting discounts and commissions of $4.4 million and offering costs of $2.5 million (the IPO). The Company s common stock began trading on the NASDAQ Global Market under the symbol TTPH on March 20, 2013. In addition, the Company granted the underwriters a 30-day option to purchase up to 1,607,143 additional shares of common stock at the initial public offering price to cover over allotments, if any. On April 12, 2013, the Company completed the additional sale of 797,792 shares of common stock under this option at a price to the public of $7.00 per share, resulting in net proceeds to the Company of $5.2 million after deducting underwriting discounts and commissions.

The Company believes that its cash resources of approximately $77.2 million at June 30, 2013 will be sufficient to allow the Company to fund its current operating plan and continue as a going concern through at least the first quarter of 2015. The Company will be required to obtain additional funding in order to continue to fund its operations after the first quarter of 2015. There can be no assurances, however, that the current operating

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(1) Organization and Operations (continued)

Liquidity (continued)

plan will be achieved in the timeframe anticipated by the Company, that its cash resources will fund the Company s operating plan for the period anticipated by the Company or that additional funding will be available on terms acceptable to the Company, or at all.

On February 28, 2013, the Company s board of directors approved an amendment to the Company s certificate of incorporation to effect a 1-for-29 reverse split of its Common Stock (the Reverse Split). The Company effected this amendment to its certificate of incorporation on March 5, 2013. All references to shares of Common Stock outstanding, average number of shares outstanding and per share amounts in these condensed consolidated financial statements and notes to condensed consolidated financial statements have been restated to reflect the Reverse Split on a retroactive basis.

(2) Summary of Significant Accounting Policies

Basis of Presentation

The accompanying interim condensed consolidated financial statements are unaudited. These unaudited financial statements have been prepared in accordance with the rules and regulations of the United States Securities and Exchange Commission (SEC) for interim financial information. Accordingly, they do not include all of the information and footnotes required by United States generally accepted accounting principles (GAAP) for complete financial statements. These unaudited interim consolidated financial statements should be read in conjunction with the audited consolidated financial statements and the accompanying notes for the year ended December 31, 2012 contained in the Company s prospectus filed with the SEC on March 20, 2013 pursuant to Rule 424(b)(4) under the Securities Act of 1933, as amended. The unaudited interim condensed consolidated financial statements have been prepared on the same basis as the annual consolidated financial statements and, in the opinion of management, reflect all adjustments (consisting of normal recurring adjustments) necessary to state fairly the Company s financial position as of June 30, 2013 and the results of operations and comprehensive loss for the three and six months ended June 30, 2013 and 2012 and cash flows for the six months ended June 30, 2013 and 2012. Interim operating results for the three and six months ended June 30, 2013 are not necessarily indicative of the results that may be expected for future interim periods or for the fiscal year ending December 31, 2013.

The December 31, 2012 condensed consolidated balance sheet included herein was derived from audited consolidated financial statements, but does not include all disclosures including notes required by GAAP for complete financial statements.

Segment Information

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company views its operations and manages its business in one operating segment, which is the business of developing and commercializing its proprietary chemistry technology to create novel antibiotics for serious and life-threatening multi-drug resistant infections.

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(2) Summary of Significant Accounting Policies (continued)

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, expenses other comprehensive income and related disclosures. On an ongoing basis, the Company s management evaluates its estimates, including estimates related to clinical trial accruals, stock-based compensation expense and reported amounts of contract and grant revenues and expenses during the reported period. The Company bases its estimates on historical experience and other market-specific or other relevant assumptions that it believes to be reasonable under the circumstances. Actual results may differ from those estimates or assumptions.

Concentrations of Credit Risk and Off-Balance Sheet Risk

Financial instruments that potentially subject the Company to concentrations of credit risk are primarily cash, cash equivalents and restricted cash. The Company maintains its cash and cash equivalent balances in the form of money market accounts with financial institutions that management believes are creditworthy. The Company s investment policy includes guidelines on the quality of the institutions and financial instruments and defines allowable investments that the Company believes minimizes the exposure to concentration of credit risk. The Company has no financial instruments with off-balance-sheet risk of loss.

Principles of Consolidation

The condensed consolidated financial statements include the accounts of the Company and its wholly owned subsidiary, Tetraphase Securities Corporation, a Massachusetts Securities Corporation. All significant intercompany balances and transactions have been eliminated in consolidation.

Cash and Cash Equivalents

The Company considers all highly liquid investments with maturities of three months or less from the date of purchase to be cash equivalents. Cash and cash equivalents at June 30, 2013 and December 31, 2012 consisted of cash and money market funds.

Fair Value Measurements

The Company s financial instruments consist principally of cash and cash equivalents, accounts receivable, accounts payable, accrued liabilities, term loan and liabilities related to warrants to purchase preferred stock. Fair value measurements are classified and disclosed in one of the following three categories:

Level 1	Quoted prices in active markets for identical assets or liabilities.
Level 2	Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(2) Summary of Significant Accounting Policies (continued)

Fair Value Measurements (continued)

Financial instruments measured at fair value as of June 30, 2013 and December 31, 2012 are classified below based on the three fair value hierarchy tiers described above (in thousands):

		Fair Value Measurements at Reporting Date Using		
	Balance	Level 1	Level 2	Level 3
June 30, 2013				
Cash	$ 5,216	$ 5,216	$	$
Money market funds, included in cash equivalents	$ 72,000	$ 72,000	$	$
December 31, 2012				
Cash	$ 5,854	$ 5,854	$	$
Money market funds, included in cash equivalents	$ 3,225	$ 3,225	$	$
Preferred stock warrant liability (Note 5)	$ (610)	$	$	$ (610)

The Company measures cash equivalents at fair value on a recurring basis. The fair value of cash equivalents is determined based on Level 1 inputs, which consist of quoted prices in active markets for identical assets. The fair value of the Company s term loan payable is determined using current applicable rates for similar instruments as of the balance sheet date. The carrying value of the Company s term loan payable approximates fair value because the Company s interest rate yield is near current market rates. The Company s term loan payable is a Level 3 liability within the fair value hierarchy.

The fair value of the preferred stock warrant liability as of December 31, 2012 and March 25, 2013 was determined based on Level 3 inputs utilizing the Black-Scholes option pricing model (Note 5). On March 25, 2013, upon completion of the IPO, the warrants to purchase preferred stock converted into warrants to purchase common stock and the Company reclassified the fair value of the warrants as of March 25, 2013 to additional paid-in capital. The following table presents activity in the preferred stock warrant liability during the six months ended June 30, 2013.

	Balance
Fair value at December 31, 2012	$ 610
Value of warrants issued in 2013	115
Decrease in fair value recognized in net loss	(263)
Reclassification of fair value to additional paid-in capital	(462)
Fair value at June 30, 2013	$

Accounts Receivable

Accounts receivable at June 30, 2013 and December 31, 2012 represent amounts due from CUBRC under the Company s subcontracts under the NIAID Contract and the BARDA Contract and under the Company s subaward under the NIAID Grant. The Company s practice is to bill the prime contractor amounts for which the Company has been invoiced by third parties in the case of contract research or subcontractor costs or for internal

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(2) Summary of Significant Accounting Policies (continued)

Accounts Receivable (continued)

costs incurred. Expenses directly associated with the Company s NIAID and BARDA Contracts and NIAID Grant that have been accrued at the end of the reporting period are not billed to the prime contractor until third party invoices have been received or until internal costs have been paid. Unbilled accounts receivable was approximately $1.7 million and $1.1 million at June 30, 2013 and December 31, 2012, respectively.

Property and Equipment, Net

Property and equipment are stated at cost, less accumulated depreciation and amortization. Depreciation and amortization are provided using the straight-line method over the estimated useful lives of the respective assets, generally three to five years. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful economic lives of the related assets.

Restricted Cash

At each of June 30, 2013 and December 31, 2012, the Company had $161,000 in restricted cash deposits with a bank of which $121,000 is collateral for a letter of credit issued to the landlord of the Company s leased facility. Should the Company default on its rental obligations, $121,000 will be payable to the lessor of the leased facility. In addition, the Company has $40,000 in restricted cash to secure the Company s corporate credit card issued through the same bank.

Revenue Recognition

The Company s revenue is derived from its subcontracts with CUBRC under the BARDA Contract and the NIAID Contract and its subaward under the NIAID Grant (Note 3). The Company recognizes revenue under these best-efforts, cost-reimbursable and cost-plus-fixed-fee subcontracts and subaward as the Company performs services under the subcontracts and subaward so long as a subcontract and subaward has been executed and the fees for these services are fixed or determinable, legally billable and reasonably assured of collection. Recognized amounts reflect the Company s partial performance under the subcontracts and subaward and equal direct and indirect costs incurred plus fixed fees, where applicable. The Company does not recognize revenue under these arrangements for amounts related to contract periods where funding is not yet committed as amounts above committed funding thresholds would not be considered fixed or determinable or reasonably assured of collection. Revenues and expenses under these arrangements are presented gross on the statements of operations and comprehensive loss as the Company has determined it is the primary obligor under these arrangements relative to the research and development services it performs as lead technical expert.

Revenue under the Company s subcontract with respect to the BARDA Contract is earned under a cost-reimbursable contract in which the Company is reimbursed for direct costs incurred plus allowable indirect costs. Billings under the Company s subcontract under the BARDA Contract are based on approved provisional indirect billing rates, which permit recovery of fringe benefits and allowable general and administrative expenses. For the three months ended June 30, 2013 and 2012, the Company recognized revenue of $3.1 million and $0.9 million, respectively, from the Company s subcontract under the BARDA Contract. For the six months ended June 30, 2013 and 2012, and the period from July 7, 2006 (inception) to June 30, 2013, the Company recognized revenue of $5.0 million, $1.0 million and $9.8 million, respectively, from the Company s subcontract under the BARDA Contract.

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(2) Summary of Significant Accounting Policies (continued)

Revenue Recognition (continued)

Revenue under the Company s subcontract with respect to the NIAID Contract is earned under a cost-plus-fixed-fee contract in which the Company is reimbursed for direct costs incurred plus allowable indirect costs and a fixed-fee earned. Billings under the Company s subcontract under the NIAID Contract are based on approved provisional indirect billing rates, which permit recovery of fringe benefits, allowable overhead and general and administrative expenses and a fixed fee. For the three months ended June 30, 2013 and 2012, the Company recognized revenue of $0.5 million and $0.4 million, respectively, from the Company s subcontract under the NIAID Contract. For the six months ended June 30, 2013 and 2012 and the period from July 7, 2006 (inception) to June 30, 2013, the Company recognized revenue of $1.2 million, $0.7 million and $3.9 million, respectively, from the Company s subcontract under the NIAID Contract.

Revenue under the Company s subaward with respect to the NIAID Grant is earned under a cost-reimbursable contract in which the Company is reimbursed for direct costs incurred plus allowable indirect costs. Billings under the Company s subaward under the NIAID Grant are based on approved provisional indirect billing rates, which permit recovery of fringe benefits and allowable general and administrative expenses. During the three months ended June 30, 2013 and 2012, the Company recognized revenue of $78,000 and $43,000, respectively, from the Company s subaward under the NIAID Grant. During the six months ended June 30, 2013 and 2012 and the period from July 7, 2006 (inception) to June 30, 2013, the Company recognized revenue of $231,000, $98,000 and $506,000, respectively, from the Company s subaward under the NIAID Grant.

Organizational Costs

All organizational costs are expensed as incurred.

Research and Development Expenses

Research and development costs are charged to expense as incurred and include, but are not limited to:

- employee-related expenses, including salaries, benefits, travel and stock-based compensation expense;
- expenses incurred under agreements with contract research organizations, contract manufacturing organizations and consultants that conduct clinical trials and preclinical studies;
- payments made under the Company s license agreement with Harvard University;
- the cost of acquiring, developing and manufacturing clinical trial materials;

facility, depreciation and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, insurance and other supplies; and

costs associated with preclinical activities and regulatory operations.

Costs for certain development activities, such as clinical trials, are recognized based on an evaluation of the progress to completion of specific tasks using data such as patient enrollment, clinical site activations, or information provided to the Company by its vendors on their actual costs incurred. Payments for these activities are based on the terms of the individual arrangements, which may differ from the pattern of costs incurred, and are reflected in the financial statements as prepaid or accrued research and development.

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(2) Summary of Significant Accounting Policies (continued)

Comprehensive Loss

Comprehensive loss consists of net income or loss and changes in equity during a period from transactions and other events and circumstances generated from non-owner sources. The Company s net loss equals comprehensive loss for all periods presented.

Income Taxes

The Company uses the liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial reporting and the tax reporting basis of assets and liabilities and are measured using the enacted tax rates and laws that are expected to be in effect when the differences are expected to reverse. The Company provides a valuation allowance against net deferred tax assets unless, based upon the available evidence, it is more likely than not that the deferred tax assets will be realized. The Company has evaluated available evidence and concluded that the Company may not realize the benefit of its deferred tax assets; therefore a valuation allowance has been established for the full amount of the deferred tax assets. The Company s practice is to recognize interest and/or penalties related to income tax matters in income tax expense.

Stock-Based Compensation Expense

Stock-based compensation is recognized as expense for all stock-based awards based on estimated fair values. The Company determines equity-based compensation at the grant date using the Black-Scholes option pricing model. The value of the award that is ultimately expected to vest is recognized as expense on a straight-line basis over the requisite service period using the estimated fair market value of the stock. Any changes to the estimated forfeiture rates are accounted for prospectively.

Recent Accounting Pronouncements

In February 2013, the Financial Accounting Standards Board (FASB) issued FASB Accounting Standards Update (ASU) No. 2013-02, *Comprehensive Income (Topic 220) Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income* (ASU 2013-02). ASU 2013-02 requires an entity to provide information about the amounts reclassified out of accumulated other comprehensive income by component. In addition, an entity is required to present, either on the face of the financial statements or in the notes, significant amounts reclassified out of accumulated other comprehensive income by the respective line items of net income, but only if the amount reclassified is required under GAAP to be reclassified to net income in its entirety in the same reporting period. For amounts that are not required to be reclassified in their entirety to net income, an entity is required to cross-reference to other disclosures that provide additional details about those amounts. ASU 2013-02 is effective prospectively for reporting periods beginning after December 15, 2012. The adoption of this ASU did not have an impact on the Company s condensed consolidated financial statements.

Subsequent Events

The Company considers events or transactions that occur after the balance sheet date but prior to the issuance of the financial statements to provide additional evidence relative to certain estimates or to identify matters that require additional disclosure.

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(2) Summary of Significant Accounting Policies (continued)

Net Loss per Common Share

Basic net loss per share is calculated by dividing the net loss applicable to common stockholders by the weighted average number of shares of Common Stock outstanding for the period, without consideration for common stock equivalents. Diluted net loss per share is computed by dividing the net loss applicable to common stockholders by the weighted average number of common share equivalents outstanding for the period determined using the treasury-stock method. For purposes of this calculation, preferred stock, stock options and warrants are considered to be common stock equivalents and are only included in the calculation of diluted net loss per share when their effect is dilutive.

Effective as of the completion of the IPO, all of the Company s preferred stock was converted to common stock at a 1-for-29 ratio as a result of the Reverse Split. For purposes of calculating net loss per common share for the three and six months ended June 30, 2013 and the period from July 7, 2006 (inception) to June 30, 2013, the preferred stock that converted to common stock was included in the net loss per common share calculation on a post-conversion basis as of March 25, 2013, the effective date of conversion, and the corresponding converted shares were included on a pro-rata basis for each applicable reporting period. As a result, the weighted-average common shares outstanding during the three and six months ended June 30, 2013 and the period from July 7, 2006 (inception) to June 30, 2013, was 20.6 million, 11.3 million and 1.0 million, respectively, as compared to 20.7 million shares outstanding as of June 30, 2013.

The amounts in the table below were excluded from the calculation of diluted weighted-average shares outstanding, prior to the use of the treasury stock method, due to their anti-dilutive effect:

	June 30,		The Period from July 7, 2006 (inception) to June 30,
	2013	2012	2013
Preferred stock		8,828,438	
Warrants	104,107	54,751	104,107
Outstanding stock options	2,686,888	1,446,491	2,686,888

(3) Significant Agreements and Contracts

License Agreement

In August 2006, the Company entered into a license agreement for certain intellectual property with Harvard University (the University). The agreement required the Company to pay a nonrefundable license fee of $250,000 and certain accrued patent expenses of approximately $61,000, and to issue 31,379 shares of common stock to the University upon the closing of a successful financing. Such consideration, which totaled $312,000, was recorded in research and development expenses in 2006.

The Company is obligated to make certain payments totaling up to, approximately $15.1 million upon achievement of certain development and regulatory milestones and royalties on net sales of products covered by the agreement. The Company made no payments to the University during the three and six months ended June 30, 2013 and June 30, 2012. The Company has made a total of $1.7 million in upfront and milestone

payments to the University since inception.

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(3) Significant Agreements and Contracts (continued)

License Agreement (continued)

In January 2007 and April 2010, the Company and the University amended the license agreement to include certain additional intellectual property. The Company paid an additional $25,000 with each amendment. In February 2011, the license agreement was further amended to include additional intellectual property in the license granted by the University without the payment of any additional consideration.

Government Grant and Contracts

BARDA Contract for Eravacycline

The Company has received funding for its lead product candidate, eravacycline, under an award from BARDA. In January 2012, BARDA awarded a five-year contract that provides for up to a total of $67.0 million in funding for the development, manufacturing and clinical evaluation of eravacycline for the treatment of disease caused by bacterial biothreat pathogens.

In connection with the BARDA Contract, in February 2012, the Company entered into a five-year cost-plus-fixed-fee subcontract with CUBRC under which it may receive funding of up to approximately $39.8 million, reflecting the portion of the BARDA funding that may be paid to the Company for its activities.

Although the BARDA Contract, and the Company s subcontract with CUBRC under the BARDA Contract, have five-year terms, BARDA is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond current-year amounts from Congressionally approved annual appropriations. As of June 30, 2013, committed funding from CUBRC under the Company s BARDA subcontract has increased by $9.3 million from $6.3 million during the original twelve-month base period ended January 31, 2013 to $15.6 million through the current contract end date, which has been extended to April 30, 2015 as a result of the exercise of several options by BARDA under the BARDA Contract. Total funds of $7.5 million have been received by the Company through June 30, 2013 under this contract.

NIAID Grant and Contract for TP-271

The Company has received funding for its preclinical compound TP-271 under two awards from NIAID for the development, manufacturing and clinical evaluation of TP-271 for respiratory diseases caused by biothreat and antibiotic-resistant public health pathogens, as well as bacterial pathogens associated with community-acquired bacterial pneumonia:

the NIAID Grant awarded in July 2011 that provides up to a total of approximately $2.8 million over five years; and

the NIAID Contract awarded in September 2011 that provides up to a total of approximately $35.8 million in funding over five years.

In connection with the NIAID Grant, in November 2011, CUBRC awarded the Company a 55-month, no-fee subaward of approximately $980,000, reflecting the portion of the NIAID Grant funding that may be paid to the Company for its activities.

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(3) Significant Agreements and Contracts (continued)

Government Grant and Contracts (continued)

In connection with the NIAID Contract, in October 2011, the Company entered into a five-year cost-plus-fixed-fee subcontract with CUBRC under which the Company may receive funding of up to approximately $13.3 million, reflecting the portion of the NIAID Contract funding that may be paid to the Company for its activities.

Although the NIAID Contract, the NIAID Grant and the Company s subcontract with CUBRC under the NIAID Contract have terms of five years, and the Company s subaward under the NIAID Grant has a term of 55 months, NIAID is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond September 30, 2016. To the extent NIAID ceases to provide funding of the programs to CUBRC, CUBRC has the right to cease providing funding to the Company. As of June 30, 2013, committed funding from CUBRC under the Company s subcontract with respect to the NIAID Contract has increased by $1.6 million from $5.9 million during the original 25-month base period ended October 31, 2013 to $7.5 million through the current contract end date which has been extended to September 30, 2016. Total funds of $3.4 million had been received through June 30, 2013. Committed funding from CUBRC under the Company s subaward with respect to the NIAID Grant increased by $0.1 million during the three months ending June 30, 2013 from $0.6 million to $0.7 million through the current contract end date, which was extended from May 31, 2013 to May 31, 2016. Total funds of $0.4 million had been received through June 30, 2013.

(4) Accrued Expenses

Accrued expenses at June 30, 2013 and December 31, 2012 consisted of the following (in thousands):

	June 30, 2013	December 31, 2012
Clinical	$ 1,231	$ 470
Salaries and benefits	875	963
Manufacturing	616	210
Professional fees	225	320
Other	288	340
Total	$ 3,235	$ 2,303

(5) Long-Term Debt

In May 2011, the Company executed the Term Loan with Silicon Valley Bank and Oxford Finance, which provided for up to $8.0 million funding, to be made available in two tranches. The Company borrowed the first $1.5 million in May 2011 and the second tranche for the remaining $6.5 million in December 2011. The Term Loan bears interest at 10% per annum and provides for a final payment of 2.75% of the original principal due at the maturity date of November 1, 2014. Under the terms of the Term Loan, the Company was only required to pay interest (and not principal) on the first tranche and the second tranche through February 28, 2012. Each tranche will be repaid in 33 monthly payments of equal principal, plus accrued interest, after the interest only period which ended February 28, 2012. The final payment of 2.75%

will be due at the same time as the last loan

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(5) Long-Term Debt (continued)

payment. The Term Loan matures on November 1, 2014. In connection with the entry into the Loan and Security Agreement, the Company issued to the lenders 10-year warrants to purchase an aggregate of 1,555,815 shares of Series C Preferred Stock at a price of $0.2571 per share.

In December 2012, the Company amended the Term Loan to provide for up to an additional $9.2 million in funding, to be made available in two tranches (2012 Term Loan). The Company borrowed the first $6.2 million under the 2012 Term Loan in December 2012 (2012 Term A Loan) and borrowed the remaining $3.0 million in February 2013 (2012 Term B Loan). Both the 2012 Term Loan A and the 2012 Term B Loan bear interest at 9% per annum.

The Company is only required to pay interest (and not principal) for the first six months of each tranche of the 2012 Term Loan. Each tranche of the 2012 Term Loan is to be repaid in 33 equal monthly payments of principal, plus accrued interest, after the interest only period. An additional payment of 2.90% of the original principal amount of each tranche will be due at the same time as the last loan payment for the tranche. The 2012 Term A Loan matures on March 1, 2016. In connection with the funding of the 2012 Term A Loan, the Company issued to the lenders 10-year warrants to purchase an aggregate of 964,605 shares of Series C Preferred Stock with an exercise price of $0.2571 per share. The 2012 Term B Loan matures on May 1, 2016. In connection with the funding of the 2012 Term B Loan, in February 2013, the warrant the Company issued to Silicon Valley Bank automatically became exercisable for an additional 233,372 shares of Series C Preferred Stock. In addition, the Company issued to Oxford Finance a 10-year warrant to purchase an additional 233,372 shares of Series C Preferred Stock with an exercise price of $0.2571 per share. The Company initially valued the warrants issued in 2013 at $115,000 using the Black-Scholes option pricing model with the following assumptions: risk-free interest rate of 1.89%, dividend yield of zero, expected volatility rate of 59% and an expected life of ten years. The Company is expensing this value of the warrant as additional interest over the term of the loan. The warrant was classified as a liability in accordance with Accounting Standards Codification (ASC) 480 and was subject to remeasurement at each balance sheet date and changes to the fair value were recognized as a component of other income (expense) in the statement of operations and comprehensive loss.

Upon completion of the IPO, the warrants related to the Term Loan became exercisable for 53,648 shares of the Company s common stock at an exercise price of $7.46 per share, the warrants related to the 2012 Term A Loan became exercisable for 33,262 shares of the Company s common stock at an exercise price of $7.46 per share and the warrants related to the 2012 Term B Loan became exercisable for 16,094 shares of the Company s common stock at an exercise price of $7.46 per share. On the date of the conversion of the warrants, the Company revalued the outstanding warrants using the Black-Scholes option pricing model with the following assumptions: risk-free interest rate of 0.67% to 1.84%, dividend yield of zero, expected volatility rate of 59%, expected term of 5 to 10 years and stock price of $7.00. The fair value of the warrants at March 25, 2013 was $462,000. The Company recorded other income of $263,000 in the statement of operations and comprehensive loss during the three and six months ended June 30, 2013 equal to the change in fair value of the warrants from December 31, 2012 to March 25, 2013. The Company reclassified the fair value of the warrants at March 25, 2013, of $462,000, to additional paid-in capital.

The Term Loan and the 2012 Term Loan are collateralized by a blanket lien on all corporate assets, excluding intellectual property, and by a negative pledge of the Company s intellectual property. The Term Loan and the 2012 Term Loan contain customary default provisions that include material adverse events, as defined

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(5) Long-Term Debt (continued)

therein. The Company has determined that the risk of subjective acceleration under the material adverse events clause is remote and therefore has classified the outstanding principal in current and long-term liabilities based on scheduled principal payments.

Future principal payments on the Term Loan and the 2012 Term Loan are as follows (amounts in thousands):

Years Ending December 31:	
2013 (6 months remaining)	$ 2,823
2014	6,126
2015	3,513
2016	1,132
Total term loan principal payments	13,594
Current term loan payable	5,949
Less debt discount and issuance costs	(267)
Current term loan payable (net)	5,682
Term loan payable, less current portion	7,645
Less debt discount and issuance costs	(167)
Term loan payable, net	$ 7,478

(6) Stockholders Equity (Deficit)

Initial Public Offering

In March 2013, the Company completed its IPO, issuing 10,714,286 shares of common stock at a price to the public of $7.00 per share, resulting in net proceeds to the Company of $68.1 million after deducting underwriting discounts of $4.4 million and offering costs of $2.5 million.

In connection with the IPO, all of the Company s outstanding preferred stock automatically converted into a total of 8,828,438 shares of its common stock, and the Company reclassified the preferred stock warrant liability of $0.5 million to additional paid-in capital upon the conversion of warrants to purchase preferred stock into warrants to purchase common stock.

On April 12, 2013, the Company completed the sale of an additional 797,792 shares of Common Stock under the underwriters option in the IPO at a price to the public of $7.00 per share, resulting in net proceeds to the Company of $5.2 million after deducting underwriting discounts and commissions.

(7) Stock-based Compensation

In August 2006, the Company adopted the Tetraphase Pharmaceuticals, Inc. Stock Incentive Plan (the 2006 Plan) under which it may grant incentive stock options, nonqualified stock options, restricted stock, and stock grants to purchase up to 1,128,183 shares of Common Stock. In May 2010, the Company amended the plan to increase the number of shares of Common Stock issuable under the 2006 Plan to 1,853,288. The options expire ten years after the grant date. As of June 30, 2013, no shares were available for future issuance under the 2006 Plan.

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(7) Stock-based Compensation (continued)

In February 2013, the Company s board of directors and stockholders approved, effective upon the closing of the IPO, the 2013 Stock Incentive Plan (the 2013 Plan). Under the 2013 Plan, the Company may grant incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock, restricted stock units and other stock-based awards for the purchase of that number of shares of Common Stock equal to the sum of (i) 1,688,777 shares of Common Stock, (ii) 258,265 shares of Common Stock that were reserved for issuance under the 2006 Plan that remained available for issuance under the 2006 Plan upon the closing of the IPO, (iii) any shares of Common Stock subject to awards under the 2006 Plan which awards expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by the Company without having been fully exercised or resulting in any Common Stock being issued. In addition, the number of shares of Common Stock that may be issued under the 2013 Plan is subject to automatic annual increases, to be added on January 1 of each year from January 1, 2014 through and including January 1, 2023, equal to the lowest of the number of shares that is the lesser of (a) 3,000,000, (b) 4% of the then outstanding shares of Common Stock or (c) an amount determined by the Company s board of directors. As of June 30, 2013, 696,102 shares were available for future issuance under the 2013 Plan.

Terms of stock award agreements, including vesting requirements, are determined by the board of directors, subject to the provisions of the 2013 Plan. Options granted by the Company typically vest over a four year period. Certain of the options are subject to acceleration of vesting in the event of certain change of control transactions. The options are exercisable from the date of grant for a period of ten years. For options granted to date, the exercise price equaled the estimated fair value of the Common Stock as determined by the board of directors on the date of grant.

The following table summarizes stock option activity at June 30, 2013 and changes during the six months then ended is presented in the table and narrative below (in thousands except share and per share data):

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Options outstanding at December 31, 2012	1,442,810	$ 1.67	7.43	$ 10,569
Granted	1,250,940	7.87		
Exercised	(6,176)	1.58		
Forfeited				
Canceled	(686)	0.87		
Options outstanding at June 30, 2013	2,686,888	$ 4.55	8.30	$ 7,703
Options vested or expected to vest at June 30, 2013 (1)	2,628,763	$ 4.52	8.28	$ 7,615
Options exercisable at June 30, 2013	1,081,022	$ 1.61	6.61	$ 5,865

(1) This represents the number of vested stock options as of June 30, 2013, plus the number of unvested stock options that the Company estimated as of June 30, 2013 would vest, based on the unvested stock options at June 30, 2013, as adjusted for the estimated forfeiture rate of 2%.

Table of Contents

TETRAPHASE PHARMACEUTICALS, INC.

(A Development Stage Company)

June 30, 2013

Notes to Condensed Consolidated Financial Statements

(Unaudited)

(7) Stock-based Compensation (continued)

Stock-based compensation expense recognized in the Company s condensed consolidated statements of operations for stock options granted during the periods presented was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,		The Period from July 7, 2006 (inception) to June 30, 2013
	2013	2012	2013	2012	
Research and development	$ 140	$ 121	$ 152	$ 160	$ 1,148
General and administrative	140	32	183	62	733
Total	$ 280	$ 153	$ 335	$ 222	$ 1,881

As of June 30, 2013, approximately $5.6 million of total unrecognized stock-based compensation expense related to unvested stock options is expected to be recognized over a weighted-average period of 3.7 years.

Table of Contents

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of

Tetraphase Pharmaceuticals, Inc.

We have audited the accompanying consolidated balance sheets of Tetraphase Pharmaceuticals, Inc. (a development stage enterprise) (the Company) as of December 31, 2011 and 2012, and the related consolidated statements of operations and comprehensive loss, convertible preferred stock and stockholders equity (deficit) and cash flows for the years then ended and the period from July 7, 2006 (inception) to December 31, 2012. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Company s internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Tetraphase Pharmaceuticals, Inc. (a development stage enterprise) as of December 31, 2011 and 2012 and the consolidated results of its operations and its cash flows for the years then ended and the period from July 7, 2006 (inception) to December 31, 2012, in conformity with U.S. generally accepted accounting principles.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As more fully described in Note 1, the Company has incurred operating losses and negative cash flows from operations since inception and will be required to obtain additional financing, alternative means of financial support or both prior to December 31, 2013 in order to continue to fund its operations. These factors raise substantial doubt about its ability to continue as a going concern. Management s plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classifications of liabilities that may result from the outcome of this uncertainty.

/s/ Ernst & Young LLP

Boston, Massachusetts

February 21, 2013, except for the matters disclosed in

Note 13, as to which the date is February 28, 2013

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Consolidated Balance Sheets

(In thousands except share and per share data)

	December 31, 2011	December 31, 2012 Actual	December 31, 2012 Pro forma (Unaudited)
Assets			
Current assets:			
Cash and cash equivalents	$ 22,454	$ 9,079	$ 9,079
Accounts receivable	185	2,452	2,452
Prepaid expenses and other current assets	735	850	850
Total current assets	23,374	12,381	12,381
Property and equipment, net	534	235	235
Restricted cash	161	161	161
Other assets		1,295	1,295
Total assets	$ 24,069	$ 14,072	$ 14,072
Liabilities, convertible preferred stock and stockholders equity (deficit)			
Current liabilities:			
Accounts payable	$ 800	$ 2,018	$ 2,018
Accrued liabilities and other	3,977	2,303	2,303
Deferred revenue		699	699
Current portion of term loan payable	2,197	3,641	3,641
Total current liabilities	6,974	8,661	8,661
Preferred stock warrant liability	306	610	
Accrued final interest payment on term loan		128	128
Term loan	5,551	7,881	7,881
Commitments and contingencies (Note 11)			
Series A-1 convertible preferred stock, $0.001 par value; Authorized 10,072,000 shares, actual, and no shares pro forma; issued and outstanding 10,040,000 shares at December 31, 2011, and December 31, 2012, respectively, actual, and no shares issued and outstanding pro forma (aggregate liquidation preference of $5,991,872)	9,925	9,925	
Series A-2 convertible preferred stock, $0.001 par value; Authorized 13,095,646 shares, actual, and no shares pro forma; issued and outstanding 13,095,646 shares at December 31, 2011, and December 31, 2012, respectively, actual, and no shares issued and outstanding pro forma (aggregate liquidation preference of $8,988,851)	15,055	15,055	
Series B convertible preferred stock, $0.001 par value; Authorized 57,471,225 shares, actual, and no shares pro forma; issued and outstanding 57,471,225 shares at December 31, 2011, and December 31, 2012, respectively, actual, and no shares issued and outstanding pro forma (aggregate liquidation preference of $10,063,211)	9,946	9,946	
Series C convertible preferred stock, $0.001 par value; Authorized 176,973,937 shares at December 31, 2011 and 178,405,286 shares at December 31, 2012, actual, and no shares pro forma; issued and outstanding 175,418,122 shares at December 31, 2011 and December 31, 2012, respectively, actual, and no shares issued and outstanding pro forma (aggregate liquidation preference of $45,099,999)	44,915	44,915	
Stockholders equity (deficit):			
Common stock, $0.001 par value; Authorized 316,358,161 shares at December 31, 2011 and 317,789,510 shares at December 31, 2012, respectively, actual, and 317,789,510 shares pro forma; issued and outstanding 306,280 shares and 325,243 shares at December 31, 2011 and December 31, 2012, respectively, actual, and 9,153,681 shares pro forma			

Additional paid-in-capital	6,395	7,036	87,478
Deficit accumulated during the development stage	(74,998)	(90,085)	(90,085)
Total stockholders deficit	(68,603)	(83,049)	(2,598)
Total liabilities, convertible preferred stock and stockholders deficit	$ 24,069	$ 14,072	$ 14,072

See accompanying notes to consolidated financial statements.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Consolidated Statements of Operations and Comprehensive Loss

(In thousands except share and per share data)

	Years Ended December 31,		The Period from July 7, 2006 (inception) to December 31, 2012
	2011	2012	
Statement of Operations Data:			
Contract and grant revenue	$ 185	$ 7,600	$ 7,785
Operating expenses:			
Research and development	17,737	17,294	74,930
General and administrative	3,874	4,309	17,480
Total operating expenses	21,611	21,603	92,410
Loss from operations	(21,426)	(14,003)	(84,625)
Other income (expense):			
Interest income	1		608
Interest expense	(161)	(1,021)	(1,438)
Other income (expense)	22	(63)	(4,630)
Total other income (expense)	(138)	(1,084)	(5,460)
Net loss	$ (21,564)	$ (15,087)	$ (90,085)
Net loss per share applicable to common stockholders-basic and diluted	$ (73.34)	$ (47.54)	$ (390.04)
Weighted-average number of common shares used in net loss per share applicable to common stockholders-basic and diluted	294,031	317,340	230,965
Pro forma net loss per share applicable to common stockholders-basic and diluted (unaudited)	$ (2.36)	$ (1.65)	
Weighted-average number of common shares used in pro forma net loss per share applicable to common stockholders-basic and diluted (unaudited)	9,122,476	9,145,785	
Comprehensive loss	$ (21,564)	$ (15,087)	$ (90,085)

See accompanying notes to consolidated financial statements.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Consolidated Statements of Convertible Preferred Stock and Stockholders Equity (Deficit)

(In thousands except share and per share data)

	Series A-1 Convertible Preferred Shares		Series A-2 Convertible Preferred Shares		Series B Convertible Preferred Shares		Series C Convertible Preferred Shares		Common Shares			Deficit Accumulated	
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Additional Paid-In Capital	During the Development Stage	Total Stockholde Equity (Deficit)
lance at ly 7, 2006 ception)		$		$		$		$		$	$	$	$
suance of unders mmon stock									141,028		4		4
ommon stock sued for ense									31,378		1		1
suance of ries A-1 nvertible eferred stock, t of issuance sts of 15,049	10,040,000	6,712											
ock mpensation pense											1		1
et loss												(1,217)	(1,217
lance at ecember 31, 06	10,040,000	6,712							172,406		6	(1,217)	(1,211
ock-based mpensation											5		5
et loss												(7,071)	(7,071
lance at ecember 31, 07	10,040,000	6,712							172,406		11	(8,288)	(8,277
eclassification Invest or ghts/liability on settlement		3,213									5,321		5,321
esting of stricted stock									10,660		9		9
suance of ries of A-2 nvertible eferred stock, t of issuance sts of $5,428			13,095,646	15,055									
xercise of ock options									1,552		1		1
											34		34

ock-based mpensation pense												
et loss											(12,760)	(12,760)
lance at ecember 31, 08	10,040,000	9,925	13,095,646	15,055					184,618	5,376	(21,048)	(15,672)
esting of stricted stock									4,188	4		4
suance of ries B nvertible eferred stock, t of issuance sts of 17,171					57,471,225	9,946						
ercise of ock options									78,055	69		69
ock-based mpensation pense										265		265
et loss											(14,908)	(14,908)
lance at ecember 31, 09	10,040,000	9,925	13,095,646	15,055	57,471,225	9,946			266,861	5,714	(35,956)	(30,242)
esting of stricted stock									3,427	3		3
suance of ries C nvertible eferred stock, t of issuance sts of 85,093							175,418,122	44,915				
ercise of ock options									16,183	16		16
ock-based mpensation pense										317		317
et loss											(17,478)	(17,478)
lance at ecember 31, 10	10,040,000	9,925	13,095,646	15,055	57,471,225	9,946	175,418,122	44,915	286,471	6,050	(53,434)	(47,384)
ercise of ock options									19,809	33		33
ock-based mpensation pense										312		312
et loss											(21,564)	(21,564)
lance at ecember 31, 11	10,040,000	9,925	13,095,646	15,055	57,471,225	9,946	175,418,122	44,915	306,280	6,395	(74,998)	(68,603)
ercise of ock options									18,963	29		29
ock-based mpensation pense										612		612
et loss											(15,087)	(15,087)
lance at ecember 31, 12	10,040,000	9,925	13,095,646	15,055	57,471,225	9,946	175,418,122	44,915	325,243	7,036	(90,085)	(83,049)

eclassification warrants for mmon stock naudited)											610		610
onversion of nvertible eferred stock to common ock naudited)	(10,040,000)	(9,925)	(13,095,646)	(15,055)	(57,471,225)	(9,946)	(175,418,122)	(44,915)	8,828,438	9	79,832		79,841
ro forma alance at ecember 31, 012 naudited)		$		$		$		$	9,153,681	$ 9	$ 87,478	$ (90,085)	$ (2,598

See accompanying notes to consolidated financial statements.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Consolidated Statements of Cash Flows

(In thousands)

	Years Ended December 31,		The Period from July 7, 2006 (inception) to December 31
	2011	2012	2012
Operating activities			
Net loss	$ (21,564)	$ (15,087)	$ (90,085)
Adjustments to reconcile net loss to net cash used in operating activities			
Depreciation and amortization	521	353	2,379
Amortization of deferred financing costs and debt discount	78	175	299
Accretion of final interest payment on term loans		128	128
Fair value adjustment of warrants and investor right obligation	(22)	63	5,362
Stock-based compensation expense	312	612	1,546
Loss from disposal of property and equipment	1		5
Common stock issued for license			1
Changes in operating assets and liabilities:			
Restricted cash			(161)
Accounts receivable	(185)	(2,267)	(2,452)
Prepaid expenses and other current assets	(167)	(227)	(820)
Deferred revenue		699	699
Accounts payable	(305)	1,219	2,019
Accrued expenses	1,455	(1,675)	2,303
Net cash used in operating activities	(19,876)	(16,007)	(78,777)
Investing activities			
Purchases of property and equipment	(65)	(54)	(2,619)
Net cash used in investing activities	(65)	(54)	(2,619)
Financing activities			
Proceeds from sale of convertible preferred stock, net of issuance costs			79,841
Deferred financing fees	(170)	(1,346)	(1,536)
Proceeds from issuance of term loan payable	8,000	6,200	15,750
Repayment of term loan	(52)	(2,197)	(3,747)
Proceeds from sale of restricted common stock and common stock to founders			20
Proceeds from exercise of stock options	32	29	147
Net cash provided by financing activities	7,810	2,686	90,475
Net increase (decrease) in cash and cash equivalents	$ (12,131)	$ (13,375)	$ 9,079
Cash and cash equivalents at beginning of period	34,585	22,454	
Cash and cash equivalents at end of period	$ 22,454	$ 9,079	$ 9,079
Supplemental cash flow information			
Cash paid for interest	$ 78	$ 702	$ 1,012

Fair value of warrants issued in connection with issuance of term loan	$ 302	$ 241	$ 569
Reclassification of investors rights/liability to stockholders equity	$	$	$ 5,321

See accompanying notes to consolidated financial statements.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 1. Organization and Operations

The Company

Tetraphase Pharmaceuticals, Inc. (the Company), is a clinical stage biopharmaceutical company that was incorporated in Delaware on July 7, 2006 and has a principal place of business in Watertown, Massachusetts, using its proprietary chemistry technology to create novel antibiotics for serious and life-threatening multi-drug resistant infections. The Company s lead product candidate, eravacycline, is a fully synthetic tetracycline derivative that the Company is developing as a broad-spectrum intravenous and oral antibiotic for use as a first-line monotherapy for the treatment of multi-drug resistant infections, including multi-drug Gram-negative infections. The Company recently completed a successful Phase 2 clinical trial of eravacycline with intravenous administration for the treatment of patients with complicated intra-abdominal infections, or cIAI, and the Company is currently finalizing two Phase 3 clinical trials of eravacycline, one for the treatment of cIAI and one for the treatment of complicated urinary tract infections, or cUTI. The Company also commenced a Phase 1 clinical program evaluating the pharmacokinetics and safety of oral formulations of eravacycline in the first quarter of 2013. Subject to obtaining additional financing beyond the Company s proposed initial public offering of its common stock, the Company intends to pursue development of eravacycline for the treatment of additional indications, including acute bacterial skin and skin structure infections, or ABSSSI, acute bacterial pneumonias and other serious and life-threatening infections. The Company is also pursuing the discovery and development of additional antibiotics to target unmet medical needs.

The Company is in the development stage, and is devoting substantially all of its efforts to product research and development, initial market development, and raising capital. The Company has not generated any product revenue related to its primary business purpose to date and is subject to a number of risks similar to those of other development stage life science companies, including dependence on key individuals, competition from other companies, the need for development of commercially viable products, and the need to obtain adequate additional financing to fund the development of its product candidates. The Company is also subject to a number of risks similar to other companies in the industry, including rapid technological change, regulatory approval of products, uncertainty of market acceptance of products, competition from substitute products and larger companies, the need to obtain additional financing, compliance with government regulations, protection of proprietary technology, dependence on third parties, product liability, and dependence on key individuals.

The Company has incurred annual net operating losses in every year since its inception. The Company has not generated any product revenues related to its primary business purpose and has financed its operations primarily through private placements of its preferred stock and funding from the United States government. The Company has not completed development of any product candidate and has devoted substantially all of its financial resources and efforts to research and development, including preclinical and clinical development. The Company expects to continue to incur significant expenses and increasing operating losses for at least the next several years.

Liquidity

In May 2011, the Company executed a Loan and Security Agreement (Term Loan) with two financial institutions, Silicon Valley Bank and Oxford Finance, which provided for up to $8.0 million in funding, to be made available in two tranches. The Company borrowed the first $1.5 million in May 2011 and the second tranche for the remaining $6.5 million in December 2011. On December 20, 2012, the Company amended the Term Loan to provide for up to an additional $9.2 million in funding, to be made available in two tranches (2012 Term Loan). The Company borrowed the first $6.2 million under the 2012 Term Loan on December 20, 2012. The second tranche of $3.0 million was borrowed by the Company on February 28, 2013 (Note 13).

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 1. Organization and Operations (continued)

Liquidity (continued)

In October 2011, the National Institutes of Health s (NIH) National Institute of Allergy and Infectious Diseases (NIAID) division awarded a contract of up to $35.8 million over a five-year term for the development of TP-271, a preclinical compound, for respiratory disease caused by bacterial biothreat pathogens (NIAID Contract). The Company is a subcontractor under this NIAID Contract which will provide funding to the Company totaling approximately $13.3 million over the five year term, including committed funding of $5.9 million during the 25-month base period from October 1, 2011 through October 31, 2013. In addition during 2011, the Company was a subawardee under a separate grant from the NIAID (NIAID Grant) (Note 3).

In February 2012 the Biomedical Advanced Research and Development Authority (BARDA), an agency of the U.S. Department of Health and Human Services, awarded a contract for up to $67.0 million for the development of eravacycline as a potential countermeasure for the treatment of disease caused by bacterial biothreat pathogens (BARDA Contract). The Company is a subcontractor under this BARDA Contract which will provide funding to the Company totaling up to approximately $39.8 million including committed funding of $6.3 million for the 12-month base period from February 1, 2012 through January 31, 2013 and of $6.4 million for the 12-month period from February 1, 2013 through January 31, 2014 (Note 3).

The Company believes that its cash resources of approximately $9.1 million at December 31, 2012, together with the committed funding it expects to receive in the first and second quarters of 2013 as a subcontractor or subawardee under the NIAID Contract, NIAID Grant and the BARDA Contract of approximately $3.7 million and the $3.0 million in proceeds it borrowed in the second tranche of the 2012 Term Loan, will be sufficient to allow the Company to fund its current operating plan and continue as a going concern through approximately June 30, 2013. The Company will be required to obtain additional funding in order to continue to fund its operations after June 30, 2013 and intends to pursue a public offering of its common stock to fund future operations. However if the Company is unable to complete a sufficient public offering in a timely manner it would need to pursue other financing alternatives including private financing of debt or equity or collaboration agreements. There can be no assurances, however, that the current operating plan will be achieved or that additional funding will be available on terms acceptable to the Company, or at all.

On February 28, 2013, the Company s board of directors approved an amendment to the Company s certificate of incorporation to effect a 1-for-29 reverse split of its Common Stock (the Reverse Split). The Company effected this amendment to its certificate of incorporation on March 5, 2013. All references to shares of Common Stock outstanding, average number of shares outstanding and per share amounts in these consolidated financial statements and notes to consolidated financial statements have been restated to reflect the Reverse Split on a retroactive basis.

Note 2. Summary of Significant Accounting Policies

Unaudited Pro Forma Presentation

On January 29, 2013, the Company s board of directors authorized the Company to file a registration statement with the Securities and Exchange Commission permitting the Company to sell shares of its common stock (the Common Stock) to the public. The unaudited pro forma balance sheet as of December 31, 2012 reflects the conversion of all of the Series A-1 convertible preferred stock (the Series A-1 Preferred Stock), the Series A-2 convertible preferred stock (the Series A-2 Preferred Stock), the Series B convertible preferred stock (the Series B Preferred Stock), and the Series C convertible preferred stock (the Series C Preferred Stock, collectively with the Series A-1 Preferred Stock, Series A-2 Preferred Stock and Series B Preferred Stock, the

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 2. Summary of Significant Accounting Policies (continued)

Unaudited Pro Forma Presentation (continued)

Preferred Stock) into shares of Common Stock, and the resulting adjustment in the shares issuable upon exercise of outstanding warrants from preferred stock to common stock, occurring upon the closing of the Company s proposed initial public offering.

Unaudited pro forma net loss per share is computed using the weighted-average number of shares of Common Stock outstanding after giving effect to the pro forma effect of the conversion of all Preferred Stock during the year ended December 31, 2012 into shares of the Company s Common Stock as if such conversion had occurred at the beginning of the period presented.

Segment Information

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company views its operations and manages its business in one operating segment, which is the business of developing and commercializing its proprietary chemistry technology to create novel antibiotics for serious and life-threatening multi-drug resistant infections.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, expenses other comprehensive income and related disclosures. On an ongoing basis, the Company s management evaluates its estimates, including estimates related to clinical trial accruals, stock-based compensation expense and reported amounts of contract and grant revenues and expenses during the reported period. The Company bases its estimates on historical experience and other market-specific or other relevant assumptions that it believes to be reasonable under the circumstances. Actual results may differ from those estimates or assumptions. The Company utilizes significant estimates and assumptions in determining the fair value of its Common Stock. The Company utilized various valuation methodologies in accordance with the framework of the 2004 American Institute of Certified Public Accountants Technical Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation*, to estimate the fair value of its Common Stock. Each valuation methodology includes estimates and assumptions that require the Company s judgment. These estimates and assumptions include a number of objective and subjective factors, including external market conditions affecting the biotechnology industry sector, the prices at which the Company sold shares of Preferred Stock, the superior rights and preferences of securities senior to the Company s Common Stock at the time and the likelihood of achieving a liquidity event, such as an initial public offering or a sale of the Company. Significant changes to the key assumptions used in the valuations could result in different fair values of Common Stock at each valuation date.

Concentrations of Credit Risk and Off-Balance Sheet Risk

Financial instruments that potentially subject the Company to concentrations of credit risk are primarily cash, cash equivalents and restricted cash. The Company maintains its cash and cash equivalent balances in the form of money market accounts with financial institutions that management believes are creditworthy. The Company s investment policy includes guidelines on the quality of the institutions and financial instruments and defines allowable investments that the Company believes minimizes the exposure to concentration of credit risk. The Company has no financial instruments with off-balance-sheet risk of loss.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 2. Summary of Significant Accounting Policies (continued)

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiary, Tetraphase Securities Corporation, a Massachusetts Securities Corporation. All significant intercompany balances and transactions have been eliminated in consolidation.

Cash and Cash Equivalents

The Company considers all highly liquid investments with maturities of three months or less from the date of purchase to be cash equivalents.

Fair Value Measurements

The Company s financial instruments consist principally of cash and cash equivalents, accounts receivable, accounts payable, accrued liabilities, the term loan and liabilities related to warrants to purchase Preferred Stock. Fair value measurements are classified and disclosed in one of the following three categories:

Level 1 Quoted prices in active markets for identical assets or liabilities.

Level 2 Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Financial instruments measured at fair value as of December 31, 2011 and 2012 are classified below based on the three fair value hierarchy tiers described above (in thousands):

		Fair Value Measurements at Reporting Date Using		
	Balance	Level 1	Level 2	Level 3
December 31, 2011				
Cash	$ 524	$ 524	$	$
Money Market funds, included in cash equivalents	$ 21,931	$ 21,931	$	$
Preferred Stock warrant liability	$ (306)	$	$	$ (306)
December 31, 2012				
Cash	$ 5,854	$ 5,854	$	$
Money Market funds, included in cash equivalents	$ 3,225	$ 3,225	$	$
Preferred Stock warrant liability	$ (610)	$	$	$ (610)

The Company measures cash equivalents at fair value on a recurring basis. The fair value of cash equivalents is determined based on Level 1 inputs, which consist of quoted prices in active markets for identical assets. The fair value of the Company s term loan payable is determined using current applicable rates for similar instruments as of the balance sheet date. The carrying value of the Company s term loan payable approximates fair value because the Company s interest rate yield is near current market rates. The Company s term loan payable is a Level 3 liability within the fair value hierarchy. The fair value of the Preferred Stock

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 2. Summary of Significant Accounting Policies (continued)

Fair Value Measurements (continued)

warrant liability was determined based on Level 3 inputs and utilizing the Black-Scholes option pricing model (Note 7). The following table presents activity for the Preferred Stock warrant liability measured at fair value using significant unobservable inputs (Level 3) during the years ended December 31, 2011 and 2012.

	(in thousands)
Fair value at December 31, 2010	$ 26
Value of warrants issued in 2011	302
Changes in fair value recognized in earnings	(22)
Fair value at December 31, 2011	$ 306
Value of warrants issued in 2012	241
Changes in fair value recognized in earnings	63
Fair value at December 31, 2012	$ 610

Accounts Receivable

Accounts receivable at December 31, 2011 represent amounts due from CUBRC, Inc., (CUBRC) the prime contractor under the NIAID Contract. Accounts receivable at December 31, 2012 represents amounts due from CUBRC under the Company s subcontracts under the NIAID Contract and the BARDA Contract and under the Company s subaward under the NIAID Grant. The Company s practice is to bill the prime contractor amounts for which the Company has been invoiced by third parties in the case of contract research or subcontractor costs or for internal costs incurred. Expenses directly associated with the Company s NIAID and BARDA Contracts and NIAID Grant that have been accrued at the end of the reporting period are not billed to the prime contractor until third party invoices have been received or until internal costs have been paid. At December 31, 2012, unbilled accounts receivable was approximately $1.1 million.

Property and Equipment, Net

Property and equipment are stated at cost, less accumulated depreciation and amortization. Depreciation and amortization are provided using the straight-line method over the estimated useful lives of the respective assets, generally three to five years. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful economic lives of the related assets.

Restricted Cash

At December 31, 2011 and 2012, the Company had $161,000 in restricted cash deposits with a bank of which $121,000 is collateral for a letter of credit issued to the landlord of the Company s leased facility (Note 11). Should the Company default on its rental obligations, $121,000 will be payable to the lessor of the leased facility. In addition, the Company has $40,000 in restricted cash to secure the Company s corporate credit card issued through the same bank.

Revenue Recognition

The Company s revenue is derived from its subcontracts with CUBRC under the BARDA Contract and the NIAID Contract and its subaward under the NIAID Grant (Note 3). The Company recognizes revenue under

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 2. Summary of Significant Accounting Policies (continued)

Revenue Recognition (continued)

these best-efforts, cost-reimbursable and cost-plus-fixed-fee subcontracts and subaward as the Company performs services under the subcontracts and subaward so long as a subcontract and subaward has been executed and the fees for these services are fixed or determinable, legally billable and reasonably assured of collection. Recognized amounts reflect the Company s partial performance under the subcontracts and subaward and equal direct and indirect costs incurred plus fixed fees, where applicable. The Company does not recognize revenue under these arrangements for amounts related to contract periods where funding is not yet committed as amounts above committed funding thresholds would not be considered fixed or determinable or reasonably assured of collection. Revenues and expenses under these arrangements are presented gross on the statements of operations and comprehensive loss as the Company has determined it is the primary obligor under these arrangements relative to the research and development services it performs as lead technical expert.

Revenue under the Company s subcontract under the NIAID Contract is earned under a cost-plus-fixed-fee contract in which the Company is reimbursed for direct costs incurred plus allowable indirect costs and a fixed-fee earned. Billings under the Company s subcontract under the NIAID Contract are based on approved provisional indirect billing rates, which permit recovery of fringe benefits, allowable overhead and general and administrative expenses and a fixed fee. During the years ended December 31, 2011 and 2012 and the period from July 7, 2006 (inception) to December 31, 2012, the Company recognized revenue of $183,000, $2.4 million, and $2.6 million, respectively, from the Company s subcontract under the NIAID Contract.

Revenue from the Company s subaward under the NIAID Grant is earned under a cost-reimbursable contract in which the Company is reimbursed for direct costs incurred plus allowable indirect costs. Billings under the Company s subaward under the NIAID Grant are based on approved provisional indirect billing rates, which permit recovery of fringe benefits and allowable general and administrative expenses. During the years ended December 31, 2011 and 2012 and the period from July 7, 2006 (inception) to December 31, 2012, the Company recognized revenue of $2,000, $273,000, and $275,000, respectively, from the Company s subaward under the NIAID Grant.

Revenue from the Company s subcontract under the BARDA Contract is earned under a cost-reimbursable contract in which the Company is reimbursed for direct costs incurred plus allowable indirect costs. Billings under the Company s subcontract under the BARDA Contract are based on approved provisional indirect billing rates, which permit recovery of fringe benefits and allowable general and administrative expenses. For the year ended December 31, 2012 and the period from July 7, 2006 (inception) to December 31, 2012, the Company recognized revenue of $4.9 million under the Company s subcontract under the BARDA Contract.

Organizational Costs

All organizational costs are expensed as incurred.

Research and Development Expenses

Research and development costs are charged to expense as incurred and include, but are not limited to:

- employee-related expenses, including salaries, benefits, travel and stock-based compensation expense;

expenses incurred under agreements with contract research organizations, contract manufacturing organizations and consultants that conduct clinical trials and preclinical studies;

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 2. Summary of Significant Accounting Policies (continued)

Research and Development Expenses (continued)

payments made under the Company s license agreement with Harvard University;

the cost of acquiring, developing and manufacturing clinical trial materials;

facility, depreciation and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, insurance and other supplies; and

costs associated with preclinical activities and regulatory operations.

Costs for certain development activities, such as clinical trials, are recognized based on an evaluation of the progress to completion of specific tasks using data such as patient enrollment, clinical site activations, or information provided to the Company by its vendors on their actual costs incurred. Payments for these activities are based on the terms of the individual arrangements, which may differ from the pattern of costs incurred, and are reflected in the financial statements as prepaid or accrued research and development.

Comprehensive Loss

Comprehensive loss consists of net income or loss and changes in equity during a period from transactions and other events and circumstances generated from non-owner sources. The Company s net loss equals comprehensive loss for all periods presented.

Income Taxes

The Company uses the liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial reporting and the tax reporting basis of assets and liabilities and are measured using the enacted tax rates and laws that are expected to be in effect when the differences are expected to reverse. The Company provides a valuation allowance against net deferred tax assets unless, based upon the available evidence, it is more likely than not that the deferred tax assets will be realized. The Company has evaluated available evidence and concluded that the Company may not realize the benefit of its deferred tax assets; therefore a valuation allowance has been established for the full amount of the deferred tax assets. The Company s practice is to recognize interest and/or penalties related to income tax matters in income tax expense.

Stock-Based Compensation Expense

Stock-based compensation is recognized as expense for all stock-based awards based on estimated fair values. The Company determines equity-based compensation at the grant date using the Black-Scholes option pricing model. The value of the award that is ultimately expected to vest is recognized as expense on a straight-line basis over the requisite service period using the estimated fair market value of the stock. Any changes to the estimated forfeiture rates are accounted for prospectively.

Recent Accounting Pronouncements

In June 2011, the FASB issued amended guidance intended to increase the prominence of items reported in other comprehensive income (loss). This amended guidance requires that all non-owner changes in shareholders equity be presented either in a single continuous statement of

comprehensive income (loss) or in two separate but

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 2. Summary of Significant Accounting Policies (continued)

Recent Accounting Pronouncements (continued)

consecutive statements. The amended guidance became effective on January 1, 2012. The Company has applied this guidance beginning with its financial information for the year ended December 31, 2012. This amended guidance effects presentation, but does not have a material effect on the Company s consolidated financial statements.

In May 2011, the FASB amended guidance regarding the measurement of the fair value of assets and liabilities to harmonize the fair value measurement guidance under GAAP and under the International Financial Reporting Standards. This amended guidance clarifies the FASB s intent regarding the application of existing fair value measurement requirements and changes a particular principle or requirement for measuring fair value or for disclosing information about fair value measurements. The amended guidance became effective on January 1, 2012. The Company adopted this guidance on a prospective basis. The adoption of this amended guidance did not have a material effect on the Company s consolidated financial statements.

Subsequent Events

The Company considers events or transactions that occur after the balance sheet date but prior to the issuance of the financial statements to provide additional evidence relative to certain estimates or to identify matters that require additional disclosure.

Net Loss per Common Share

Basic net loss per share is calculated by dividing the net loss applicable to common stockholders by the weighted average number of shares of Common Stock outstanding for the period, without consideration for common stock equivalents. Diluted net loss per share is computed by dividing the net loss applicable to common stockholders by the weighted average number of common share equivalents outstanding for the period determined using the treasury-stock method. For purposes of this calculation, preferred stock, stock options and warrants are considered to be common stock equivalents and are only included in the calculation of diluted net loss per share when their effect is dilutive.

The amounts in the table below were excluded from the calculation of diluted weighted-average shares outstanding, prior to the use of the treasury stock method, due to their anti-dilutive effect:

	Year Ended December 31,		The Period from July 7, 2006 (inception) to December 31,
	2011	2012	2012
Preferred stock	8,828,438	8,828,438	8,828,438
Warrants	54,751	88,013	88,013
Outstanding stock options	1,253,167	1,442,810	1,442,810

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 3. Significant Agreements and Contracts

License Agreement

In August 2006, the Company entered into a license agreement for certain intellectual property with Harvard University (the University). The agreement required the Company to pay a nonrefundable license fee of $250,000 and certain accrued patent expenses of approximately $61,000, and to issue 31,379 shares of common stock to the University upon the closing of a successful financing. Such consideration, which totaled $312,000, was recorded in research and development expenses in 2006.

The Company is obligated to make certain payments totaling up to, approximately $15.1 million upon achievement of certain development and regulatory milestones and royalties on net sales of products covered by the agreement. In accordance with the license agreement, the Company paid the University $325,000 in milestone payments in the year ended December 31, 2009, no payments in the year ended December 31, 2010, $1.1 million in milestone payments in the year ended December 31, 2011, and no payments in the year ended December 31, 2012. The Company has made a total of $1.7 million in upfront and milestone payments to the University since inception.

In January 2007 and April 2010, the Company and the University amended the license agreement to include certain additional intellectual property. The Company paid an additional $25,000 with each amendment. In February 2011, the license agreement was further amended to include additional intellectual property in the license granted by the University without the payment of any additional consideration.

Government Grant and Contracts

NIAID Grant and Contract for TP-271

The Company has received funding for its preclinical compound TP-271 under two awards from NIAID for the development, manufacturing and clinical evaluation of TP-271 for respiratory diseases caused by biothreat and antibiotic-resistant public health pathogens, as well as bacterial pathogens associated with community-acquired bacterial pneumonia:

the NIAID Grant awarded in July 2011 that provides up to a total of approximately $2.8 million over five years; and

the NIAID Contract awarded in September 2011 that provides up to a total of approximately $35.8 million in funding over five years.

In connection with the NIAID Grant, in November 2011, CUBRC awarded the Company a 55-month, no-fee subaward of approximately $980,000, reflecting the portion of the NIAID Grant funding that may be paid to the Company for its activities.

In connection with the NIAID Contract, in October 2011, the Company entered into a five-year cost-plus-fixed-fee subcontract with CUBRC under which the Company may receive funding of up to approximately $13.3 million, reflecting the portion of the NIAID Contract funding that may be paid to the Company for its activities.

Although the NIAID Contract, the NIAID Grant and the Company s NIAID subcontract have terms of five years, and the Company s NIAID subaward has a term of 55 months, NIAID is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond an initial 25-month base period.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 3. Significant Agreements and Contracts (continued)

Government Grant and Contracts (continued)

BARDA Contract for Eravacycline

The Company has received funding for its lead product candidate, eravacycline, under an award from BARDA. In January 2012, BARDA awarded a five-year contract that provides for up to a total of $67.0 million in funding for the development, manufacturing and clinical evaluation of eravacycline for the treatment of disease caused by bacterial biothreat pathogens.

In connection with the BARDA Contract, in February 2012, the Company entered into a five-year cost-plus-fixed-fee subcontract with CUBRC under which it may receive funding of up to approximately $39.8 million, reflecting the portion of the BARDA funding that may be paid to the Company for its activities.

Although the BARDA Contract, and the Company s subcontract with CUBRC under the BARDA Contract, have five-year terms, BARDA is entitled to terminate the project for convenience at any time, and is not obligated to provide continued funding beyond current-year amounts from Congressionally approved annual appropriations. For the 12-month base period from February 1, 2012 through January 31, 2013, committed funding from CUBRC under the Company s BARDA subcontract was $6.3 million. As of December 31, 2012, the Company had received $3.4 million of this $6.3 million. In January 2013, BARDA committed to provide funding of $13.9 million to CUBRC for the eravacycline program for the 12-month period from February 1, 2013 to January 31, 2014. Committed funding from CUBRC to the Company under the Company s BARDA subcontract for the 12-month period from February 1, 2013 to January 31, 2014 is $6.4 million.

Note 4. Property and Equipment

Property and equipment at December 31, 2011 and 2012 consisted of the following:

	Estimated Useful Life Years	December 31, 2011	December 31, 2012
Laboratory equipment	5	$ 1,769	$ 1,777
Furniture and fixtures	5	115	115
Office and computer equipment	3	97	143
Leasehold improvements		515	515
		2,496	2,550
Less accumulated depreciation and amortization		(1,962)	(2,315)
Property and equipment, net		$ 534	$ 235

Depreciation and amortization expense for the years ended December 31, 2011 and 2012 was $521,000 and $353,000, respectively. Depreciation and amortization expense for the period from July 7, 2006 (inception) to December 31, 2012 was $2.4 million.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 5. Accrued Liabilities

Accrued liabilities at December 31, 2011 and 2012 consisted of the following:

	December 31, 2011	2012
Payroll and employee-related costs	$ 768	$ 963
Research and development costs	2,827	756
Other	382	584
Total	$ 3,977	$ 2,303

Note 6. Long-Term Debt

In October 2007, the Company entered into a Loan and Security Agreement with a bank, which provided for up to $1.6 million in debt financing to finance equipment purchases made by the Company (the Equipment Term Loan). The Equipment Term Loan had a 36 month term, an interest rate of prime + 1.00% and was collateralized by the underlying equipment. In connection with the Equipment Term Loan, the Company issued a 10-year warrant to purchase 32,000 shares of Series A-1 Preferred Stock at a purchase price of $1.00 per share. The Equipment Term Loan was paid in full in January 2011.

In May 2011, the Company executed a Loan and Security Agreement (Term Loan) with two financial institutions, Silicon Valley Bank and Oxford Finance, which provided for up to $8.0 million funding, to be made available in two tranches. The Company borrowed the first $1.5 million in May 2011 and the second tranche for the remaining $6.5 million in December 2011. The Term Loan bears interest at 10% per annum and provides for a final payment of 2.75% of the original principal due at the maturity date of November 1, 2014. Under the terms of the Term Loan, the Company was only required to pay interest (and not principal) on the first tranche and the second tranche through February 28, 2012. Each tranche will be repaid in 33 monthly payments of equal principal, plus accrued interest, after the interest only period which ended February 28, 2012. The final payment of 2.75% will be due at the same time as the last loan payment. The Term Loan matures on November 1, 2014. In connection with the entry into the Loan and Security Agreement, the Company issued to the lenders 10-year warrants to purchase an aggregate of 1,555,815 shares of Series C Preferred Stock at a price of $0.2571 per share.

The Company recorded the fair value of the warrants in the aggregate amount of $302,000 as a discount to the Term Loan. This amount is being accreted as additional interest expense over the term of the Term Loan.

On December 20, 2012, the Company amended the Term Loan to provide for up to an additional $9.2 million in funding, to be made available in two tranches (2012 Term Loan). The Company borrowed the first $6.2 million under the 2012 Term Loan on December 20, 2012 (2012 Term A Loan). The second tranche of $3.0 million was borrowed by the Company on February 28, 2013 (2012 Term B Loan). The 2012 Term A Loan and the 2012 Term B loan bear interest at 9% per annum.

The Company is only required to pay interest (and not principal) for the first six months of each tranche of the 2012 Term Loan. Each tranche of the 2012 Term Loan is to be repaid in 33 equal monthly payments of principal, plus accrued interest, after the interest only period. An additional payment of 2.90% of the original principal amount of each tranche will be due at the same time as the last loan payment for the tranche. The 2012 Term A Loan matures on March 1, 2016. In connection with the funding of the 2012 Term A Loan, the Company issued to the lenders 10-year warrants to purchase an aggregate of 964,605 shares of Series C Preferred Stock with an exercise price of $0.2571 per share. The 2012 Term B Loan matures on May 1, 2016. In connection with

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 6. Long-Term Debt (continued)

the funding of the 2012 Term B Loan, the warrant the Company issued to Silicon Valley Bank automatically became exercisable for an additional 233,372 shares of Series C Preferred Stock. In addition, the Company issued to Oxford Finance a 10-year warrant to purchase an additional 233,372 shares of Series C Preferred Stock with an exercise price of $0.2571 per share.

The Term Loan and the 2012 Term Loan are collateralized by a blanket lien on all corporate assets, excluding intellectual property, and by a negative pledge of our intellectual property. The Term Loan and the 2012 Term Loan contain customary default provisions that include material adverse events, as defined therein. The Company has determined that the risk of subjective acceleration under the material adverse events clause is remote and therefore has classified the outstanding principal in current and long-term liabilities based on scheduled principal payments.

Future principal payments on the Term Loan and the 2012 Term Loan are as follows:

	December 31, 2012
2013	$ 3,906
2014	5,089
2015	2,379
2016	629
Total term loan payments	12,003
Current term loan payable	3,906
Less debt discount and issuance costs	(265)
Current term loan payable (net)	3,641
Term loan payable, less current portion	8,097
Less debt discount and issuance costs	(216)
Term loan payable, net	$ 7,881

Note 7. Warrants

In October 2007, the Company issued a warrant to purchase 32,000 shares of Series A-1 Preferred Stock at an exercise price of $1.00 per share to a bank. in connection with the Equipment Term Loan (Note 6). The warrant was exercisable immediately and had a ten-year life. The Company initially valued the warrant at $26,000 using the Black-Scholes pricing model with the following assumptions; risk-free interest rate of 3.2%; dividend yield of zero; expected volatility rate of 75%; with an expected life of ten years. The Company is expensing this value of the warrant as additional interest over the term of the loan. The warrant is classified as a liability in accordance with ASC 480 and subject to remeasurement at each balance sheet date and changes to fair value are recognized as a component of other income (expense) in the statement of operations and comprehensive loss. The change in the fair value of the warrant was $14,000 and $6,000 during the years ended December 31, 2011 and December 31, 2012. The fair value of the warrant at December 31, 2011 and December 31, 2012 was $12,000 and $6,000, respectively.

In May 2011, the Company issued warrants to purchase an aggregate of 1,555,815 shares of Series C Preferred Stock at an exercise price of $0.2571 per share in connection with the Term Loan (Note 6). The warrants are exercisable immediately and have a ten year life. The warrants were initially valued at $302,000

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 7. Warrants (continued)

using the Black-Scholes pricing model with the following assumptions; risk free interest rate of 3.2%; dividend yield of zero; expected volatility of 67%; with an expected life of ten years, and are being expensed as additional interest over the term of the loan. In accordance with ASC 480, the characteristics of these warrants and the rights and privileges of the underlying Series C Preferred Stock result in the classification these warrants as a liability and changes to the fair value of the warrants are recognized as a component of other income (expense) in the statement of operations and comprehensive loss. The fair value of these warrants at December 31, 2011 and December 31, 2012, was $294,000 and $364,000, respectively.

In December 2012, the Company issued warrants to purchase an aggregate of 964,605 shares of Series C Preferred Stock at an exercise price of $0.2571 per share in connection with the 2012 Term Loan (Note 6). The warrants are exercisable immediately and have a ten year life. The warrants were initially valued at $241,000 using the Black-Scholes pricing model with the following assumptions; risk free interest rate of 1.8%; dividend yield of zero; expected volatility of 61%; with an expected life of ten years, and are being expensed as additional interest over the term of the loan. In accordance with ASC 480, the characteristics of these warrants and the rights and privileges of the underlying Series C Preferred Stock result in the classification these warrants as a liability and changes to the fair value of the warrants are recognized as a component of other income (expense) in the statement of operations and comprehensive loss. The fair value of these warrants at December 31, 2012, was $240,000.

The Company estimated the fair value of the preferred stock warrants using the Black-Scholes option pricing model based on the following assumptions:

	December 31, 2011	December 31, 2012
Expected volatility	67%	60%
Expected term (in years)	6.0-10.0	5.0-10.0
Risk-free interest rate	1.09%-1.89%	0.72%-1.78%
Expected dividend yield	0%	0%
Estimated fair value of Series A-1 Preferred Stock	$0.46	$0.45
Estimated fair value of Series C Preferred Stock	$0.32	$0.34

Note 8. Stockholders Equity and Convertible Preferred Stock

As of December 31, 2012, the authorized capital stock of the Company consisted of 317,789,510 shares of Common Stock, $0.001 par value per share, and 259,044,157 shares of Preferred Stock, of which 10,072,000 shares are designated Series A-1 Preferred Stock at $0.001 par value per share, 13,095,646 shares are designated Series A-2 Preferred Stock at $0.001 par value per share, 57,471,225 shares are designated Series B Preferred Stock at $0.001 par value per share and 178,405,286 shares are designated Series C Preferred Stock at $0.001 par value per share.

In August and September 2006, the Company issued 10,040,000 shares of Series A-1 Preferred Stock, for $1.00 per share. In June 2008, the Company issued 13,095,646 shares of Series A-2 Preferred Stock for $1.15 per share. In September 2009, the Company issued 57,471,225 shares of Series B Preferred Stock for $0.175 per share and in May and June 2010, the Company issued 175,418,122 shares of Series C Preferred Stock for $0.2571 per share.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 8. Stockholders Equity and Convertible Preferred Stock (continued)

In accordance with the terms of the Series A Preferred Stock purchase agreement entered into in connection with the sale of Series A-1 Preferred Stock, the Company committed to issue and sell an additional $15.0 million of Series A-2 Preferred Stock to the Series A investors at a price per share of $1.15, upon the achievement of a pre-defined milestone (the selection of a drug candidate for pre-investigational new drug application testing).

The right of the investors (Investor Rights) to purchase Series A-2 Preferred Stock represented a freestanding financial instrument. As such, the Company accounted for the Investor Rights as liabilities. The Company adjusted the carrying value of the Investor Rights to its estimated fair value at each reporting date up to the closing of the second tranche financing on June 24, 2008. Increases or decreases in the fair value of the Investor Rights were recorded as other income or expense in the statement of operations. The Company determined the estimated fair value of the Investor Rights using a valuation model which considers the probability of achieving the milestone, the Company s cost of capital, the estimated period the rights would be outstanding, consideration received for the instrument with the rights, the number of shares to be issued to satisfy the rights and at what price, and any changes in the fair value of the underlying instrument. At the date of issuance in 2006, the Company recorded the Investor Rights at its fair value of $3.2 million and reflected its fair value on the consolidated balance sheet. From the date of issuance to December 31, 2007, and for the year ended December 31, 2008, the changes in fair value of the Investor Rights were $2.5 million and $2.6 million, respectively, and were recorded as other expenses in the consolidated statement of operations and comprehensive loss from inception.

During the second quarter of 2008 the Company met the pre-defined milestone and closed the second tranche of the financing (Second Closing) on June 28, 2008. In connection with the Second Closing, the Company issued 13,095,646 shares of Series A-2 Preferred Stock at $1.15 per share, resulting in net proceeds to the Company of $15.1 million. As a result of the exercise of the investor rights, the related liability was extinguished and recorded as an increase to Series A-2 Preferred Stock of $3.2 million, and an increase in additional paid-in capital of $5.3 million.

In September 2009, the Company issued 57,471,225 shares of Series B Preferred Stock at a price of $0.175 per share, resulting in net proceeds of $9.9 million to the Company. The Series B Preferred Stock purchase agreement provided for a $7.5 million second tranche, which was canceled as part of the Series C Preferred Stock financing.

In May and June 2010 the Company entered into a Series C Preferred Stock purchase agreement with investors. Under the agreement, the Company received $45.1 million from the sale of 174,056,785 shares of Series C Preferred Stock at a price of $0.2571 per share during the initial closing on May 14, 2010 and an additional 1,361,337 shares of Series C Preferred Stock at $0.2571 per share at a second closing on June 18, 2010. As part of the Series C Preferred Stock financing, the liquidation preference of the Series A-1 Preferred Stock and the Series A-2 Preferred Stock was reduced by 40% to $0.5968 per share and $0.6864 per share, respectively.

The rights, preferences, and privileges of the Series C Preferred Stock and the Series A-1 Preferred Stock, Series A-2 Preferred Stock and Series B Preferred Stock (collectively, the Junior Preferred Stock) are as follows:

Conversion

Shares of Series C Preferred Stock and Junior Preferred Stock are convertible into Common Stock on a 1-for-29 basis. Conversion is at the option of the holders of Preferred Stock, although conversion is automatic upon

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 8. Stockholders Equity and Convertible Preferred Stock (continued)

the earlier of the consummation of an initial public offering resulting in gross proceeds to the Company of $50.0 million or more and a price per share to the public of not less than $0.75 per share or an affirmative vote of specified holders of Preferred Stock. The conversion prices of the Series C Preferred Stock will initially be equal to the Series C Preferred Stock original issue price and the conversion price of the Junior Preferred Stock will initially be equal to the original price of the Series B Preferred Stock. Subject to certain exceptions, the conversion prices are subject to adjustment in the event that the Company issues shares for consideration less than the original issue price of the Series C Preferred Stock or the Series B Preferred Stock, as the case may be, or in the case of stock distributions stock splits, recapitalizations and other similar transactions.

The Company has evaluated each of its series of Preferred Stock and determined that they should be considered an equity host and not a debt host . This evaluation is necessary to determine if any embedded features require bifurcation and therefore, accounted for separately as a derivative liability. The Company s analysis followed the whole instrument approach, which compares an individual feature against the entire preferred stock instrument which includes that feature. The Company s analysis was based on a consideration of the economic characteristics and risks and more specifically evaluated all the stated and implied substantive terms and features including (i) whether the preferred stock included redemption features, (ii) whether the preferred stockholders were entitled to dividends, (iii) the voting rights of the preferred stock and (iv) the existence and nature of any conversion rights. As a result of the Company s determination that the preferred stock is an equity host , the embedded conversion option is not considered a derivative liability.

The Company assessed the Series C Preferred Stock and Junior Preferred Stock for any beneficial conversion features or embedded derivatives that would require bifurcation from the Series C Preferred Stock and Junior Preferred Stock and receive separate accounting treatment. On the date of each issuance, the value of common stock into which the Series C Preferred Stock and Junior Preferred Stock is convertible had a fair value less than the effective conversion price of the Series C Preferred Stock and Junior Preferred Stock and, as such, there was no intrinsic value on the respective commitment dates. No embedded derivatives were identified that would require bifurcation.

Dividends

As part of the Series C Preferred Stock financing, all accrued dividends to holders of the Junior Preferred Stock were eliminated.

Liquidation Preference

In the event of any liquidation or dissolution of the Company, holders of the Series C Preferred Stock shall be entitled to receive, in preference to the holders of the Junior Preferred Stock and Common Stock, an amount equal to the original issue price plus any declared but unpaid dividends. After payment of the Series C liquidation preference, the holders of Junior Preferred Stock will be entitled to receive, in preference to the holders of the Common Stock, an amount equal to $0.5968 per share of Series A-1 Preferred Stock, $0.6864 per share of Series A-2 Preferred Stock and $0.1751 per share of Series B Preferred Stock plus any declared but unpaid dividends. Additionally, after all holders of Preferred Stock have received the full amounts to which they are entitled upon liquidation, any assets remaining for distribution shall be distributed among all holders of stock of the Company, pro rata based on the number of shares held by each holder. If the assets of the Company are insufficient to pay the full preferential amounts to the holders of Preferred Stock, the assets shall be distributed ratably among such holders in proportion to their aggregate liquidation preference amounts. As of December 31, 2011 and

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 8. Stockholders Equity and Convertible Preferred Stock (continued)

December 31, 2012, the liquidation value for the Series A-1, Series A-2, Series B, and C Preferred Stock was $5,991,872, $8,988,851, $10,063,211 and $45,099,999, respectively.

Voting Rights

Holders of Preferred Stock are entitled to vote as a single class with the holders of Common Stock, and shall have one vote for each equivalent common share into which the Preferred Stock is convertible. An affirmative vote of the holders of 60% of the Preferred Stock on an as-converted basis is required in order to amend the Certificate of Incorporation or By-Laws, reclassify Common Stock or establish another class of stock, create or authorize additional shares of Preferred Stock, effect a sale, liquidation or merger of the Company or repurchase or redeem any capital stock.

Note 9. Stock-based Compensation

In August 2006, the Company adopted the Tetraphase Pharmaceuticals, Inc. Stock Incentive Plan (the Plan) under which it may grant incentive stock options (ISOs), nonqualified stock options, restricted stock, and stock grants to purchase up to 1,128,183 shares of Common Stock. In May 2010, the Company amended the plan to increase the number of shares of Common Stock issuable under the Plan to 1,853,288. The options expire ten years after the grant date. As of December 31, 2011 and December 31, 2012, 466,191 and 257,579 shares, respectively, were available for future issuance under the Plan.

Terms of stock award agreements, including vesting requirements, are determined by the board of directors, subject to the provisions of the Plan. Options granted by the Company typically vest over a four year period. Certain of the options are subject to acceleration of vesting in the event of certain change of control transactions. The options are exercisable from the date of grant for a period of ten years. For options granted to date, the exercise price equaled the estimated fair value of the Common Stock as determined by the board of directors on the date of grant.

During 2009, the Company granted options to nonemployees to purchase up to 232,758 shares of common stock (2009 Non-employee Options). The 2009 Non-employee Options vested with respect to one-third of the underlying shares on the date of grant, with the remaining shares vesting quarterly over four years from date of grant and have a life of ten years.

During 2010, the Company granted to nonemployees options to purchase a total of 12,972 shares of Common Stock (2010 Non-employee Options). The 2010 Nonemployee Options vest quarterly through the fourth anniversary of the vesting date and have a contractual life of ten years. Stock options issued to non-employees are accounted for at fair value, and are periodically revalued as the options vest and are recognized as expense over the related service period. The total expense related to all nonemployee options for the years ended December 31, 2011 and 2012 was $55,000 and $307,000, respectively. The total expense related to all nonemployee options from July 7, 2006 (inception) to December 31, 2012 was $581,000.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 9. Stock-based Compensation (continued)

The following table summarizes stock option activity for employees and nonemployees:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Options outstanding at December 31, 2011	1,253,154	1.59	8.11	$ 768
Granted	211,839	2.11		
Exercised	(18,946)	1.58		
Forfeited	(2,710)	1.80		
Canceled	(527)	4.14		
Options outstanding at December 31, 2012	1,442,810	1.67	7.43	10,569
Options vested or expected to vest at December 31, 2012 (1)	1,401,000	1.67	7.43	10,270
Options exercisable at December 31, 2012	915,848	1.56	6.97	$ 6,809

(1) This represents the number of vested options as of December 31, 2012, plus the number of unvested options that the Company estimated as of December 31, 2012 would vest, based on the unvested options at December 31, 2012, as adjusted for the estimated forfeiture rate of 3%.

The total intrinsic value of options exercised in the years ended December 31, 2011 and 2012 and for the period July 7, 2006 (inception) to December 31, 2012 was $9,000, $25,000 and $54,000, respectively. The total fair value of shares vested in the years ended December 31, 2011 and 2012, and for the period from July 7, 2006 (inception) to December 31, 2012 was $228,000, $318,000, and $891,000, respectively. As of December 31, 2012, there was $753,000 of total unrecognized compensation cost related to employee and non-employee nonvested stock options granted under the Plan. Total unrecognized compensation cost will be adjusted for future forfeitures. The Company expects to recognize that cost over a remaining weighted-average period of 3 years.

The Company estimates the fair value of each employee stock award on the grant date using the Black-Scholes option-pricing model based on the following assumptions:

	Years Ended December 31,	
	2011	2012
Weighted average expected volatility	64%	67%
Expected life (in years)	6.0-6.1	6.0-6.1
Risk free interest rate	1.21% -2.41%	0.85% -1.21%
Expected dividend yield	0%	0%

Expected volatility was calculated based on historical volatility data for a representative group of publicly traded companies that were selected based on their disease focus, stage of clinical trials, number of compounds in clinical trials and number of years since incorporation for which historical information was available. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant, commensurate with the expected life assumption. The expected life of stock options granted represents the weighted-average period of time that stock options granted are expected to be outstanding determined using the simplified method for employee grants. For nonemployee grants, the expected life is equal to the remaining contractual term. The

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 9. Stock-based Compensation (continued)

expected life is applied to the stock option grant group as a whole, as the Company does not expect substantially different exercise or post-vesting termination behavior among its employee population.

Compensation cost for stock options granted to employees is based on the estimated grant-date fair value and is recognized over the vesting period of the applicable option on a straight-line basis. The amount of stock-based compensation expense recognized during a period is based on the value of the portion of the awards that the Company determines are expected to vest. Forfeitures are required to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The term forfeitures is distinct from cancellations and represents only the unvested portion of the surrendered option. The Company re-evaluates this analysis quarterly, and adjusts the forfeiture rate as necessary. Ultimately, the actual expense recognized over the vesting period will only be for those options that vest.

Using the Black-Scholes option-pricing model, the weighted-average grant date fair values of options granted to employees for the years ended December 31, 2011 and 2012 and the period from July 7, 2006 (inception) to December 31, 2012 was $1.16, $2.32 and $1.16 per share, respectively.

Stock-based compensation expense is recognized for stock options granted to employees and non-employees and has been reported in the Company s statements of operations as follows (in thousands):

	Year Ended December 31,		The Period from July 7, 2006 (inception) to December 31, 2012
	2011	2012	
	(in thousands)		
Research and development	$ 175	$ 463	$ 996
General and administrative	137	149	550
Total	$ 312	$ 612	$ 1,546

Restricted Stock

During 2006, the Company issued a total of 18,275 shares of Common Stock to employees pursuant to Stock Restriction and Repurchase Agreements. Under the terms of the agreements, the issued shares of Common Stock were subject to vesting and forfeiture. Under the agreements, vesting occurred periodically at specified time intervals and specified percentages. All shares of Common Stock become fully vested within four years of the date of issuance. As of December 31, 2011 and 2012, 18,275 shares of common stock were issued and outstanding under the Stock Restriction and Repurchase Agreements. As of December 31, 2012 all of these shares were fully vested and not subject to repurchase.

In August 2006, the Company issued 87,586 shares of restricted Common Stock to certain founders and employees (the Recipients) for a price of $0.029 per share, for total proceeds of $3,000. The restricted stock vested over three years, during which time the Company had the right to repurchase the unvested shares at the amount paid if the relationship between the Recipients and the Company ceased. In 2006, the Company also issued an additional 53,448 shares of restricted Common Stock to a founder for $0.029 per share, for total proceeds of $2,000. These shares were not subject to vesting or any right to repurchase. At December 31, 2012 all 141,034 shares were vested and were held by the Recipients.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 10. Income Taxes

The Company accounts for income taxes under FASB Accounting Standards Codification 740 (ASC 740). Deferred income tax assets and liabilities are determined based upon differences between financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse.

For the years ended December 31, 2011 and 2012, the Company did not have a current or deferred income tax expense or benefit.

As of December 31, 2012 the Company had federal net operating loss carryforwards of approximately $81.4 million and state net operating loss carryforwards of $81.0 million, which are available to reduce future taxable income. The Company also had federal tax credits of $1.6 million, which may be used to offset future tax liabilities. The net operating loss (NOL) and tax credit carryforwards will expire at various dates through 2031. The NOL and tax credit carryforwards are subject to review and possible adjustment by the Internal Revenue Service and state tax authorities. Net operating loss and tax credit carryforwards may become subject to an annual limitation in the event of certain cumulative changes in the ownership interest of significant shareholders over a three-year period in excess of 50%, as defined under Sections 382 and 383 of the Internal Revenue Code, respectively, as well as similar state provisions. This could limit the amount of tax attributes that can be utilized annually to offset future taxable income or tax liabilities. The amount of the annual limitation is determined based on the value of the Company immediately prior to the ownership change. Subsequent ownership changes may further affect the limitation in future years. The Company has not, as yet, conducted a study of research and development (R&D) credit carryforwards. This study may result in an adjustment to the Company s R&D credit carryforwards; however, until a study is completed and any adjustment is known, no amounts are being presented as an uncertain tax position.

The Company has recorded no reserves or unrecognized tax benefits for tax positions taken. Since a full valuation allowance has been provided against the Company s deferred tax assets, the effect of any unrecognized tax benefits would simply be to reduce the gross amount of the deferred tax asset and the corresponding valuation allowance. As of December 31, 2012, the Company had no accrued interest or penalties related to uncertain tax positions. Since the Company is in a loss carryforward position, the Company is generally subject to examination by the U.S. federal, state and local income tax authorities for all tax years in which a loss carryforward is available.

The principal components of the Company s deferred tax assets are as follows:

	Year ended December 31,	
	2011	2012
Deferred tax assets:		
Net operating loss carry forwards	$ 26,318	$ 31,958
Temporary differences	925	1,046
Research and development credit and carry forwards	2,214	2,326
Deferred tax assets	29,457	35,330
Less valuation allowance	(29,457)	(35,330)
Net deferred tax assets	$	$

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 10. Income Taxes (continued)

ASC 740 requires a valuation allowance to reduce the deferred tax assets reported, if based on the weight of available evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized. After consideration of all the evidence, both positive and negative, the Company has recorded a valuation allowance against its deferred tax assets at December 31, 2011 and 2012, respectively because the Company s management has determined that is it more likely than not that these assets will not be fully realized. The $5.9 million increase in the valuation allowance in 2012 primarily relates to the net loss incurred by the Company.

The Company is currently open to examination under the statute of limitations by the Internal Revenue Service and state jurisdictions for the tax years ended 2009 through 2012. Carryforward tax attributes generated in years past may still be adjusted upon future examination if they have or will be used in a future period. The Company is currently not under examination by the Internal Revenue Service or any other jurisdictions for any tax years.

A reconciliation of the Federal statutory tax rate of 34% to the Company s effective income tax rate follows:

	Year ended December 31,	
	2011	2012
Statutory tax rate	(34.00)%	(34.00)%
State taxes, net of Federal benefits	(5.28)%	(5.28)%
Permanent differences	0.39%	1.01%
Credits	(4.85)%	(0.09)%
Change in valuation allowance	42.37%	38.92%
Other	1.37%	(0.56)%
Effective tax rate	%	%

Note 11. Commitments and Contingencies

Lease Commitments

The Company leases its facility under an operating lease that was to expire on November 30, 2012. On March 15, 2012 and September 18, 2012, the Company amended its operating lease, which extended the lease term through May 31, 2014. The Company recognizes rent expense on a straight-line basis over the non-cancelable lease term.

As of December 31, 2012, the minimum future rent payments under the lease agreement are as follows:

	December 31, 2012
2013	$ 623
2014	265
2015	

Total minimum lease payment	$ 888

The Company recorded $476,000 and $550,000 in rent expense for the years ended December 31, 2011 and 2012, respectively. Total rent expense for the period from July 7, 2006 (inception) to December 31, 2012 was $3.0 million.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 12. Litigation

Litigation

The Company is not a party to any litigation and does not have contingency reserves established for any litigation liabilities.

Note 13. Subsequent Events

2012 Term B Loan

On February 28, 2013, the Company borrowed $3.0 million (2012 Term B Loan) under its debt facility with Silicon Valley Bank and Oxford Finance (Note 6). The 2012 Term B Loan bears interest at 9% per annum. The Company is only required to pay interest (and not principal) for the first six months following the borrowing date of the 2012 Term B Loan and the 2012 Term B Loan is to be repaid in 33 equal monthly payments of principal, plus accrued interest, after the interest only period. An additional payment of 2.90% of the original principal amount of the 2012 Term B Loan will be due at the same time as the last loan payment of the 2012 Term B Loan. In connection with the 2012 Term B Loan, a warrant, previously issued by the Company to Silicon Valley Bank, became exercisable for an additional 233,372 shares of Series C Preferred Stock. In addition, the Company issued a 10-year warrant to Oxford Finance to purchase an additional 233,372 shares of Series C Preferred Stock at an exercise price of $0.2571.

Amendment of Certificate of Incorporation

On February 28, 2013 the Company s board of directors approved an amendment to the Company s certificate of incorporation to (i) effect a 1-for-29 reverse split of its Common Stock (the Reverse Split) and (ii) amend the mandatory conversion provisions of its certificate of incorporation to provide that all outstanding shares of the Company s Preferred Stock will automatically convert to Common Stock on a 1-for-29 basis upon the closing of a public offering of Common Stock with gross proceeds to the Company of not less than $50,000,000 if such closing takes place on or before June 30, 2013. The Company effected this amendment to its certificate of incorporation on March 5, 2013.

All references to shares of Common Stock outstanding, average number of shares outstanding and per share amounts in these consolidated financial statements and notes to consolidated financial statements have been restated to reflect the Reverse Split on a retroactive basis.

Approval of 2013 Stock Incentive Plan

On February 28, 2013, the Company s board of directors and stockholders approved, effective upon the closing of the Company s initial public offering, a 2013 Stock Incentive Plan (the 2013 Plan). Under the 2013 Plan, the Company may grant incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock, restricted stock units and other stock-based awards for the purchase of that number of shares of Common Stock equal to the sum of (i) the lesser of 5,000,000 (after giving effect to the Reverse Split) shares of Common Stock and the number of shares of Common Stock that represents 8.5% of the outstanding shares of Common Stock upon the closing of the Company s initial public offering, (ii) any shares of Common Stock reserved for issuance under the Company s 2006 Stock Incentive Plan (the 2006 Plan) that remain available for issuance under the 2006 Plan upon the closing of the Company s initial public offering, (iii) any shares of Common Stock subject to awards under the 2006 Plan which awards expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by the Company without having been fully exercised or resulting

Table of Contents

Tetraphase Pharmaceuticals, Inc.

(A Development Stage Company)

Notes to Consolidated Financial Statements

Note 13. Subsequent Events (continued)

Approval of 2013 Stock Incentive Plan (continued)

in any Common Stock being issued. In addition, the number of shares of Common Stock that may be issued under the 2013 Plan would be subject to automatic annual increases, to be added on January 1 of each year from January 1, 2014 through and including January 1, 2023, equal to the lowest of (a) the number of shares that is the lesser of 3,000,000 (after giving effect to the Reverse Split), (b) 4% of the outstanding shares of Common Stock or (c) an amount determined by the Company s board of directors.

Table of Contents

Tetraphase Pharmaceuticals, Inc.

4,500,000 Shares

Common Stock

Prospectus

November 6, 2013

BMO Capital Markets **Stifel**

Guggenheim Securities **JMP Securities** **Needham & Company**