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As filed with the Securities and Exchange Commission on April 13, 2012

Registration No. 333-178188

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

Amendment No. 4
To
FORM S-1
REGISTRATION STATEMENT

UNDER
THE SECURITIES ACT OF 1933

Rib-X Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**2834**	**06-1599437**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(IRS Employer Identification No.)**

300 George Street, Suite 301
New Haven, Connecticut 06511
(203) 624-5606
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Mark Leuchtenberger
President and Chief Executive Officer
Rib-X Pharmaceuticals, Inc.
300 George Street, Suite 301
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(203) 624-5606
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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

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

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

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

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

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒ (Do not check if a smaller reporting company)	Smaller reporting company	☐

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

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

Subject to Completion, Dated April 13, 2012

PRELIMINARY PROSPECTUS

Shares

Common Stock

This is the initial public offering of shares of the common stock of Rib-X Pharmaceuticals, Inc. We are offering shares of our common stock. We anticipate the initial public offering price will be between $ and $ per share. We have applied to list our common stock on the NASDAQ Global Market under the symbol "RIBX."

Investing in our common stock involves risks. See "Risk Factors" beginning on page 12.

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

	Per Share	Total
Public offering price	$	$
Underwriting discounts and commissions	$	$
Proceeds, before expenses, to us	$	$

We have granted the underwriters the right to purchase up to additional shares of common stock to cover over-allotments.

The underwriters expect to deliver the shares on , 2012.

Deutsche Bank Securities

William Blair & Company

Lazard Capital Markets

Needham & Company

The date of this prospectus is , 2012

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ABOUT THIS PROSPECTUS

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

Until , 2012 (25 days after the date of this prospectus), all dealers that buy, sell or trade our common stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the obligation of dealers to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

This prospectus includes estimates, statistics and other industry and market data that we obtained from industry publications, research, surveys and studies conducted by third parties and publicly available information. Such data involves a number of assumptions and limitations and contains projections and estimates of the future performance of the industries in which we operate that are subject to a high degree of uncertainty. This prospectus also includes data based on our own internal estimates. We caution you not to give undue weight to such projections, assumptions and estimates.

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PROSPECTUS SUMMARY

This summary provides an overview of selected information contained elsewhere in this prospectus and does not contain all of the information you should consider before investing in our common stock. You should carefully read this prospectus and the registration statement of which this prospectus is a part in their entirety before investing in our common stock, including the information discussed under "Risk Factors" and our financial statements and related notes appearing elsewhere in this prospectus. Unless otherwise indicated herein, the terms "we," "our," "us," or "the Company" refer to Rib-X Pharmaceuticals, Inc.

Overview

We are a biopharmaceutical company developing new antibiotics to provide superior coverage, safety and convenience for the treatment of serious and life-threatening infections. Our proprietary drug discovery platform, which is based on Nobel Prize-winning science, provides an atomic-level, three-dimensional understanding of interactions between drug candidates and their bacterial targets and enables us to systematically engineer antibiotics with enhanced characteristics. Our most advanced product candidate, delafloxacin, is intended for use as an effective and convenient first-line therapy primarily in hospitals prior to the availability of a specific diagnosis. Unlike currently available first-line treatments, delafloxacin has the potential to offer broad-spectrum coverage as a monotherapy for serious Gram-negative and Gram-positive bacterial infections, including for methicillin-resistant *Staphylococcus aureus*, or MRSA, with both intravenous and oral formulations. Most bacteria are broadly categorized as either Gram-positive, meaning that they 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, or Gram-negative, meaning that they have two membranes with a thin cell wall and, when subjected to Gram's method of staining, lose the stain or are decolorized. Delafloxacin has completed four Phase 2 clinical trials, including a Phase 2b clinical trial for the treatment of acute bacterial skin and skin structure infections, or ABSSSI. We received results from this Phase 2b trial in December 2011 and plan to commence the first of two planned Phase 3 trials for the treatment of ABSSSI in the second half of 2012. The timing of our second planned Phase 3 clinical trial will depend upon obtaining additional funding beyond the proceeds of this contemplated offering. Based on our current expectations regarding the availability of such funding and subject to the results of these two trials, we anticipate submitting a New Drug Application for delafloxacin for the treatment of ABSSSI as early as the fourth quarter of 2014 and for additional indications thereafter. Our second product candidate, radezolid, is a next-generation, IV/oral oxazolidinone designed to be a potent antibiotic with a safety profile permitting long-term treatment of resistant infections, including those caused by MRSA. We have completed two Phase 2 clinical trials of radezolid. We are also pursuing development of RX-04, our preclinical program partnered with Sanofi, S.A., which has produced new classes of antibiotics that attach to a location on the bacterial ribosome to which no other approved class of antibiotics bind and are designed to combat the most difficult-to-treat, multi-drug resistant Gram-positive and Gram-negative bacteria. Because its protein building function is essential for the life of infection-causing bacteria, the bacterial ribosome is the target of most marketed antibiotics, which work by binding to the ribosome and inhibiting its function. In addition, our pipeline includes RX-05, an antibacterial discovery program, and RX-06, an antifungal discovery program, both of which target newly discovered binding sites within ribosomes.

We believe one of our key competitive advantages is our focus on the three-dimensional properties of antibiotics, which is enabled by our proprietary drug discovery platform. Unlike

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traditional approaches to antibiotic discovery, which generally rely on random screening of chemical libraries to identify potential compounds, our discovery team utilizes sophisticated, customized computer software to simulate and predict in three-dimensions both inter- and intra-molecular reactions and resulting properties of compounds including absorption, distribution, metabolism, excretion and toxicology. We combine these exclusive computational tools with our patent-protected, atomic-level insights into the structure of the ribosome to systematically engineer novel antibiotics to avoid resistance and optimize potency, spectrum, efficacy and safety. As a result, we have created a highly efficient and productive drug development engine based on our unique design strategy that effectively leverages structure-based drug design, preparative medicinal chemistry, ribosome biochemistry, molecular biology and pharmacology.

According to Datamonitor, in the seven major pharmaceutical markets, which consist of the United States, Japan, the United Kingdom, Germany, France, Italy and Spain, antibiotic product sales totaled approximately $20 billion in 2009 and, within the hospital market, approximately $8 billion was generated from antibiotic sales in 2006. *Staphylococcus* skin and soft tissue infections in the United States alone accounted for on average nearly 12 million physician and emergency department visits annually in the years from 2001 to 2003 according to the Centers for Disease Control, or CDC. In addition, the Infectious Disease Society of America, or IDSA, estimated in 2004 that nearly two million infections are developed in the hospital setting annually in the United States, resulting in the deaths of 90,000 patients each year. Of these infections, 70% are caused by bacteria that are resistant to one or more antibiotics used to treat them, including those caused by MRSA. The CDC estimated that MRSA alone caused 94,000 life-threatening infections and almost 19,000 deaths in 2005 in the United States, exceeding the number of deaths caused by HIV/AIDS in that year. Based on data provided by GlobalData for the U.S. pharmaceutical market and the global pharmaceutical market, we estimate that the use of antibiotics to treat MRSA has increased at a compounded annual growth rate of 18% for the years from 2005 to 2010 and is forecasted to continue growing through 2017.

The three major branded antibiotics used for the treatment of serious infections, Zyvox (linezolid), Cubicin (daptomycin) and Tygacil (tigecycline), generated U.S. sales in 2011 of $640 million, $699 million and $148 million, respectively. In addition, there were over four million courses of vancomycin, a generic drug used to treat serious infections caused by resistant Gram-positive bacteria like MRSA, dosed in 2009.

According to the Joint Commission, formerly the Joint Commission on Accreditation of Healthcare Organizations, hospitals are generally required to begin administering antibiotics to patients with serious infections within six hours of presentation to the hospital, well in advance of the up to 48 hours required to diagnose the particular bacteria causing the infection. As a result, this first-line antibiotic therapy needs to offer a broad spectrum of antibacterial coverage that includes MRSA. Because there is no single broad-spectrum antibiotic available that is safe for first-line use and also has potency against MRSA, according to Datamonitor, the current first-line standard of care for serious infections is an antibiotic cocktail consisting of the twice-daily intravenous, or IV, administration of vancomycin for MRSA coverage, and one or more additional antibiotics to broaden the overall spectrum of coverage. The use of vancomycin, a narrow-spectrum Gram-positive treatment, may be increasingly limited due to its risk of adverse side effects and the rise of vancomycin-resistant bacterial strains in recent years. According to Datamonitor, these limitations often require the use of a second-line treatment, such as Cubicin or Zyvox, for MRSA and other resistant Gram-positive bacteria. However, as indicated in its prescribing information, Cubicin is only available in an IV form and requires laboratory

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monitoring at least weekly for toxic side effects. Although Zyvox has an available oral form, as indicated in its prescribing information, it requires active monitoring for use beyond two weeks due to the potential for significant adverse side effects, including bone marrow suppression, or myelosuppression, and nerve damage, or neurotoxicity. In addition, studies published in *The New England Journal of Medicine* and *Antimicrobial Agents and Chemotherapy* have found that Cubicin and Zyvox have also been associated with increasing drug resistance. As indicated in its prescribing information, Tygacil, a broad-spectrum antibiotic, is generally utilized as a third- or fourth-line antibiotic due to its greater risk of mortality as compared to the active comparators in its clinical studies, and the high rates of vomiting and nausea.

We believe that antibiotic resistance has eroded the efficacy and exacerbated the limitations of current treatments, creating significant unmet needs for new antibiotics that represent new treatment paradigms. In particular, these include:

- the need for an effective and convenient first-line, broad-spectrum antibiotic with coverage of MRSA that can be administered as a single treatment, or monotherapy, primarily in hospitals during the critical early period of a patient's care when a specific diagnosis is not yet available;
- the need for a potent antibiotic with a safety profile permitting long-term treatment of resistant infections, including MRSA;
- the need for drugs that treat multi-drug resistant bacteria, which are generally the most difficult to treat; and
- the ongoing need for new drugs to combat the continuing problem of drug resistance.

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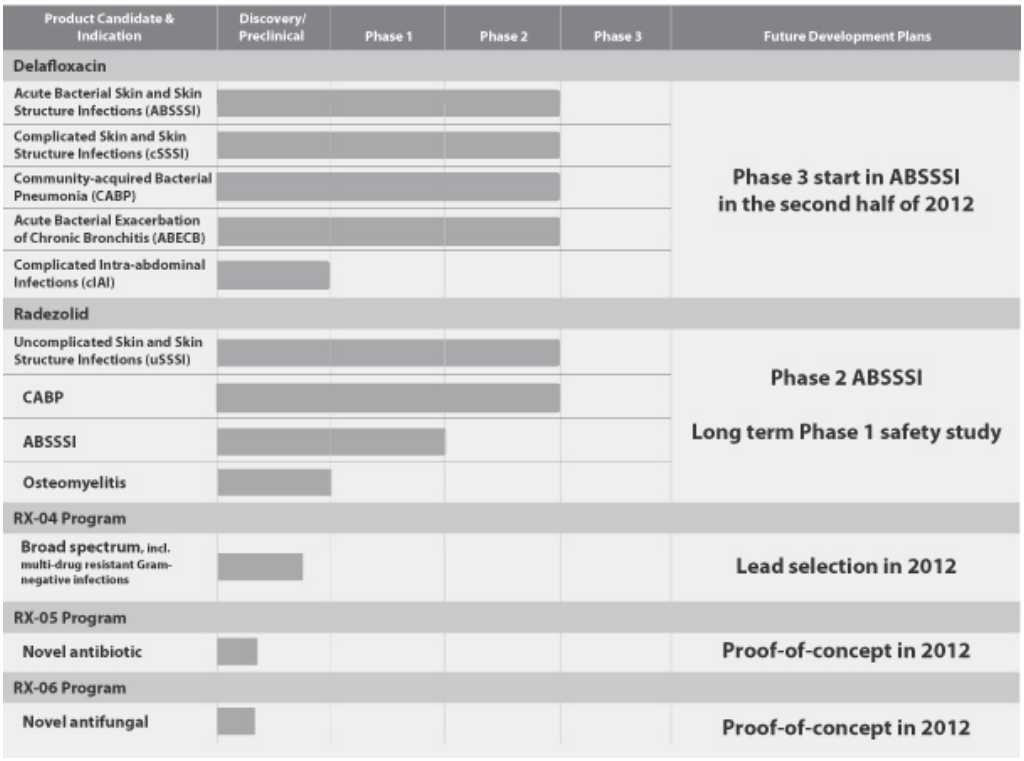
Our unique drug discovery approach serves as the foundation for our pipeline of clinical and earlier-stage product candidates, set forth below, that we believe can address these unmet needs for the treatment of serious infections.



Delafloxacin. Delafloxacin is intended for use as an effective and convenient first-line antibiotic primarily in hospitals prior to the availability of a specific diagnosis. Unlike current first-line treatments, delafloxacin has the potential to offer broad-spectrum coverage as a monotherapy, including for MRSA, with both IV and oral formulations. In addition to strong Gram-positive potency, delafloxacin has shown excellent *in vitro* activity against most Gram-negative bacteria commonly found in the hospital setting. We are developing both IV and oral formulations of delafloxacin to enable patients who begin IV treatment in the hospital setting to transition to oral dosing for home-based care, offering the potential to increase patient convenience, lower the overall cost of treatment and reduce the length of hospital stays. We believe that these attributes, combined with delafloxacin's safety profile and reduced probability of resistance, demonstrate the potential of delafloxacin to become a new standard of care for first-line treatment of serious infections and thereby reduce the need to switch to second-line, narrow-spectrum antibiotics.

We have received results from our Phase 2b clinical trial designed to compare the efficacy of delafloxacin for the treatment of ABSSSI, including infections caused by MRSA, to Zyvox (linezolid), with and without aztreonam, and vancomycin, with and without aztreonam. Delafloxacin met primary and secondary efficacy endpoints evaluated to date. Of note, although

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this Phase 2b trial was not designed to demonstrate statistical significance, for the primary endpoint of Investigators' Global Assessment of Cure, delafloxacin demonstrated a statistically significant efficacy advantage as compared to vancomycin. Additionally, delafloxacin demonstrated numerical benefit over both Zyvox (linezolid) and vancomycin in the secondary endpoint, cessation of lesion spread and absence or resolution of fever at 48 to 72 hours. Based on this analysis and other data, we believe delafloxacin has demonstrated a level of efficacy that strongly supports our planned initiation of a Phase 3 study of delafloxacin in the second half of 2012.

Radezolid. Radezolid is a next-generation oxazolidinone designed to meet the need for a potent antibiotic with both IV and oral formulations and a safety profile suitable for the treatment of serious infections, including ABSSSI and severe community-acquired bacterial pneumonia, or CABP, and those caused by MRSA, as well as long-term treatment of underserved serious infections, such as osteomyelitis and prosthetic and joint infections. Radezolid has several attributes allowing it to overcome known oxazolidinone resistance mechanisms and has shown excellent *in vitro* activity against resistant *Streptococcus pneumoniae* and MRSA. Unlike Zyvox and tedizolid, radezolid has also shown *in vitro* activity against *Haemophilus influenzae*, *Legionella pneumophila* and *Moraxella catarrhalis*, and other common causes of CABP. We believe that the demonstrated broad-spectrum of coverage, potency and potential long-term safety profile of radezolid give it the potential to become the antibiotic of choice for multiple resistant infections and for treatment in populations, such as the elderly and children, that might be vulnerable to myelosuppression caused by other oxazolidinone treatments.

RX-04 Program. Our most advanced preclinical program, the RX-04 program, is focused on using one novel binding site within the ribosome to design and develop new classes of antibiotics to treat some of the most deadly and difficult-to-treat, multi-drug resistant Gram-positive and Gram-negative infections. We also are designing candidates through the RX-04 program to have lower potential for resistance, lower potential for toxicity and potential for IV-to-oral dosing. Using our proprietary drug discovery platform, we have developed three novel classes of antibiotics in less than three years that bind to this ribosomal site.

In June 2011, we entered into a collaboration and license agreement with Sanofi related to our RX-04 program. Under this agreement, Sanofi has the right to license an unlimited number of product candidates targeting this discrete binding site within the ribosome. We retain all rights pertaining to our proprietary drug discovery platform, including all other binding sites within the ribosome and all future programs, as well as to any RX-04 compound that Sanofi does not exercise its option to develop during the three-year term of the collaboration. We have received $22.0 million through March 31, 2012 in upfront and milestone payments under the collaboration, including the receipt of a payment of $3.0 million from Sanofi in January 2012 for the achievement of a research milestone. For each RX-04 product developed by Sanofi, we are eligible for up to $9.0 million in potential research milestone payments, up to $27.0 million in potential development milestone payments relating to initiation of Phase 1, 2 and 3 clinical trials, up to $50.0 million in potential regulatory milestone payments relating to approvals in various jurisdictions including the United States, the European Union and Japan, up to $100.0 million in potential commercial milestone payments, and tiered percentage royalties of up to 10% on sales from products commercialized under the agreement, if any. We also have the right under the collaboration to co-commercialize one RX-04 product of our choosing with Sanofi in the United States. We are currently collaborating with Sanofi on ongoing preclinical development and lead generation and, as part of a comprehensive safety assessment, we have just completed *in vitro* and *in vivo* profiling of the first cohort of leads from the RX-04 program that demonstrated strong potency and efficacy. These results have informed the next iteration of design and optimization. We expect the results of this optimization round to inform the selection of a lead compound in 2012 for toxicology studies followed by Phase 1 studies in humans.

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Our Strategy

Our objective is to discover, develop and commercialize best-in-class and new classes of anti-infectives with superior coverage, safety and convenience to provide new standards of care for patients with serious and life-threatening infections. The critical components of our business strategy are:

- ***Complete the clinical development of delafloxacin.*** We plan to commence the first of two planned Phase 3 trials for the treatment of ABSSSI in the second half of 2012. The timing of our second planned Phase 3 clinical trial will depend upon obtaining additional funding beyond the proceeds of this contemplated offering. Based on our current expectations regarding the availability of such funding and subject to the results of these two trials, we anticipate submitting applications for marketing approval to the U.S. Food and Drug Administration and European Medicines Agency as early as the fourth quarter of 2014. We also intend to seek approval for additional indications for delafloxacin, including CABP and cIAI.
- ***Advance the clinical development of radezolid***. We have successfully completed Phase 2 studies with an oral formulation of radezolid in uncomplicated skin and skin structure infections, or uSSSI, and in CABP. Subject to obtaining sufficient additional funding beyond the proceeds of this contemplated offering, we intend to initiate a Phase 2 study for the treatment of ABSSSI and a Phase 1 long-term safety study in humans to demonstrate what we believe is a long-term safety advantage over Zyvox. Following these studies, we also intend to perform additional clinical trials of radezolid in ABSSSI and CABP and for indications that require long-term treatment, such as osteomyelitis and prosthetic and joint infections, including as a result of orthopedic surgery.
- ***Advance the development of multiple product candidates from our RX-04 program through our collaboration with Sanofi.*** We intend to work with Sanofi under our collaboration agreement to identify and develop multiple RX-04 product candidates. In addition to the development and commercial milestone payments for which we are eligible for each RX-04 product candidate, we intend to exercise our right to co-commercialize one RX-04 product of our choosing in the United States. We expect that the product candidates that emerge from the RX-04 program will target a variety of uses, including the treatment of the most deadly and difficult-to-treat, multi-drug resistant Gram-positive and Gram-negative pathogens.
- ***Leverage our discovery platform to continue to expand our pipeline of anti-infective product candidates.*** We intend to continue to pursue active discovery programs using our proprietary platform to identify new binding sites within the ribosome and additional product candidates with broad-spectrum efficacy and safety to combat resistance mechanisms. In particular, we intend to demonstrate evidence of potency enabling lead identification and optimization in our RX-05 antibiotic program and our RX-06 antifungal program in 2012.
- ***Build in-house commercialization capabilities in the United States and opportunistically seek partners for the commercialization of our drug candidates outside of the United States***. We have retained worldwide rights to our drug discovery platform and all of our drug discovery and development programs other than the RX-04 program, where we maintain U.S. co-commercialization rights for one product candidate of our choosing. Outside of the United States, we expect to seek strategic partnerships for the further development and commercialization of our product candidates, including delafloxacin and radezolid. We also intend to explore additional funded collaborations leveraging our drug discovery platform.

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Risks Relating to Our Business

We are an early-stage biopharmaceutical company, and our business and ability to execute our business strategy are subject to a number of risks of which you should be aware before you decide to buy our common stock. In particular, you should consider the following risks, which are discussed more fully in "Risk Factors":

- we have never been profitable, have no products approved for commercial sale and may never achieve profitability;
- we will need to obtain substantial additional funding beyond this contemplated offering to complete the development and commercialization of delafloxacin and to continue to advance the development of radezolid and our other product candidates;
- we have never conducted a Phase 3 clinical trial for any of our product candidates and cannot be certain that delafloxacin or any of our other product candidates will receive regulatory approval for commercial sale;
- we may be subject to delays in our clinical trials, which could result in increased costs and delay or limit our ability to obtain regulatory approval for our product candidates;
- because the results of earlier studies and clinical trials of our product candidates may not be predictive of future clinical trial results, our product candidates may not have favorable results in future clinical trials, which would delay or limit their future development;
- we may be unable to successfully identify, develop, license or commercialize any product candidates under our collaboration with Sanofi, or to establish other development and commercialization collaborations for delafloxacin and radezolid, which would adversely affect our ability to realize the expected benefits of such collaborations and further develop our product candidates;
- we may be unable to maintain and protect our proprietary intellectual property assets, which could impair our drug discovery platform and commercial opportunities; and
- we have incurred significant losses since our inception resulting in an accumulated deficit of $244.3 million as of December 31, 2011 and expect to incur losses for the foreseeable future, which, among other things, raises substantial doubt about our ability to continue as a going concern.

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Corporate Information

We were incorporated in Delaware in October 2000 under the name Rib-X Designs, Inc. and changed our name to Rib-X Pharmaceuticals, Inc. in December 2000. Our primary executive offices are located at 300 George Street, Suite 301, New Haven, CT 06511-6663, and our telephone number is (203) 624-5606. Our website address is http://www.rib-x.com. The information contained on, or that can be accessed through, our website is not part of this prospectus.

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THE OFFERING

Common stock offered by us	shares
Common stock to be outstanding after this offering	shares
Use of proceeds	We intend to use the net proceeds of this offering to advance the development of our product candidates. See "Use of Proceeds."
Proposed NASDAQ Global Market symbol	RIBX

The information above is based on shares of our common stock outstanding as of December 31, 2011. It does not include:

- shares of our common stock issuable upon the exercise of stock options outstanding as of December 31, 2011 at a weighted average exercise price of $ per share;
- shares of our common stock issuable upon the vesting of restricted stock units granted under our 2011 Equity Incentive Plan pursuant to our Management Bonus Plan in connection with this offering;
- shares of our common stock issuable upon the vesting of restricted stock units granted under our 2011 Equity Incentive Plan pursuant to our Non-Employee Director Bonus Plan in connection with this offering;
- additional shares of our common stock that will be available for future issuance under our 2011 Equity Incentive Plan; and
- shares of our common stock issuable upon the exercise of warrants outstanding as of December 31, 2011 at a weighted average exercise price of $ per share.

Unless otherwise indicated, all information contained in this prospectus assumes and reflects the following:

- the adoption of our restated certificate of incorporation and restated by-laws in connection with the consummation of this offering;
- the issuance of shares of our common stock upon the conversion of all outstanding shares of our convertible preferred stock and accumulated dividends thereon upon the closing of this offering, assuming that the closing occurs on , 2012;
- the issuance of shares of our common stock upon the conversion of all outstanding principal and interest accrued on our senior convertible demand promissory notes, senior subordinated convertible demand promissory notes and subordinated convertible promissory notes, which we refer to collectively as our convertible notes, upon the closing of this offering, assuming an initial public offering price per share of $, the mid-point of the price range set forth on the cover page of this prospectus, and that the closing occurs on , 2012;
- a 1-for reverse split of our common stock to be effected prior to the completion of this offering; and
- no exercise of the underwriters' over-allotment option.

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Summary Financial Data

You should read this summary financial data together with our audited financial statements and the related notes thereto included elsewhere in this prospectus and the information under "Selected Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations." We derived the statement of operations data for the years ended December 31, 2009, 2010 and 2011, and the balance sheet data as of December 31, 2011, from our audited financial statements included elsewhere in this prospectus.

	Years Ended December 31,		
	2009	2010	2011
	(in thousands, except per share amounts)		
Statement of Operations Data:			
Revenues:			
Contract revenues	$ —	$ —	$ 2,705
Operating expenses:			
Research and development	17,592	12,422	31,206
General and administrative	3,888	5,152	5,723
Total operating expenses	21,480	17,574	36,929
Loss from operations	(21,480)	(17,574)	(34,224)
Other income (expense):			
Interest income	68	11	14
Interest expense	(6,952)	(10,290)	(19,497)
Other income	160	1,098	246
Total other income (expense)	(6,724)	(9,181)	(19,237)
Net loss	(28,204)	(26,755)	(53,461)
Convertible preferred stock dividends	(14,180)	(15,314)	(16,540)
Net loss attributable to common stockholders	$ (42,384)	$ (42,069)	$ (70,001)
Net loss per share, basic and diluted	$ (4.18)	$ (4.10)	$ (6.83)
Weighted average shares outstanding, basic and diluted	10,140	10,249	10,253
Pro forma net loss per share, basic and diluted (unaudited) (1)			
Weighted average shares used in computing pro forma net loss per share, basic and diluted (unaudited) (1)			

(1) The pro forma net loss per share and weighted average shares have been calculated to give effect to the (i) issuance of shares of common stock upon conversion of all outstanding shares of our convertible preferred stock and accumulated dividends thereon and upon conversion of all outstanding principal and accrued interest on the convertible notes payable assuming an initial public offering price per share of $, the mid-point of the range set forth on the cover page of this prospectus, (ii) settlement of the put rights upon the conversion of the convertible notes payable, (iii) conversion of the preferred stock warrants into common stock warrants and (iv) elimination of the common stock warrant exercise price protection term, in all cases, assuming each had occurred on the later of January 1, 2011 or where applicable, the issuance date of the convertible notes payable. See Note 2 to our financial statements included elsewhere in the prospectus.

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The summary unaudited pro forma balance sheet as of December 31, 2011 has been prepared to give effect to the (i) issuance of shares of common stock upon conversion of all outstanding shares of our convertible preferred stock and accumulated dividends thereon and upon conversion of all outstanding principal and accrued interest on the convertible notes payable, in each case, assuming an initial public offering price per share of $, the mid-point of the range set forth on the cover page of this prospectus, (ii) settlement of the put rights upon the conversion of the convertible notes payable, (iii) conversion of the preferred stock warrants into common stock warrants, and (iv) elimination of the common stock warrant exercise price protection term, assuming in all cases, as if each had occurred on December 31, 2011. The summary unaudited pro forma as adjusted balance sheet as of December 31, 2011 has been prepared to give effect to the foregoing items (i) through (iv) and the sale of shares of common stock in this offering after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us at an assumed initial public offering price per share of $, the mid-point of the range set forth on the cover page of this prospectus, assuming in all cases, as if each had occurred on December 31, 2011. The summary unaudited pro forma and pro forma as adjusted balance sheet is for informational purposes only and does not purport to indicate balance sheet information as of any future date.

	As of December 31, 2011		
	Actual	Pro Forma (unaudited) (in thousands)	Pro Forma as Adjusted (unaudited)
Balance Sheet Data: (1)			
Cash and cash equivalents	$ 8,019		
Total assets	11,690		
Convertible notes payable (2)	62,143		
Accrued interest on convertible notes payable (2)	14,182		
Put rights	28,223		
Deferred revenue, net of current portion (3)	9,997		
Convertible preferred stock	122,428		
Accumulated equity (deficit)	(244,264)		
Total stockholders' equity (deficit)	(239,297)		

(1) The balance sheet data does not reflect the impact of $15,000 we borrowed under a loan and security agreement entered into in February 2012. As a result, our cash and cash equivalents balance as of March 31, 2012 was $14,276. The aggregate principal amount outstanding under the loan and security agreement as of March 31, 2012 was $15,000. See Note 17 to our audited financial statements included elsewhere in this prospectus for further details regarding this loan and security agreement.

(2) Convertible notes payable and accrued interest on convertible notes payable were current liabilities as of December 31, 2011.

(3) Deferred revenue is related to our collaboration and license agreement with Sanofi. See Note 3 to our financial statements included elsewhere in this prospectus.

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RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the following risk factors, as well as the other information in this prospectus, including our financial statements and related notes, before deciding whether to invest in shares of our common stock. The occurrence of any of the following adverse developments described in the following risk factors could materially and adversely harm our business, financial condition, results of operations or prospects. In that case, the trading price of our common stock could decline, and you may lose all or part of your investment.

Risks Relating Our Financial Position and Need for Additional Capital

We have never been profitable. Currently, we have no products approved for commercial sale, and to date we have not generated any revenue from product sales. As a result, our ability to reduce our losses and reach profitability is unproven, and we may never achieve or sustain profitability.

We have never been profitable and do not expect to be profitable in the foreseeable future. We have incurred net losses in each year since our inception, including net losses of $28.2 million, $26.8 million and $53.5 million for 2009, 2010 and 2011, respectively. As of December 31, 2011, we had an accumulated deficit of $244.3 million. We have devoted most of our financial resources to research and development, including our preclinical development activities and clinical trials. We have not completed development of any product candidate and we have therefore not generated any revenues from product sales. We expect to incur increased expenses if and as we commence Phase 3 development of delafloxacin, satisfy our obligations under our agreement with Sanofi, advance our other product candidates and expand our research and development programs. We also expect an increase in our expenses associated with seeking regulatory approvals and preparing for commercialization of our product candidates, and adding infrastructure and personnel to support our product development efforts and operations as a public company. As a result of the foregoing, we expect to continue to experience net losses and negative cash flows for the foreseeable future. These net losses and negative cash flows have had, and will continue to have, an adverse effect on our stockholders' equity and working capital.

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. In addition, our expenses could increase if we are required by the United States Food and Drug Administration, or FDA, 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. The amount of future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate revenues. To date, our only source of revenue has been our collaboration and license agreement with Sanofi. Future payments from Sanofi under this collaboration are uncertain because Sanofi may choose not to continue research or development of activities for one or more potential RX-04 product candidates under the collaboration, we may not achieve milestones under the agreement with Sanofi, Sanofi may not exercise its option to license any RX-04 product candidates, and RX-04 product candidates may not be approved or, if they are approved, may not be accepted in the market. If we are unable to develop and commercialize one or more of our product candidates, either alone or with collaborators, or if revenues from any such collaboration product candidate that receives marketing approval are insufficient, we will not achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability.

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If we are unable to raise capital when needed, we would be forced to delay, reduce or eliminate our product development programs.

Developing pharmaceutical products, including conducting preclinical studies and clinical trials, is expensive. We expect to incur increased expenses as we commence Phase 3 development of delafloxacin, satisfy our obligations under our agreement with Sanofi, advance our other product candidates and expand our research and development programs. Moreover, proceeds from this offering will not be sufficient to complete the development and commercialization of our lead product candidate, delafloxacin, or to continue the development of radezolid. Accordingly, we will need to obtain additional funding beyond the proceeds of this contemplated offering to complete the development and commercialization of delafloxacin as well as to continue to advance the development of radezolid and our other clinical and preclinical candidates. In order to complete Phase 3 development of delafloxacin, we estimate that our first planned ABSSSI Phase 3 study will cost approximately $ million and our second planned ABSSSI Phase 3 study will cost approximately $ million. If the FDA requires that we perform additional studies beyond those that we currently believe will be required, our expenses would further increase beyond what we currently anticipate and the anticipated timing of any potential product approvals may be delayed. Under our collaboration and license agreement with Sanofi, we are required to use personnel and other resources in the conduct of a joint development plan directed toward identifying and optimizing product candidates thereunder meeting mutually agreed target product profiles. We currently have no commitments or arrangements to fund our research and development programs other than future contingent milestone or royalty payments from Sanofi, which require the successful development, regulatory approval and commercialization of one or more product candidates thereunder and may not be received for several years. We believe that the net proceeds from this offering, together with amounts we anticipate receiving under our collaboration with Sanofi and existing cash and cash equivalents and interest thereon, will be sufficient to fund our projected operating requirements through the first quarter of 2014.

Our future funding requirements, both short-term and long-term, will depend on many factors, including, but not limited to:

- the initiation, progress, timing, costs and results of preclinical studies and clinical trials for our product candidates and potential product candidates, including initiation of Phase 3 development for delafloxacin;
- the success of our collaboration with Sanofi and receipt of milestones and royalty payments, if any, thereunder;
- the number and characteristics of product candidates that we pursue;
- the outcome, timing and costs of regulatory approvals;
- 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;
- the costs and timing of completion of commercial-scale outsourced manufacturing activities;
- the costs of establishing sales, marketing and distribution capabilities for any product candidates for which we may receive regulatory approval;
- the timing, receipt and amount of any sales, or royalties on, our product candidates, if any; and

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- the terms and timing of any future collaborative, licensing or other arrangements that we may establish.

Unless and until we can generate a sufficient amount of revenue from our product candidates, we expect to finance future cash needs through public or private equity offerings, debt financings or regional collaborations and licensing arrangements. Additional funds may not be available when we need them on terms that are acceptable to us, or at all. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our research or development programs or our commercialization efforts. To the extent that we raise additional funds by issuing equity securities, our stockholders may experience additional dilution, and debt financing, if available, may involve restrictive covenants. To the extent that we raise additional funds through collaborations and licensing arrangements, it may be necessary to relinquish some rights to our technologies or our product candidates or grant licenses on terms that may not be favorable to us. We may be required to access the public or private capital markets from time to time when conditions are unfavorable, or we may seek to access them when conditions are favorable even if we do not have an immediate need for additional capital.

We have a limited operating history and we expect a number of factors to cause our operating results to fluctuate on a quarterly and annual basis, which may make it difficult to predict our future performance.

Our operations to date have been primarily limited to developing our technology and undertaking preclinical studies and clinical trials of our product candidates. We have not yet obtained regulatory approvals for any of our product candidates. Consequently, any predictions made about our future success or viability may not be as accurate as they could be if we had a longer operating history or approved products on the market. Our financial condition and operating results have varied significantly in the past and are expected to continue to significantly fluctuate from quarter-to-quarter or year-to-year due to a variety of factors, many of which are beyond our control. Factors relating to our business that may contribute to these fluctuations include:

- our ability to obtain additional funding to develop our product candidates;
- the need to obtain and maintain regulatory approval in the United States as well as other significant non-U.S. markets for delafloxacin, radezolid, or any of our other product candidates;
- delays in the commencement, enrollment and timing of clinical trials;
- the success of our clinical trials through all phases of clinical development, including our Phase 3 clinical trials of delafloxacin;
- any delays in regulatory review and approval of product candidates in clinical development;
- potential side effects of our product candidates that could delay or prevent commercialization or cause an approved drug to be taken off the market;
- our ability to identify and develop additional product candidates;
- market acceptance of our product candidates;
- our ability to establish an effective sales and marketing infrastructure;
- competition from existing products or new products that may emerge;
- the ability of patients or healthcare providers to obtain coverage or sufficient reimbursement for our products;

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- our dependency on third-party manufacturers to manufacture our products or key ingredients;
- our ability to establish or maintain collaborations, licensing or other arrangements;
- the costs to us, and our ability and a third party's ability to obtain, maintain and protect intellectual property rights;
- costs related to and outcomes of potential intellectual property litigation;
- our ability to adequately support future growth;
- our ability to attract and retain key personnel to manage our business effectively;
- our ability to build our finance infrastructure and improve our accounting systems and controls;
- potential product liability claims;
- potential liabilities associated with hazardous materials; and
- our ability to maintain adequate insurance policies.

Accordingly, the results of any quarterly or annual periods should not be relied upon as indications of future operating performance.

The timing of milestone, royalty and other payments we are required to make under our license agreements are uncertain and could adversely affect our cash flows and results of operations.

We are obligated, including pursuant to an exclusive license and supply agreement with CyDex Pharmaceuticals, Inc. (now a wholly owned subsidiary of Ligand Pharmaceuticals Incorporated, both hereafter referred to as Ligand), an exclusive license agreement with Wakunaga Pharmaceutical Co., Ltd., or Wakunaga, and an exclusive license agreement with Yale University, to make milestone payments and pay royalties and other fees in connection with the development and commercialization of our product candidates. The timing of our achievement of these milestones and the corresponding milestone payments is subject to factors relating to the clinical and regulatory development and commercialization of our product candidates, which are difficult to predict and for which many are beyond our control. We may become obligated to make a milestone or other payment at a time when we do not have sufficient funds to make such payment, which could result in the loss of required intellectual property rights to further develop or commercialize one or more of our product candidates, or at a time that would otherwise require us to use funds needed to continue to operate our business, which could delay our clinical trials, curtail our operations, scale back our commercialization and marketing efforts or seek funds to meet these obligations on terms unfavorable to us. In addition, disputes with a licensor regarding compliance with the requirements of our agreements could result in our making milestone, royalty or other payments when we do not believe they are due to avoid potentially expensive litigation. If we are unable to make any payment when due or if we fail to use commercially reasonable efforts to achieve certain development and commercialization milestones within the timeframes required by these agreements, the other party may have the right to terminate the agreement and all of our rights to develop and commercialize product candidates using the applicable technology.

Our independent registered public accounting firm has expressed doubt about our ability to continue as a going concern.

Based on our cash balances, recurring losses, net capital deficiency, and significant debt outstanding as of December 31, 2011 and our projected spending in 2012, which raise

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substantial doubt about our ability to continue as a going concern, our independent registered public accounting firm has included an explanatory paragraph in its report on our financial statements as of and for the year ended December 31, 2011 regarding this uncertainty. We believe that the net proceeds from this offering, together with proceeds of $15.0 million from a loan agreement entered into in February 2012 and amounts we have received and anticipate receiving under our collaboration with Sanofi and existing cash and cash equivalents and interest thereon, will be sufficient to fund our projected operating requirements through the first quarter of 2014. However, if we are unable to continue as a going concern, we might have to liquidate our assets and the values we receive for our assets in liquidation or dissolution could be significantly lower than the values reflected in our financial statements. Amounts due under the February 2012 loan agreement may become immediately due and payable upon the occurrence of a material adverse change, as defined under the loan agreement. Under the terms of the loan agreement, we are subject to operational covenants, including limitations on our ability to incur liens or additional debt, pay dividends, redeem stock, make specified investments and engage in merger, consolidation or asset sale transactions, among other restrictions. In addition, the inclusion of a going concern statement by our auditors, our lack of cash resources and our potential inability to continue as a going concern may materially adversely affect our share price and our ability to raise new capital or to enter into critical contractual relations with third parties.

Risks Relating to Regulatory Review and Approval of Our Product Candidates

We cannot be certain that delafloxacin, radezolid, our RX-04 product candidates or any of our other product candidates will receive regulatory approval, and without regulatory approval we will not be able to market our product candidates.

We have invested a significant portion of our efforts and financial resources in the development of our most advanced product candidates, especially delafloxacin. Our ability to generate revenue related to product sales, if ever, will depend on the successful development and regulatory approval of these product candidates.

While it is not required, we plan to request a special protocol assessment, or SPA, for our Phase 3 clinical protocol for delafloxacin from the FDA. An SPA is intended to provide assurance that if the agreed upon clinical trial protocols are followed, the clinical trial endpoints are achieved, and there is a favorable risk-benefit profile, the data may serve as the primary basis for an efficacy claim in support of an NDA. However, SPA agreements are not a guarantee of an approval of a product candidate or any permissible claims about the product candidate. In particular, SPAs are not binding on the FDA if previously unrecognized public health concerns arise during the performance of the clinical trial, other new scientific concerns regarding product candidate safety or efficacy arise or if the sponsoring company fails to comply with the agreed upon clinical trial protocols. We cannot predict whether we will be able to reach agreement with the FDA on an SPA or, if we do reach agreement, whether any issues will arise during the clinical trial that would negate that agreement. In addition, we do not know how the FDA will interpret the commitments under the agreed upon SPA and how it will interpret the data and results.

We currently have no products approved for sale and we cannot guarantee that we will ever have marketable products. The development of a product candidate and issues relating to its approval and sale are subject to extensive regulation by the FDA in the United States and regulatory authorities in other countries, with regulations differing from country to country. 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

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candidates. An NDA must include extensive preclinical and clinical data and supporting information to establish the product candidate's safety and effectiveness for each desired indication. The NDA must also include significant information regarding the chemistry, manufacturing and controls for the product. Obtaining approval of an NDA is a lengthy, expensive and uncertain process, and may not be obtained. The FDA review process typically takes years to complete and approval is never guaranteed. If we submit an NDA to the FDA, the FDA must decide whether to accept or reject the submission for filing. We cannot be certain that any submissions will be accepted for filing and review by the FDA. Even if a product is approved, the FDA may limit the indications for which the product may be marketed, include extensive warnings on the product labeling or require expensive and time-consuming post-approval clinical trials or reporting as conditions of approval. Foreign regulatory authorities also have requirements for approval of drug candidates with which we must comply prior to marketing. Obtaining regulatory approval for marketing of a product candidate in one country does not ensure that we will be able to obtain regulatory approval in other countries. In addition, 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 our product candidates or other products. Also, regulatory approval for any of our product candidates may be withdrawn. If delafloxacin, radezolid or any of our other product candidates do not receive regulatory approval, we may not be able to generate sufficient revenue to become profitable or to continue our operations.

Delays in the commencement, enrollment and completion of clinical trials could result in increased costs to us and delay or limit our ability to obtain regulatory approval for our product candidates.

Delays in the commencement, enrollment and completion of clinical trials could increase our product development costs or limit the regulatory approval of our product candidates. We plan to commence the first of two planned Phase 3 trials of delafloxacin for the treatment of ABSSSI in the second half of 2012. However, the timing of the second planned Phase 3 clinical trial will depend upon obtaining additional funding beyond the proceeds of this offering. We may be unable to initiate or complete such development on schedule, if at all. In addition, we do not know whether any future trials or studies of our other product candidates will begin on time or will be completed on schedule, if at all. The commencement, enrollment and completion of clinical trials can be delayed for a variety of reasons, including:

- inability to obtain sufficient funds required for a clinical trial;
- inability to reach agreements on acceptable terms with prospective clinical research organizations, or CROs, and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- clinical holds, other regulatory objections to commencing a clinical trial or the inability to obtain regulatory approval to commence a clinical trial in those countries that require such approvals;
- inability to identify and maintain a sufficient number of trial sites, many of which may already be engaged in other clinical trial programs, including some that may be for the same indication as our product candidates;
- inability to obtain approval from institutional review boards, or IRBs, to conduct a clinical trial at their respective sites;
- severe or unexpected drug-related adverse effects experienced by patients;

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- difficulty recruiting and enrolling patients to participate in clinical trials for a variety of reasons, including meeting the enrollment criteria for our study and competition from other clinical trial programs for the same indication as our product candidates; and
- inability to retain enrolled patients after a clinical trial is underway.

Changes in regulatory requirements and guidance may also occur and we or any of our partners may need to amend clinical trial protocols to reflect these changes with appropriate regulatory authorities. Amendments may require us or any of our partners to resubmit clinical trial protocols to IRBs for re-examination, which may impact the costs, timing or successful completion of a clinical trial. In addition, a clinical trial may be suspended or terminated at any time by us, our current or future partners, the FDA or other regulatory authorities due to a number of factors, including:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- unforeseen safety issues or any determination that a clinical trial presents unacceptable health risks;
- lack of adequate funding to continue the clinical trial due to unforeseen costs or other business decisions; and
- upon a breach or pursuant to the terms of any agreement with, or for any other reason by, current or future partners that have responsibility for the clinical development of any of our product candidates, including Sanofi upon exercise of its rights to develop and commercialize any RX-04 compounds.

In addition, if we or any of our partners are required to conduct additional clinical trials or other testing of our product candidates beyond those contemplated, our ability to obtain regulatory approval of these product candidates and generate revenue from their sales would be similarly harmed.

Clinical failure can occur at any stage of clinical development and we have never conducted a Phase 3 trial or submitted an NDA before. The results of earlier clinical trials are not necessarily predictive of future results and any product candidate we, Sanofi or our potential future partners advance through clinical trials may not have favorable results in later clinical trials or receive regulatory approval.

Clinical failure can occur at any stage of our clinical development. Clinical trials may produce negative or inconclusive results, and we or our partners may decide, or regulators may require us, to conduct additional clinical or preclinical testing. In addition, data obtained from tests are susceptible to varying interpretations, and regulators may not interpret our data as favorably as we do, which may delay, limit or prevent regulatory approval. Success in preclinical testing and early clinical trials does not ensure that subsequent clinical trials will generate the same or similar results or otherwise provide adequate data to demonstrate the efficacy and safety of a product candidate. Frequently, product candidates that have shown promising results in early clinical trials have suffered significant setbacks in subsequent clinical trials. In addition, the design of a clinical trial can determine whether its results will support approval of a product and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. We have limited experience in designing clinical trials and may be unable to design and execute a clinical trial to support regulatory approval. Further, clinical trials of potential products often reveal that it is not practical or feasible to continue development efforts. If delafloxacin, radezolid or our other product candidates are found to be unsafe or lack efficacy, we will not be able to obtain regulatory approval for them and our

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business would be harmed. For example, if the results of our planned Phase 3 clinical trials of delafloxacin do not achieve the primary efficacy endpoints or demonstrate expected safety, the prospects for approval of delafloxacin would be materially and adversely affected. A number of companies in the pharmaceutical industry, including those with greater resources and experience than us, have suffered significant setbacks in Phase 3 clinical trials, even after seeing promising results in earlier clinical trials.

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 protocols, differences in 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. We do not know whether any Phase 2, Phase 3 or other clinical trials we or any of our partners may conduct will demonstrate consistent or adequate efficacy and safety to obtain regulatory approval to market our product candidates.

Our product candidates may have undesirable side effects which may delay or prevent marketing approval, or, if approval is received, require them to be taken off the market, require them to include safety warnings or otherwise limit their sales.

We refer to those adverse events observed in our clinical trials with an incidence rate equal to or greater than 5% of the subjects in a clinical trial as common adverse events. The common adverse events observed in clinical trials of delafloxacin were nausea, diarrhea, vomiting, pruritus, fatigue, headache, dizziness, infusion site pain, insomnia, constipation, rhinitis and dry mouth. The common adverse events observed in clinical trials of radezolid were nausea, diarrhea, headache, dizziness and fungal infection. Three patients receiving delafloxacin in our clinical trials have had serious adverse events that were thought by the investigator to be possibly related to delafloxacin therapy. One patient with a previously non-disclosed recent onset seizure disorder had a further seizure on delafloxacin. One patient with a complicated medical history was hospitalized with abdominal pain and diarrhea. A third patient had a single episode of mouth swelling and shortness of breath. Two patients receiving radezolid in our clinical trials have had serious adverse events that were thought by the investigator to be possibly related to radezolid therapy. One patient with lung cancer had a pneumonia that did not respond to radezolid therapy. A second patient with prior peptic ulcer disease discontinued ulcer therapy prior to enrolling in a radezolid trial and had a recurrent ulcer with perforation. Additional or unforeseen side effects from these or any of our other product candidates could arise either during clinical development or, if approved, after the approved product has been marketed. Our product candidates are being developed for the systemic treatment of multi-drug resistant and extremely-drug resistant infections caused by Gram-positive and Gram-negative bacteria and are still in the early stages of clinical development. The range and potential severity of possible side effects from systemic therapies is significant. The results of future clinical trials may show that our product candidates cause undesirable or unacceptable side effects, which could interrupt, delay or halt clinical trials, and result in delay of, or failure to obtain, marketing approval from the FDA and other regulatory authorities, or result in marketing approval from the FDA and other regulatory authorities with restrictive label warnings.

If any of our product candidates receives marketing approval and we or others later identify undesirable or unacceptable side effects caused by such products:

- regulatory authorities may require the addition of labeling statements, specific warnings, a contraindication or field alerts to physicians and pharmacies;
- we may be required to change the way the product is administered, conduct additional clinical trials or change the labeling of the product;
- we may be subject to limitations on how we may promote the product;

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- sales of the product may decrease significantly;
- regulatory authorities may require us to take our approved product off the market;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us, Sanofi or our potential future partners from achieving or maintaining market acceptance of the affected product or could substantially increase commercialization costs and expenses, which in turn could delay or prevent us from generating significant revenues from the sale of our products.

Reimbursement decisions by third-party payors may have an adverse effect on pricing and market acceptance. If there is not sufficient reimbursement for our products, it is less likely that our products will be widely used.

Market acceptance and sales of delafloxacin, radezolid, or any other product candidates that we develop will depend on reimbursement policies and may be affected by future healthcare reform measures. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which drugs they will cover and establish payment levels. We cannot be certain that reimbursement will be available for delafloxacin, radezolid, or any other product candidates that we develop. Also, we cannot be certain that reimbursement policies will not reduce the demand for, or the price paid for, our products. If reimbursement is not available or is available on a limited basis, we may not be able to successfully commercialize delafloxacin, radezolid, or any other product candidates that we develop.

In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, also called the Medicare Modernization Act, or MMA, changed the way Medicare covers and pays for pharmaceutical products. The legislation established Medicare Part D, which expanded Medicare coverage for outpatient prescription drug purchases by the elderly but provided authority for limiting the number of drugs that will be covered in any therapeutic class. The MMA also introduced a new reimbursement methodology based on average sales prices for physician-administered drugs.

The United States and several foreign jurisdictions are considering, or have already enacted, a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. 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/or 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 delafloxacin and radezolid and any other 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 Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively, ACA, became law in the U.S. The goal of ACA is to reduce the cost of health care and substantially change the way health care is financed by both governmental and private insurers. While we cannot predict what impact on federal reimbursement policies this legislation will have in general or on our business specifically, the ACA may result in downward pressure on pharmaceutical reimbursement,

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which could negatively affect market acceptance of delafloxacin, radezolid or any future product candidates. Members of the U.S. Congress and some state legislatures are seeking to overturn at least portions of the legislation and we expect they will continue to review and assess this legislation and possibly alternative health care reform proposals. We cannot predict whether new proposals will be made or adopted, when they may be adopted or what impact they may have on us if they are adopted.

Proposed legislation before Congress specific to antibiotics may have a material impact on antibiotic drug development.

In the past few months, identical bills intended to encourage development of antibiotics were introduced in the U.S. House and Senate. The Generating Antibiotic Incentives Now Act, or GAIN, would provide incentives for the development of infectious disease products to address the growing epidemic of antibiotic resistant infections. The bill recommends that qualified infectious disease products receive both Fast Track designation and Priority Review from the FDA and an additional five year period of market protection at the end of existing exclusivity periods. While GAIN may have a positive impact on our business if enacted, there is no guarantee that it will be enacted in its current form or that we would benefit from it for delafloxacin, radezolid, or any of our other product candidates. Furthermore, GAIN may have a disproportionately favorable effect for our competitors' products compared to delafloxacin, radezolid, and our other product candidates which will make it harder for our product candidates to compete in the antibiotic market.

If we do not obtain protection under the Hatch-Waxman Amendments and similar foreign legislation by extending the patent terms and obtaining data exclusivity for our product candidates, our business may be materially harmed.

Depending upon the timing, duration and specifics of FDA marketing approval of delafloxacin, radezolid, and our RX-04 and other product candidates, one or more of our U.S. patents may be eligible for limited patent term restoration under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, we may not be granted an extension because of, for example, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or restoration or the term of any such extension is less than we request, the period during which we will have the right to exclusively market our product will be shortened and our competitors may obtain approval of competing products following our patent expiration, and our revenue could be reduced, possibly materially. In the event that we are unable to obtain any patent term extensions, the issued composition of matter patents for delafloxacin, delafloxacin meglumine and radezolid are expected to expire in 2016, 2027 and 2024, respectively, and, if issued, the pending composition of matter patents for our RX-04 compounds would be expected to expire in 2030, in each case assuming the appropriate maintenance, renewal, annuity or other governmental fees are paid.

If we market products in a manner that violates healthcare fraud and abuse laws, or if we violate government price reporting laws, we may be subject to civil or criminal penalties.

In addition to FDA restrictions on marketing of pharmaceutical products, several other types of state and federal healthcare laws commonly referred to as "fraud and abuse" laws have been applied in recent years to restrict certain marketing practices in the pharmaceutical industry.

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These laws include false claims and anti-kickback statutes. At such time as we market our products and our products are paid for by governmental programs, it is possible that some of our business activities could be subject to challenge under one or more of these laws.

Federal false claims laws prohibit any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government or knowingly making, or causing to be made, a false statement to get a false claim paid. The federal healthcare program anti-kickback statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce, or in return for, purchasing, leasing, ordering or arranging for the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid or other federally financed healthcare programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other. Although there are several statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchasing or recommending may be subject to scrutiny if they do not qualify for an exemption or safe harbor. Most states also have statutes or regulations similar to the federal anti-kickback law and federal false claims laws, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor. Administrative, civil and criminal sanctions may be imposed under these federal and state laws.

Over the past few years, a number of pharmaceutical and other healthcare companies have been prosecuted under these laws for a variety of promotional and marketing activities, such as: providing free trips, free goods, sham consulting fees and grants and other monetary benefits to prescribers; reporting to pricing services inflated average wholesale prices that were then used by federal programs to set reimbursement rates; engaging in off-label promotion; and submitting inflated best price information to the Medicaid Rebate Program to reduce liability for Medicaid rebates.

If the FDA does not approve the manufacturing facilities of any future manufacturing partners for commercial production, we may not be able to commercialize any of our product candidates.

We do not intend to manufacture the pharmaceutical products that we plan to sell. We may not be able to identify and reach arrangement with a contract manufacturer to manufacture delafloxacin, radezolid or any of our other product candidates. Additionally, the facilities used by any contract manufacturer to manufacture delafloxacin, radezolid or any of our other product candidates must be the subject of a satisfactory inspection before the FDA approves an NDA for the product candidate manufactured at that facility. We are completely dependent on these third-party manufacturing partners for compliance with the FDA's requirements for manufacture of our finished products. If our manufacturers cannot successfully manufacture material that conforms to our specifications and the FDA's current good manufacturing practice requirements, our product candidates will not be approved or, if already approved, may be subject to recalls. Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured the product candidates, including:

- the possibility that we are unable to enter into a manufacturing agreement with a third party to manufacture our product candidates;
- the possible breach of the manufacturing agreements by the third parties because of factors beyond our control; and
- the possibility of termination or nonrenewal of the agreements by the third parties before we are able to arrange for a qualified replacement third-party manufacturer.

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Any of these factors could cause the delay of approval or commercialization of our products, cause us to incur higher costs or prevent us from commercializing our product candidates successfully. Furthermore, if any of our product candidates are approved and contract manufacturers fail to deliver the required commercial quantities of finished product on a timely basis and at commercially reasonable prices and we are unable to find one or more replacement manufacturers capable of production at a substantially equivalent cost, in substantially equivalent volumes and quality and on a timely basis, we would likely be unable to meet demand for our products and could lose potential revenue. It may take several years to establish an alternative source of supply for our product candidates and to have any such new source approved by the FDA.

Even if our product candidates receive regulatory approval, we may still face future development and regulatory difficulties.

Our product candidates will also be subject to ongoing regulatory requirements for the labeling, packaging, storage, advertising, promotion, record-keeping and submission of safety and other post-market information on the drug. In addition, approved products, manufacturers and manufacturers' facilities are required to comply with extensive FDA requirements, including ensuring that quality control and manufacturing procedures conform to current Good Manufacturing Practices, or cGMPs. As such, we and our contract manufacturers are 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 certain requirements concerning advertising and promotion for our products. Promotional communications with respect to prescription drugs are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved label. Accordingly, we may not promote our products for indications or uses for which they are not approved.

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, including requiring withdrawal of the product from the market. If our product candidates fail to comply with applicable regulatory requirements, a regulatory agency may:

- issue warning letters;
- mandate modifications to promotional materials or require us to provide corrective information to healthcare practitioners;
- require us or our partners to enter into a consent decree, which can include imposition of various fines, reimbursements for inspection costs, required due dates for specific actions and penalties for noncompliance;
- impose other civil or criminal penalties;
- suspend regulatory approval;
- refuse to approve pending applications or supplements to approved applications filed by us, Sanofi or our potential future partners;
- impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products.

We will need to obtain FDA approval of any proposed product names, and any failure or delay associated with such approval may adversely affect our business.

Any name we intend to use for our product candidates will require approval from the FDA regardless of whether we have secured a formal trademark registration from the United States

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Patent and Trademark Office, or USPTO. The FDA typically conducts a review of proposed product names, including an evaluation of the potential for confusion with other product names. The FDA may also object to a product name if it believes the name inappropriately implies medical claims. If the FDA objects to any of our proposed product names, we may be required to adopt an alternative name for our product candidates. If we adopt an alternative name, we would lose the benefit of our existing trademark applications for such product candidate and may be required to expend significant additional resources in an effort to identify a suitable product name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. We may be unable to build a successful brand identity for a new trademark in a timely manner or at all, which would limit our ability to commercialize our product candidates.

Risks Relating to Our Business

Even if approved, if any of our product candidates do not achieve broad market acceptance among physicians, patients and the medical community, our revenues generated from their sales will be limited.

The commercial success of delafloxacin, radezolid, our RX-04 product candidates and our other product candidates will depend upon their acceptance among physicians, patients and the medical community. The degree of market acceptance of our product candidates will depend on a number of factors, including:

- limitations or warnings contained in a product candidate's FDA-approved labeling;
- changes in the standard of care for the targeted indications for any of our product candidates;
- limitations in the approved clinical indications for our product candidates;
- demonstrated clinical safety and efficacy compared to other products;
- lack of significant adverse side effects;
- sales, marketing and distribution support;
- availability of reimbursement from managed care plans and other third-party payors;
- timing of market introduction and perceived effectiveness of competitive products;
- the degree of cost-effectiveness;
- availability of alternative therapies at similar or lower cost, including generics and over-the-counter products;
- the extent to which the product candidate is approved for inclusion on formularies of hospitals and managed care organizations;
- 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;
- adverse publicity about our product candidates or favorable publicity about competitive products;
- convenience and ease of administration of our products; and
- potential product liability claims.

If our product candidates are approved, but do not achieve an adequate level of acceptance by physicians, patients and the medical community, sufficient revenue may not be generated from these products, and we may not become or remain profitable. In addition, efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may never be successful.

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Bacteria might develop resistance to any of our product candidates, which would decrease the efficacy and commercial viability of those product candidates.

Drug resistance is primarily caused by the genetic mutation of bacteria resulting from sub-optimal exposure to antibiotics where the drug does not kill all of the bacteria. While antibiotics have been developed to treat many of the most common infections, the extent and duration of their use worldwide has resulted in new mutated strains of bacteria resistant to current treatments. We are developing product candidates to treat patients infected with drug-resistant bacteria. If physicians, rightly or wrongly, associate the resistance issues of other products of the same class as our product candidates, physicians might not prescribe our product candidates for treating a broad range of infections. If our product candidates are improperly dosed, bacteria might develop resistance to those product candidates causing the efficacy of these product candidates to decline, which would negatively affect our potential to generate revenues from those product candidates.

We currently have no sales and marketing infrastructure and have no experience in marketing drug products, and if we are unable to establish an effective sales force and marketing infrastructure, or enter into acceptable third-party sales and marketing or licensing arrangements, we may not be able to commercialize our product candidates successfully.

We plan to develop a sales and marketing infrastructure to market and sell our products in the United States. We currently do not have any sales, distribution and marketing capabilities, the development of which will require substantial resources and will be time consuming. These costs may be incurred in advance of any approval of our product candidates. 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 our sales force and marketing capability, our operating results may be adversely affected. In addition, we plan to enter into sales and marketing or licensing arrangements with third parties for international sales of any approved products. If we are unable to enter into any such arrangements on acceptable terms, or at all, we may be unable to market and sell our products in these markets.

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

The biotechnology and pharmaceutical industries are intensely competitive and subject to rapid and significant technological change. We have competitors both in the United States and internationally, including major multinational pharmaceutical companies, established biotechnology companies, specialty pharmaceutical and generic drug companies and universities and other research institutions. Many of our competitors have greater financial and other resources, such as larger research and development staff and more experienced marketing and manufacturing organizations. As a result, these companies may obtain regulatory approval more rapidly than we are able to and may be more effective in selling and marketing their products as well. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large, established companies. Our competitors may succeed in developing, acquiring or licensing on an exclusive basis, technologies and drug products that are more effective or less costly than delafloxacin, radezolid, or any other product candidates that we are currently developing or that we may develop, which could render our products obsolete and noncompetitive.

The competition in the market for antibiotics is intense. If approved, our product candidates will face competition from commercially available antibiotics such as vancomycin, marketed as

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a generic by Abbott Laboratories and others; daptomycin, marketed by Cubist Pharmaceuticals, Inc. as Cubicin; linezolid, marketed by Pfizer Inc. as Zyvox; ceftaroline, marketed by Forest Laboratories, Inc. as Teflaro; tigecycline, marketed as Tygacil by Pfizer; and telavancin, marketed by Theravance, Inc. and Astellas Pharma, Inc. as Vibativ. Vancomycin has been a widely used and well known antibiotic for over 40 years and is sold in a relatively inexpensive generic IV form. Vancomycin, daptomycin, ceftaroline, tigecycline, linezolid and telavancin are all approved treatments for serious gram-positive infections such as ABSSSI. Additionally, daptomycin is an approved treatment for bacteremia, tigecycline is an approved treatment for cIAI and CABP, linezolid is an approved treatment for pneumonia and vancomycin is an approved treatment for both bacteremia and pneumonia. If we are unable to obtain regulatory approval of our product candidates for some or all of the indications for which our competitors are approved, we may not be able to compete effectively with such antibiotics.

In addition, if approved, our product candidates may face additional competition from antibiotics currently in clinical development. Other antibiotics currently in development include ceftobiprole, under development by Basilea Pharmaceutica AG and approved in Canada and Switzerland, CEM-102, under development by Cempra, Inc., dalbavancin, under development by Durata Therapeutics, Inc., tedizolid, under development by Trius Therapeutics, Inc., NXL-103, under development by AstraZeneca PLC, oritavancin, under development by The Medicines Company, and PTK 0796, previously under development by Paratek Pharmaceuticals, Inc. and Novartis AG, which, if approved, would compete in the antibiotic market. In addition, our product candidates may each face competition from product candidates currently in clinical development and product candidates that could receive regulatory approval before our product candidates in countries outside the United States and the European Union. If we are unable to demonstrate the advantages of our product candidates over competing products and product candidates, we will not be able to successfully commercialize our product candidates and our results of operations will suffer.

Established pharmaceutical companies may also invest heavily to accelerate discovery and development of novel compounds or to in-license novel compounds that could make delafloxacin, radezolid or any other product candidates that we develop obsolete. As a result of all of these factors, our competitors may succeed in obtaining patent protection and/or FDA approval or discovering, developing and commercializing antibiotics before we do.

If approved, delafloxacin and radezolid will face competition from less expensive generic versions of branded antibiotics of competitors, and if we are unable to differentiate the benefits of delafloxacin or radezolid over these less expensive alternatives, we may never generate meaningful product revenues.

Generic antibiotic therapies are typically sold at lower prices than branded antibiotics and are generally preferred by insurers and other third party payors. We anticipate that, if approved, delafloxacin and radezolid will face increasing competition in the form of generic versions of branded products of competitors that have lost or will lose their patent exclusivity. For example, both delafloxacin and radezolid, if approved, will initially face competition from the inexpensive generic forms of vancomycin that are currently available and, in the future, may face additional competition from generic forms of other antibiotics and from generic versions of our product after any applicable marketing exclusivity periods expire. If we are unable to demonstrate to physicians and payors that the key differentiating features of delafloxacin and radezolid translate to overall clinical benefit or lower cost of care, we may not be able to compete with generic antibiotics.

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We may not be successful in establishing and maintaining development and commercialization collaborations, which could adversely affect our ability to develop certain of our product candidates and our financial condition and operating results.

Developing pharmaceutical products, conducting clinical trials, obtaining regulatory approval, establishing manufacturing capabilities and marketing approved products is expensive. For example, we have entered into a research collaboration with Sanofi with respect to product candidates developed in our RX-04 program. We plan to establish additional collaborations for development and commercialization of product candidates and research programs, including to fund the continued development of delafloxacin and radezolid. Additionally, if delafloxacin, radezolid or any of our other product candidates receives marketing approval, we intend to enter into sales and marketing arrangements with third parties for international sales, and to develop our own sales force in the United States. If we are unable to maintain our existing arrangements or enter into any new such arrangements on acceptable terms, if at all, we may be unable to effectively market and sell our products in our target markets. We expect to face competition in seeking appropriate collaborators. Moreover, collaboration arrangements are complex and time consuming to negotiate, document and implement and they may require substantial resources to maintain. We may not be successful in our efforts to establish and implement collaborations or other alternative arrangements for the development of our product candidates. When we partner with a third party for development and commercialization of a product candidate, we can expect to relinquish some or all of the control over the future success of that product candidate to the third party. Our collaboration partner may not devote sufficient resources to the commercialization of our product candidates or may otherwise fail in their commercialization. The terms of any collaboration or other arrangement that we establish may not be favorable to us. In addition, any collaboration that we enter into, including our collaboration with Sanofi, may be unsuccessful in the development and commercialization of our product candidates. In some cases, we may be responsible for continuing preclinical and initial clinical development of a partnered product candidate or research program, and the payment we receive from our collaboration partner may be insufficient to cover the cost of this development. If we are unable to reach agreements with suitable collaborators for our product candidates, we would face increased costs, we may be forced to limit the number of our product candidates we can commercially develop or the territories in which we commercialize them and we might fail to commercialize products or programs for which a suitable collaborator cannot be found. If we fail to achieve successful collaborations, our operating results and financial condition will be materially and adversely affected.

If we fail to develop delafloxacin and radezolid for additional indications, our commercial opportunity will be limited.

To date, we have focused primarily on the development of delafloxacin for the treatment of ABSSSI. A key element of our strategy is to pursue clinical development of delafloxacin for other indications, including CABP and cIAI. Although we believe there is substantial commercial opportunity for the treatment of ABSSSI alone, our ability to generate and grow revenues will be highly dependent on our ability to successfully develop and commercialize delafloxacin for the treatment of these additional indications. The development of delafloxacin for these additional indications will require substantial additional funding beyond that needed to commercialize delafloxacin for the treatment of ABSSSI and is prone to the risks of failure inherent in drug development and we cannot provide you any assurance that we will able to successfully advance any of these programs through the development process. Even if we receive FDA approval to market delafloxacin for the treatment of any of these additional indications, we cannot assure you that any such additional indications will be successfully commercialized, widely accepted in the marketplace or more effective than other commercially

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available alternatives. If we are unable to successfully develop and commercialize delafloxacin for these additional indications, our commercial opportunity will be limited and our business prospects will suffer.

We currently plan to develop radezolid initially for the treatment of ABSSSI. A key element of our strategy is to pursue clinical development of radezolid for other indications, including severe CABP, and long-term treatment of serious infections, such as osteomyelitis and prosthetic and joint infections. Although we believe there is substantial commercial opportunity for the treatment of ABSSSI alone, our ability to generate and grow revenues will be highly dependent on our ability to successfully develop and commercialize radezolid for the treatment of these additional indications. The development of radezolid for these additional indications is prone to the risks of failure inherent in drug development and we cannot provide you any assurance that we will be able to successfully advance any of these programs through the development process. Even if we receive FDA approval to market radezolid for the treatment of any of these additional indications, we cannot assure you that any such additional indications will be successfully commercialized, widely accepted in the marketplace or more effective than other commercially available alternatives. If we are unable to successfully develop and commercialize radezolid for these additional indications, our commercial opportunity will be limited and our business prospects will suffer.

We depend on third-party contractors for a substantial portion of our operations and may not be able to control their work as effectively as if we performed these functions ourselves.

We outsource substantial portions of our operations to third-party service providers, including the conduct of preclinical studies and clinical trials, chemical synthesis, biological screening and manufacturing. Our agreements with third-party service providers and clinical research organizations are on a study-by-study basis and are typically short-term. In all cases, we may terminate the agreements with notice and are responsible for the supplier's previously incurred costs. In addition, any contract research organization that we retain will be subject to the FDA's regulatory requirements and similar foreign standards and we do not have control over compliance with these regulations by these providers. Consequently, if these providers do not adhere to the governing practices and standards, the development and commercialization of our product candidates could be delayed, which could severely harm our business and financial condition.

Because we have relied on third parties, our internal capacity to perform these functions is limited. Outsourcing these functions involves the risk that third parties may not perform to our standards, may not produce results in a timely manner or may fail to perform at all. In addition, the use of third-party service providers requires us to disclose our proprietary information to these parties, which could increase the risk that this information will be misappropriated. There is a limited number of third-party service providers that specialize or have the expertise required to achieve our business objectives. Identifying, qualifying and managing performance of third-party service providers can be difficult, time consuming and cause delays in our development programs. We currently have a small number of employees, which limits the internal resources we have available to identify and monitor our third-party providers. To the extent we are unable to identify, retain and successfully manage the performance of third-party service providers in the future, our business may be adversely affected.

We will need to expand our operations and increase the size of our company, and we may experience difficulties in managing growth.

As we increase the number of ongoing product development programs and advance our product candidates through preclinical studies and clinical trials, we will need to increase our product development, scientific and administrative headcount to manage these programs. In addition, to meet our obligations as a public company, we will need to increase our general and

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administrative headcount. Our management, personnel and systems currently in place may not be adequate to support this future growth. Our need to effectively manage our operations, growth and various projects requires that we:

- successfully attract and recruit new employees with the expertise and experience we will require;
- manage our clinical programs effectively, which we anticipate being conducted at numerous clinical sites;
- develop a marketing and sales infrastructure; and
- continue to improve our operational, financial and management controls, reporting systems and procedures.

If we are unable to successfully manage this growth, our business may be adversely affected.

We may not be able to manage our business effectively if we are unable to attract and retain key personnel.

We may not be able to attract or retain qualified management, finance, scientific and clinical personnel in the future due to the intense competition for qualified personnel among biotechnology, pharmaceutical and other businesses. If we are not able to attract and retain necessary personnel to accomplish our business objectives, we may experience constraints that will significantly impede the achievement of our development objectives, our ability to raise additional capital and our ability to implement our business strategy.

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 our executive officers and key employees identified in the “Management” section of this prospectus. 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. We intend to enter into change of control and severance agreements with each of our officers as part of our retention efforts. The terms of these agreements are described in the “Executive Compensation—Potential Payments upon Termination or Change in Control” section of this prospectus. However, any of our executive officers or key employees may terminate their employment at any time. 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. Our failure to retain key personnel could materially harm our business.

Failure to build our finance infrastructure and improve our accounting systems and controls could impair our ability to comply with the financial reporting and internal controls requirements for publicly traded companies.

As a public company, we will operate in an increasingly demanding regulatory environment, which requires us to comply with the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, and the related rules and regulations of the Securities and Exchange Commission, expanded disclosure requirements, accelerated reporting requirements and more complex accounting rules. Company responsibilities required by the Sarbanes-Oxley Act include

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establishing corporate oversight and adequate internal control over financial reporting and disclosure controls and procedures. Effective internal controls are necessary for us to produce reliable financial reports and are important to help prevent financial fraud.

We have begun implementing our system of internal controls over financial reporting and preparing the documentation necessary to perform the evaluation needed to comply with Section 404 of the Sarbanes-Oxley Act. Although we will need to hire additional finance personnel and build our financial infrastructure as we transition to operating as a public company, including complying with the requirements of Section 404 of the Sarbanes-Oxley Act, we have recently taken actions to improve our financial infrastructure, including the hiring of a corporate controller and an accounting staff person. Following this offering as we begin operating as a public company, we will continue improving our financial infrastructure with the hiring of additional financial and accounting staff, the enhancement of internal controls, and additional training for our financial and accounting staff.

We will be required to comply with Section 404 of the Sarbanes-Oxley Act in connection with our Annual Report on Form 10-K for the year ending December 31, 2013. We may be unable to do so on a timely basis. Until we are able to expand our finance and administrative capabilities and establish necessary financial reporting infrastructure, we may not be able to prepare and disclose, in a timely manner, our financial statements and other required disclosures or comply with the Sarbanes-Oxley Act or existing or new reporting requirements. If we cannot provide reliable financial reports or prevent fraud, our business and results of operations could be harmed and investors could lose confidence in our reported financial information.

Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with FDA regulations, provide accurate information to the FDA, comply with federal and state health care fraud and abuse laws and regulations, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the health care industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. We intend to adopt a code of conduct prior to the completion of this offering, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

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We face potential product liability exposure, and if successful claims are brought against us, we may incur substantial liability for a product candidate and may have to limit its commercialization.

The use of our product candidates in clinical trials and the sale of any products for which we may obtain marketing approval expose us to the risk of product liability claims. Product liability claims may be brought against us or our partners by participants enrolled in our clinical trials, patients, health care providers or others using, administering or selling our products. If we cannot successfully defend ourselves against any such claims, we would incur substantial liabilities. Regardless of merit or eventual outcome, product liability claims may result in:

- withdrawal of clinical trial participants;
- termination of clinical trial sites or entire trial programs;
- costs of related litigation;
- substantial monetary awards to patients or other claimants;
- decreased demand for our product candidates and loss of revenues;
- impairment of our business reputation;
- diversion of management and scientific resources from our business operations; and
- the inability to commercialize our product candidates.

We have obtained limited product liability insurance coverage for our clinical trials domestically and in selected foreign countries where we are conducting clinical trials. Our product liability insurance coverage is currently limited to $5 million per occurrence with an annual aggregate limit of $5 million. As such, our insurance coverage may not reimburse us or may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive, and, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to product liability. We intend to expand our insurance coverage for products to include the sale of commercial products if we obtain marketing approval for our product candidates in development, but we may be unable to obtain commercially reasonable product liability insurance for any products approved for marketing. Large judgments have been awarded in class action lawsuits based on drugs that had unanticipated side effects. A successful product liability claim or series of claims brought against us, particularly if judgments exceed our insurance coverage, could decrease our cash resources and adversely affect our business.

Our insurance policies are expensive and protect us only from some business risks, which will leave us exposed to significant uninsured liabilities.

We do not carry insurance for all categories of risk that our business may encounter. For example, we do not carry earthquake insurance. In the event of a major earthquake in our region, our business could suffer significant and uninsured damage and loss. Some of the policies we currently maintain include general liability, employment practices liability, property, auto, workers' compensation, products liability and directors' and officers' insurance. We do not know, however, if we will be able to maintain existing insurance with adequate levels of coverage. Any significant uninsured liability may require us to pay substantial amounts, which would adversely affect our cash position and results of operations.

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Our operations involve hazardous materials, which could subject us to significant liabilities.

Our research and development processes involve the controlled use of hazardous materials, including chemicals. Our operations produce hazardous waste products. We cannot eliminate the risk of accidental contamination or discharge or injury from these materials. Federal, state and local laws and regulations govern the use, manufacture, storage, handling and disposal of these materials. We could be subject to civil damages in the event of exposure of individuals to hazardous materials. In addition, claimants may sue us for injury or contamination that results from our use of these materials and our liability may exceed our total assets. We have general liability insurance of up to $2 million per occurrence with an annual aggregate limit of $2 million, which excludes pollution liability. We also have umbrella liability insurance of up to $5 million per occurrence with an annual aggregate limit of $5 million, which excludes product liability. This coverage may not be adequate to cover all claims related to our biological or hazardous materials. Furthermore, if we were to be held liable for a claim involving our biological or hazardous materials, this liability could exceed our insurance coverage, if any, and our other financial resources. Compliance with environmental and other laws and regulations may be expensive and current or future regulations may impair our research, development or production efforts.

Risks Relating to Our Intellectual Property

Our ability to pursue the development and commercialization of delafloxacin depends upon the continuation of our license from Wakunaga.

Our license agreement with Wakunaga provides us with a worldwide exclusive license to develop and sell delafloxacin. In particular, we obtained an exclusive license to certain patents, patent applications and proprietary information covering the composition of matter to delafloxacin, and rights to other patents and applications, which license requires us to make certain payments to Wakunaga. If we are unable to make the required milestone and royalty payments under the license agreement, or if we do not use commercially reasonable efforts to achieve certain development and commercialization milestones for delafloxacin within the timeframes required by the license agreement, our rights to develop and commercialize delafloxacin could be terminated and would revert to Wakunaga. In addition, either we or Wakunaga may terminate the license agreement upon a material breach of the license agreement not cured within 90 days from notice of breach. If our license agreement with Wakunaga were terminated, we would lose our rights to develop and commercialize delafloxacin, which would materially and adversely affect our business, results of operations and future prospects.

It is difficult and costly to protect our proprietary rights, and we may not be able to ensure their protection. If our patent position does not adequately protect our product candidates, others could compete against us more directly, which would harm our business, possibly materially.

Our commercial success will depend in part on obtaining and maintaining patent protection and trade secret protection of our ribosome-based discovery platform and of our current and future product candidates and the methods used to manufacture them, as well as successfully defending these patents against third-party challenges. Our ability to stop third parties from making, using, selling, offering to sell or importing our products and ribosome-based discovery platform is dependent upon the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities.

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The patent positions of pharmaceutical companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy regarding the breadth of claims allowed in pharmaceutical patents has emerged to date in the United States or in many foreign jurisdictions. Changes in either the patent laws or interpretations of patent laws in the United States and foreign jurisdictions may diminish the value of our intellectual property. Accordingly, we cannot predict the breadth of claims that may be enforced in the patents that may be issued from the applications we currently or may in the future own or license from third parties. Further, if any patents we obtain or license are deemed invalid and unenforceable, our ability to commercialize or license our technology could be adversely affected.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- others may be able to develop a platform similar to, or better than, ours in a way that is not covered by the claims of our patents;
- others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of our patents;
- we might not have been the first to make the inventions covered by our pending patent applications;
- we might not have been the first to file patent applications for these inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies;
- any patents that we obtain may not provide us with any competitive advantages;
- we may not develop additional proprietary technologies that are patentable; or
- the patents of others may have an adverse effect on our business.

As of March 31, 2012, we are the owner of record of over 15 issued or granted U.S. and foreign patents with claims directed to pharmaceutical compounds, pharmaceutical compositions, methods of making these compounds, and methods of using these compounds in various indications, and also to ribosome-based technology platforms and drug discovery methods. We are also the owner of record of over 100 pending U.S. and foreign patent applications in these areas.

As of March 31, 2012, we are the licensee of over 40 issued or granted U.S. and foreign patents and over 20 pending U.S. and foreign patent applications, with claims directed to pharmaceutical compounds, pharmaceutical compositions, methods of making these compounds, methods of using these compounds in various indications, and also to ribosome-based technology platforms and drug discovery methods.

Due to the patent laws of a country, or the decisions of a patent examiner in a country, or our own filing strategies, we may not obtain patent coverage for all of our product candidates or methods involving these candidates or for our ribosome-based technology platform in the parent patent application. We plan to pursue divisional patent applications or continuation patent applications in the United States and many other countries to obtain claim coverage for inventions which were disclosed but not claimed in the parent patent application.

We may also rely on trade secrets to protect our technology, especially where we do not believe patent protection is appropriate or feasible. However, trade secrets are difficult to

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protect. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, outside scientific collaborators and other advisors may unintentionally or willfully disclose our information to competitors. Enforcing a claim that a third party illegally obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States are sometimes less willing to protect trade secrets. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

We may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights.

If we choose to go to court to stop another party from using the inventions claimed in any patents we obtain, that individual or company has the right to ask the court to rule that such patents are invalid or should not be enforced against that third party. These lawsuits are expensive and would consume time and resources and divert the attention of managerial and scientific personnel even if we were successful in stopping the infringement of such patents. In addition, there is a risk that the court will decide that such patents are not valid and that we do not have the right to stop the other party from using the inventions. There is also the risk that, even if the validity of such patents is upheld, the court will refuse to stop the other party on the ground that such other party's activities do not infringe our rights to such patents. In addition, the U.S. Supreme Court has recently modified some tests used by the USPTO in granting patents over the past 20 years, which may decrease the likelihood that we will be able to obtain patents and increase the likelihood of challenge of any patents we obtain or license.

We may infringe the intellectual property rights of others, which may prevent or delay our product development efforts and stop us from commercializing or increase the costs of commercializing our products.

Our success will depend in part on our ability to operate without infringing the proprietary rights of third parties. Patents of which we are not aware, and that our products infringe, may be issued. Additionally, patents that we believe we do not infringe, but that we may ultimately be found to infringe, could be issued. Furthermore, a third party may claim that we or our manufacturing or commercialization partners are using inventions covered by the third party's patent rights and may go to court to stop us from engaging in our normal operations and activities, including making or selling our product candidates. These lawsuits are costly and could affect our results of operations and divert the attention of managerial and scientific personnel. There is a risk that a court would decide that we or our commercialization partners are infringing the third party's patents and would order us or our partners to stop the activities covered by the patents. In that event, we or our commercialization partners may not have a viable way around the patent and may need to halt commercialization of the relevant product with it. In addition, there is a risk that a court will order us or our partners to pay the other party damages for having violated the other party's patents. In the future, we may agree to indemnify our commercial partners against certain intellectual property infringement claims brought by third parties. The pharmaceutical and biotechnology industries have produced a proliferation of patents, and it is not always 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 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

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proceedings, we may incur substantial costs and divert management's time and attention in pursuing these proceedings, which could have a material adverse effect on us. If we are unable to avoid infringing the patent rights of others, we may be required to seek a license, defend an infringement action or challenge the validity of the patents in court. Patent litigation is costly and time consuming. We may not have sufficient resources to bring these actions to a successful conclusion. In addition, if we do not obtain a license, develop or obtain non-infringing technology, fail to defend an infringement action successfully or have infringed patents declared invalid, we may incur substantial monetary damages, encounter significant delays in bringing our product candidates to market and be precluded from manufacturing or selling our product candidates.

Because some patent applications in the United States may be maintained in secrecy until the patents are issued, because patent applications in the United States and many foreign jurisdictions are typically not published until eighteen months after the priority date, and because publications in the scientific literature often lag behind actual discoveries, we cannot be certain that others have not filed patent applications for technology covered by our pending applications, or that we were the first to invent the technology. Our competitors may have filed, and may in the future file, patent applications covering technology similar to ours. Any such patent application may have priority over our patent applications, which could further require us to obtain rights to issued patents covering such technologies. If another party has filed a U.S. patent application on inventions similar to ours, we may have to participate in an interference proceeding declared by the USPTO to determine priority of invention in the United States. The costs of these proceedings could be substantial, and it is possible that such efforts would be unsuccessful if, unbeknownst to us, the other party had independently arrived at the same or similar invention prior to our own invention, resulting in a loss of our U.S. patent position with respect to such inventions.

Patents covering the composition of matter of delafloxacin expire in 2016, excluding any additional term for patent term adjustments or patent term extensions. We expect that the other patents and patent applications in the delafloxacin portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, would expire between 2025 and 2029. Patents covering the composition of matter of radezolid expire in 2024, excluding any additional term for patent term adjustments or patent term extensions. We expect the other patents and patent applications in the radezolid portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire between 2024 and 2031. Our patent applications and patents include or support claims on other aspects of delafloxacin and radezolid such as pharmaceutical formulations containing delafloxacin and radezolid, methods of using delafloxacin and radezolid to treat disease and methods of manufacturing delafloxacin and radezolid. Without patent protection on the composition of matter of delafloxacin or radezolid, our ability to assert our patents to stop others from using or selling delafloxacin or radezolid in a non-pharmaceutically acceptable formulation may be limited.

Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations.

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

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the USPTO and various foreign governmental patent agencies in several stages over the lifetime of the patents and/or applications. We have systems in place to remind us to pay these fees, and we employ an outside firm, CPA Global Limited, and rely on our outside counsel and Yale University, to pay these fees due to foreign patent agencies. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to enter the market and this circumstance would have a material adverse effect on our business.

We have not yet registered our trademarks in all of our potential markets, and failure to secure those registrations could adversely affect our business.

We have filed trademark applications with the USPTO for our marks, “Rib-X” and “Rib-X Pharmaceuticals Antibiotics in Three Dimensions” for use in connection with our services and anticipate also filing with respect to these marks at the appropriate time in conjunction with our goods. We also anticipate filing foreign trademark applications for the same marks for goods and services outside the United States. The “Rib-X” mark has been approved for publication by the USPTO, but is subject to a 30-day public opposition period, which can be extended by an additional 90 days upon the request of an interested party. It is possible that the marks could be opposed or cancelled after registration. The registrations will be subject to use and maintenance requirements. We have not yet registered all of our trademarks in all of our potential markets, and it is also possible that there are names or symbols other than “Rib-X” and “Rib-X Pharmaceuticals Antibiotics in Three Dimensions” that may be protectable marks for which we have not sought registration, and failure to secure those registrations could adversely affect our business. We cannot assure you that opposition or cancellation proceedings will not be filed against our trademarks or that our trademarks would survive such proceedings.

We have not yet registered trademarks for any of our product candidates in any jurisdiction. When we file trademark applications for our product candidates in the U.S., our trademark applications in the U.S. and any other jurisdictions where we may file may not be allowed for registration, and registered trademarks may not be obtained, maintained or enforced. During trademark registration proceedings, we may receive rejections. Although we are given an opportunity to respond to those rejections, we may be unable to overcome such rejections. In addition, in the USPTO 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.

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We may be subject to claims that our employees have wrongfully used or disclosed alleged trade secrets of their former employers. If we are not able to adequately prevent disclosure of trade secrets and other proprietary information, the value of our technology and products could be significantly diminished.

As is common in the biotechnology and pharmaceutical industries, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. We may be subject to claims that these employees, or we, have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

We rely on trade secrets to protect our proprietary technologies, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect. We rely in part on confidentiality agreements with our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to protect our trade secrets and other proprietary information. These agreements may not effectively prevent disclosure of confidential information and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. In addition, others may independently discover our trade secrets and proprietary information. For example, the FDA, as part of its Transparency Initiative, is currently considering whether to make additional information publicly available on a routine basis, including information that we may consider to be trade secrets or other proprietary information, and it is not clear at the present time how the FDA's disclosure policies may change in the future, if at all. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

Risks Relating to Owning Our Common Stock

No public market for our common stock currently exists and an active trading market may not develop or be sustained following this offering.

Prior to this offering, there has been no public market for our common stock. An active trading market may not develop following the completion of this offering or, if developed, may not be sustained. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the fair market value of your shares. An inactive 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.

Our share price may be volatile, which could subject us to securities class action litigation and prevent you from being able to sell your shares at or above the offering price.

The initial public offering price for our shares will be determined by negotiations between us and the representative of the underwriters and may not be indicative of prices that will prevail in the trading market. The market price of shares of our common stock could be subject to wide fluctuations in response to many risk factors listed in this section, and others beyond our control, including:

- results of our clinical trials;

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- results of clinical trials of our competitors' products;
- regulatory actions with respect to our products or our competitors' products;
- actual or anticipated fluctuations in our financial condition and operating results;
- actual or anticipated changes in our growth rate relative to our competitors;
- actual or anticipated fluctuations in our competitors' operating results or changes in their growth rate;
- competition from existing products or new products that may emerge;
- announcements by us, our collaborators or our competitors of significant acquisitions, strategic partnerships, joint ventures, collaborations or capital commitments;
- issuance of new or updated research or reports by securities analysts;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- additions or departures of key management or scientific personnel;
- disputes or other developments related to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- announcement or expectation of additional financing efforts;
- sales of our common stock by us, our insiders or our other stockholders;
- market conditions for biopharmaceutical stocks in general; and
- general economic and market conditions.

Furthermore, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may negatively impact the market price of shares of our common stock. In addition, such fluctuations could subject us to securities class action litigation, which could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business. If the market price of shares of our common stock after this offering does not exceed the initial public offering price, you may not realize any return on your investment in us and may lose some or all of your investment.

After this offering, affiliates of Warburg Pincus will have the ability to control all matters submitted to our stockholders for approval.

When this offering is completed, affiliates of Warburg Pincus LLC, or Warburg Pincus, will beneficially own shares representing approximately % of our common stock, assuming that the closing of the offering made hereby occurs with an initial public offering price per share of $, the mid-point of the price range set forth on the cover page of this prospectus, and that the closing occurs on , 2012. As a result, Warburg Pincus will be able to control all matters submitted to our stockholders for approval, as well as our management and affairs. For

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example, Warburg Pincus will control the election of directors and approval of any merger, consolidation, sale of all or substantially all of our assets or other business combination or reorganization. This concentration of voting power could delay or prevent an acquisition of us on terms that other stockholders may desire. The interests of Warburg Pincus may not always coincide with your interests or the interests of other stockholders and Warburg Pincus may act in a manner that advances their best interests and not necessarily those of other stockholders, including seeking a premium value for their common stock, and might affect the prevailing market price for our common stock. Pursuant to our fourth amended and restated securityholders agreement, dated January 10, 2011, we are required to nominate and use our best efforts to elect to our board of directors up to three individuals designated by an affiliate of Warburg Pincus, as more specifically described in "Description of Capital Stock – Voting Rights." Our board of directors, which currently consists of six directors and one vacancy, has the power to set the number of directors on our board from time to time.

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

Although we currently intend to use the net proceeds from this offering in the manner described in "Use of Proceeds" elsewhere in this prospectus, we will have broad discretion in the application of the net proceeds. Our failure to apply these funds effectively could affect our ability to continue to develop and eventually to manufacture and sell our products.

Being a public company will increase our expenses and administrative burden.

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. In addition, our administrative staff will be required to perform additional tasks. For example, in anticipation of becoming a public company, we will need to adopt additional internal controls and disclosure controls and procedures, retain a transfer agent, adopt an insider trading policy and bear all of the internal and external costs of preparing and distributing periodic public reports in compliance with our obligations under the securities laws.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure, including the Sarbanes-Oxley Act and related regulations implemented by the Securities and Exchange Commission and the NASDAQ Global Market, are creating uncertainty for public companies, increasing legal and financial compliance costs and making some activities more time consuming. We are currently evaluating and monitoring these rules and proposed changes to rules, and cannot predict or estimate the amount of additional costs we may incur or the timing of such costs. These laws, regulations and standards are 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. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment will result in increased general and administrative expenses and may divert management's time and attention from product development activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, regulatory authorities may initiate legal proceedings against us and our business may be harmed. In connection with this offering, we are increasing our directors' and officers' insurance coverage which will increase our insurance cost. In the future, it may be more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher

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costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

Purchasers in this offering will experience immediate and substantial dilution in the book value of their investment.

The initial public offering price will be substantially higher than the net tangible book value per share of shares of our common stock based on the total value of our tangible assets less our total liabilities immediately following this offering. Therefore, if you purchase shares of our common stock in this offering, you will experience immediate and substantial dilution of approximately $ per share in the price you pay for shares of our common stock as compared to its net tangible book value, assuming an initial public offering price of $ per share, the mid-point of the price range set forth on the cover page of this prospectus, and that the closing occurs on , 2012. To the extent outstanding options to purchase shares of common stock are exercised, there will be further dilution. For further information on this calculation, see “Dilution” elsewhere in this prospectus.

A significant portion of our total outstanding shares of common stock is restricted from immediate resale but may be sold into the market in the near future. This could cause the market price of our common stock to drop 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 in the future. 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 outstanding shares of common stock based on the number of shares outstanding as of March 31, 2012, assuming an initial public offering price of $ per share, the mid-point of the price range set forth on the cover page of this prospectus, and that the closing occurs on , 2012. Of these shares, shares other than those shares purchased by our affiliates may be resold in the public market immediately and the remaining shares are currently restricted under securities laws or as a result of lock-up agreements but will be able to be resold after the offering as described in the “Shares Eligible for Future Sale” section of this prospectus. Moreover, after this offering, holders of an aggregate of shares of our common stock will have rights, subject to certain 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. We also intend to register all shares of common stock that we may issue under our equity compensation plans. Once we register these shares, they can be freely sold in the public market upon issuance and once vested, subject to the 180 day lock-up periods under the lock-up agreements described in the “Underwriting” section of this prospectus.

Future sales and issuances of our common stock or rights to purchase common stock pursuant to our equity incentive plans could result in additional dilution of the percentage ownership of our stockholders and could cause our share price to fall.

We expect that significant additional capital will be needed in the future to continue our planned operations. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. We may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities in more than one transaction, investors may be materially diluted by subsequent

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sales. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights superior to our existing stockholders.

As of March 31, 2012, we have options to purchase 21,869,572 shares outstanding under our 2001 Stock Option and Incentive Plan, or 2001 Stock Plan, and options to purchase 150,000 shares outstanding under our 2011 Equity Incentive Plan. In addition, pursuant to the terms of our Management Bonus Plan and our Non-Employee Director Bonus Plan, we expect to grant restricted stock units for additional shares and additional shares, respectively, of our common stock under our 2011 Equity Incentive Plan in connection with this offering. We are also authorized to grant equity awards, including stock options, to our employees, directors and consultants, covering up to shares of our common stock, pursuant to our 2011 Equity Incentive Plan. We plan to register the number of shares available for issuance under our 2001 Stock Plan and 2011 Equity Incentive Plan. Sales of such shares may result in material dilution to our existing stockholders, which could cause our share price to fall.

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 of the analysts who cover us downgrade our stock or change their opinion of our stock, our share price would likely decline. If one or more of these 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.

Some provisions of our charter documents and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders, and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our amended and restated certificate of incorporation and bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us or increase the cost of acquiring us, even if doing so would benefit our stockholders. These provisions include:

- authorizing the issuance of “blank check” convertible preferred stock, the terms of which may be established and shares of which may be issued without stockholder approval;
- limiting the removal of directors by the stockholders;
- creating a staggered board of directors;
- prohibiting stockholder action by written consent, thereby requiring all stockholder actions to be taken at a meeting of our stockholders;
- eliminating the ability of stockholders to call a special meeting of stockholders;
- permitting our board of directors to accelerate the vesting of outstanding option grants upon certain transactions that result in a change of control; and
- establishing advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted upon at stockholder meetings.

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These provisions may also frustrate or prevent any attempts by our stockholders to replace or remove our current management or members of our board of directors. In addition, we are subject to Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with an interested stockholder for a period of three years following the date on which the stockholder became an interested stockholder, unless such transactions are approved by our board of directors. This provision could have the effect of delaying or preventing a change of control, whether or not it is desired by or beneficial to our stockholders. Further, other provisions of Delaware law may also discourage, delay or prevent someone from acquiring us or merging with us.

We do not anticipate paying cash dividends, and accordingly, stockholders must rely on stock appreciation for any return on their investment.

We do not anticipate paying cash dividends in the future. As a result, only appreciation of the market price of our common stock, which may never occur, will provide a return to stockholders. Investors seeking cash dividends should not invest in our common stock.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2011, we had federal net operating loss carryforwards of $203.8 million which will begin to expire in 2021 and federal research and development tax credit carryforwards of $7.4 million which will begin to expire in 2021. Our ability to utilize our federal net operating losses and federal tax credits may be limited under Sections 382 and 383 of the Internal Revenue Code. The limitations apply if an ownership change, as defined by Section 382, occurs. Generally, an ownership change occurs when certain shareholders increase their aggregated ownership by more than 50 percentage points over their lowest ownership percentage in a testing period (typically three years). We may already be subject to Section 382 limitations due to previous ownership changes. In addition, future changes in stock ownership may also trigger an ownership change and, consequently, a Section 382 limitation. Due to the significant complexity and cost associated with a change in control study, and the expectation of continuing to incur losses whereby the net operating losses and federal tax credits are not anticipated to be used in the foreseeable future, we have not assessed whether there have been changes in control since our formation. If we have experienced changes in control at any time since our formation, utilization of its net operating losses or research and development credit carryforwards would be subject to annual limitations under Section 382. Any limitation may result in expiration of a portion of the net operating loss or research and development credit carryforwards before utilization which would reduce our gross deferred tax assets and corresponding valuation allowance. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards to offset United States federal taxable income may be subject to significant limitations, which could potentially result in increased future tax liability to us.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements. All statements other than statements of historical facts contained in this prospectus, including statements regarding our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans, objectives of management and expected market growth are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

The words “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “target,” “will,” “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:

- our ability to obtain additional financing;
- our use of the net proceeds from this offering;
- the accuracy of our estimates regarding expenses, future revenues and capital requirements;
- the success and timing of our preclinical studies and clinical trials;
- our ability to obtain and maintain regulatory approval of delafloxacin, radezolid and any other product candidates we may develop, and the labeling under any approval we may obtain;
- the ability of our proprietary drug discovery platform to develop new product candidates;
- regulatory developments in the United States and foreign countries;
- the performance of third-party manufacturers;
- our plans to develop and commercialize our product candidates;
- our ability to obtain and maintain intellectual property protection for our proprietary drug discovery platform and our product candidates;
- the successful development of our sales and marketing capabilities;
- the size and growth of the potential markets for our product candidates and our ability to serve those markets;
- the rate and degree of market acceptance of any future products;
- the success of competing drugs that are or become available; and
- the loss of key scientific or management personnel.

These forward-looking statements are only predictions and we may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, so 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 based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our

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business, financial condition and operating results. We have included important factors in the cautionary statements included in this prospectus, particularly in the “Risk Factors” section, that could cause actual future 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 we may make.

Our forward-looking statements in this prospectus represent our views only as of the date of this prospectus. We disclaim any intent or obligation to update forward-looking statements made in this prospectus to reflect changed assumptions, the occurrence of unanticipated events or changes to future operating results over time. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

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USE OF PROCEEDS

We estimate that our net proceeds from the sale of shares of common stock in this offering will be approximately $ million after deducting estimated offering expenses and underwriting discounts and commissions and assuming an initial public offering price of $ per share. If the over-allotment option is exercised in full, we estimate that our net proceeds will be approximately $ million. A $1.00 increase (decrease) in the assumed initial public offering price per share of $, the mid-point of the price range set forth on the cover page of this prospectus, would increase (decrease) the net proceeds to us from this offering by $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and estimated offering expenses payable by us.

The principal purposes of this offering are to obtain additional capital to support our operations, to create a public market for our common stock and to facilitate our future access to the public equity markets. We intend to use the net proceeds from this offering as follows:

- approximately $ million to fund our first planned Phase 3 clinical trial with the IV formulation of delafloxacin for the treatment of ABSSSI;
- approximately $ million to fund ongoing research and development activities for our RX-04, RX-05 and RX-06 programs;
- approximately $ million to pay scheduled principal and interest through April 2014 under our loan agreement with Oxford Finance LLC bearing interest at a rate of 9.1% per annum and maturing on June 1, 2015; and
- the remainder for working capital and other general corporate purposes, including for additional costs and expenses associated with being a public company.

We believe that the approximately $ million intended for research and development, along with the remainder of the net proceeds from this offering, the amounts we anticipate receiving under our collaboration with Sanofi, and our existing cash and cash equivalents, together with interest thereon, will be sufficient to fund the continued development of delafloxacin and RX-04 through the following events:

- receipt of top-line data from our initial Phase 3 clinical trial of the IV dosage form of delafloxacin for the treatment of ABSSSI; and
- identification of a clinical candidate from the RX-04 program and submission of an Investigational New Drug, or IND, application.

The amount and timing of our actual expenditures will depend upon numerous factors, including the ongoing status and results of the initial Phase 3 clinical trial for delafloxacin and progress on the RX-04 program in collaboration with Sanofi. In particular, we will need to obtain additional funding beyond the proceeds of this contemplated offering in order to continue to advance the development of radezolid.

Our expected use of net proceeds from this offering represents our current intentions based upon our present plans and business condition. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the amounts that we will actually spend on the uses set forth above. The amounts and timing of our actual use of net proceeds will vary depending on numerous factors, including our ability to obtain additional financing, the relative success and

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cost of our research, preclinical and clinical development programs, the amount and timing of revenues, if any, received from our collaboration with Sanofi and whether we are able to enter into anticipated future collaborations. As a result, management will have broad discretion in the application of the net proceeds, and investors will be relying on our judgment regarding the application of the net proceeds of this offering. In addition, we might decide to postpone or not pursue other clinical trials or any number of our research and development programs if the proceeds from this offering and the other sources of cash are less than expected.

Pending their use, we plan to invest the net proceeds from this offering in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the United States government.

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DIVIDEND POLICY

We have never paid or declared any cash dividends on our common stock, and we do not anticipate paying any cash dividends on our common stock in the foreseeable future. In addition, certain of our outstanding warrants and our secured loans contain restrictions on the payment of dividends. We intend to retain all available funds and any future earnings to fund the development and expansion of our business. Any future determination to pay dividends will be at the discretion of our board of directors and will depend upon a number of factors, including our results of operations, financial condition, future prospects, contractual restrictions, restrictions imposed by applicable law and other factors our board of directors deems relevant.

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CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of December 31, 2011:

- on an actual basis;
- on an unaudited pro forma basis to give effect to the (i) issuance of shares of common stock upon the conversion of all outstanding shares of our convertible preferred stock and accumulated dividends thereon and upon conversion of all outstanding principal and accrued interest on the convertible notes payable assuming an initial public offering price per share of $, the mid-point of the range set forth on the cover page of this prospectus, (ii) settlement of the put rights upon conversion of the convertible notes payable, (iii) conversion of the preferred stock warrants into common stock warrants, and (iv) elimination of the common stock warrant exercise price protection term, assuming in all cases that each had occurred on December 31, 2011; and
- on an unaudited pro forma as adjusted basis to give effect to the (i) issuance of shares of common stock upon the conversion of all outstanding shares of our convertible preferred stock and accumulated dividends thereon and upon conversion of all outstanding principal and accrued interest on the convertible notes payable assuming an initial public offering price per share of $, the mid-point of the range set forth on the cover page of this prospectus, (ii) settlement of the put rights upon conversion of the convertible notes payable, (iii) conversion of the preferred stock warrants into common stock warrants, (iv) elimination of the common stock warrant exercise price protection term, and (v) sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, the mid-point of the price range set forth on the cover page of this prospectus, after deducting estimated underwriters discounts and commissions and estimated offering expenses payable by us, assuming in all cases that each had occurred on December 31, 2011.

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You should read this table together with our financial statements and the related notes thereto, as well as the information under "Selected Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations." The unaudited pro forma and pro forma as adjusted information below is prepared for illustrative purposes only and our capitalization following the completion of this offering will be adjusted based on the actual initial public offering price, the closing of the offering made hereby and other terms of the offering determined at pricing.

	As of December 31, 2011 (1)		
	Actual	Pro Forma (unaudited)	Pro Forma as Adjusted (2) (unaudited)
	(in thousands, except share amounts)		
Cash and cash equivalents	$ 8,019		
Convertible notes payable	62,143		
Accrued interest on convertible notes payable	14,182		
Common stock warrants	66		
Preferred stock warrants	1		
Put rights	28,223		
Convertible preferred stock, $0.001 par value; 478,329,525 shares authorized; 199,799,907 shares issued and outstanding, actual; shares authorized, no shares issued and outstanding, pro forma and pro forma as adjusted	122,428		
Stockholders' equity (deficit):			
Common stock, $0.001 par value; 650,000,000 shares authorized, 10,252,529 shares issued and outstanding, actual; shares authorized, shares issued and outstanding, pro forma; shares authorized, shares issued and outstanding, pro forma as adjusted	10		
Additional paid-in capital	4,957		
Accumulated deficit	(244,264)		
Total stockholders' equity (deficit)	(239,297)		
Total capitalization	$ (12,254)		

(1) The above table does not reflect the impact of $15,000 we borrowed under a loan and security agreement entered into in February 2012. As a result, our cash and cash equivalents balance as of March 31, 2012 was $14,276. The aggregate principal amount outstanding under the loan and security agreement as of March 31, 2012 was $15,000. See Note 17 to our audited financial statements included elsewhere in this prospectus for further details regarding this loan and security agreement.

(2) A $1.00 increase (decrease) in the assumed initial public offering price per share of $, the mid-point of the price range set forth on the cover page of this prospectus, would increase (decrease) each of the pro forma as adjusted cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by $ million, assuming the shares offered by us as set forth on the cover of this prospectus remain the same and after deducting the estimated underwriters discounts and commissions and estimated offering costs payable by us.

The number of shares of our common stock to be outstanding after this offering is based on shares outstanding as of December 31, 2011. It does not include:

- shares of our common stock issuable upon the exercise of stock options outstanding as of December 31, 2011 at a weighted average exercise price of $ per share;
- shares of our common stock issuable upon the vesting of restricted stock units granted under our 2011 Equity Incentive Plan pursuant to our Management Bonus Plan in connection with this offering;

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- shares of our common stock issuable upon the vesting of restricted stock units granted under our 2011 Equity Incentive Plan pursuant to our Non-Employee Director Bonus Plan in connection with this offering;
- additional shares of our common stock that will be available for future issuance under our 2011 Equity Incentive Plan; and
- shares of our common stock issuable upon the exercise of warrants outstanding as of December 31, 2011 at a weighted average exercise price of $ per share.

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DILUTION

If you invest in our common stock, your ownership interest will be diluted to the extent of the difference between the initial public offering price and the pro forma as adjusted net tangible book value per share of our common stock immediately after the completion of this offering. Dilution results from the fact that the initial public offering price is substantially in excess of the net tangible book value (deficit) per share attributable to the existing stockholders for the presently outstanding stock.

Our historical net tangible book value (deficit) as of December 31, 2011 was $ million, or $ per share of common stock. Historical net tangible book value (deficit) per share represents the amount of our total tangible assets less total liabilities and convertible preferred stock, divided by 10,252,529, the shares of common stock outstanding as of December 31, 2011.

Our pro forma net tangible book value (deficit) as of December 31, 2011 was $ million, or $ per share of common stock. Pro forma net tangible book value (deficit) per share represents the amount of our total tangible assets less our total liabilities, divided by , the number of shares of our common stock outstanding, as of December 31, 2011, after giving effect to the (i) issuance of shares of our common stock upon the conversion of all outstanding shares of our convertible preferred stock and accumulated dividends thereon, (ii) issuance of shares of our common stock upon conversion of all outstanding principal and accrued interest on the convertible notes payable assuming an initial public offering price per share of $, the mid-point of the range set forth on the cover page of this prospectus, (iii) settlement of the put rights upon conversion of the convertible notes payable, (iv) conversion of the preferred stock warrants into common stock warrants and (v) elimination of the common stock warrant exercise price protection term, in all cases assuming each occurred on December 31, 2011.

Investors participating in this offering will incur immediate and substantial dilution. After giving effect to the sale of shares of our common stock in this offering, assuming an initial public offering price per share of $, the mid-point of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriters' discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of December 31, 2011 would have been $ million, or $ per share. This amount represents an immediate increase in pro forma as adjusted net tangible book value of $ per share to our existing stockholders and an immediate dilution in pro forma as adjusted net tangible book value of approximately $ per share to investors participating in this offering. We determine dilution by subtracting the pro forma as adjusted net tangible book value per share after the offering from the amount of cash that an investor participating in this offering paid for a share of common stock.

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The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share	$
Historical net tangible book value (deficit) per share as of December 31, 2011	
Increase in net tangible book value per share attributable to the issuance of common stock upon the conversion of all convertible preferred stock and accrued dividends thereon and all outstanding principal and accrued interest on the convertible notes payable, the conversion of all preferred stock warrants to common stock warrants, the elimination of the common stock warrant exercise price protection term, and the settlement of the put rights upon conversion of the convertible notes payable	
Pro forma net tangible book value (deficit) per share as of December 31, 2011 before this offering	
Increase in pro forma net tangible book value per share attributable to cash payments by investors participating in this offering	
Pro forma as adjusted net tangible book value per share after this offering	
Dilution in pro forma as adjusted net tangible book value per share to investors participating in this offering	$

If the underwriters exercise their option to purchase additional shares in full, the pro forma as adjusted net tangible book value per share after giving effect to this offering would be $ per share. This represents an increase in pro forma as adjusted net tangible book value of $ per share to existing stockholders and dilution in pro forma as adjusted net tangible book value of $ per share to investors participating in this offering.

A $1.00 increase (decrease) in the assumed initial public offering price per share of $, the mid-point of the price range set forth on the cover page of this prospectus, would increase (decrease) our pro forma as adjusted net tangible book value after this offering by $ million and the pro forma as adjusted net tangible book value per share after this offering by $ per share, and would increase (decrease) the dilution per share to investors participating in this offering by $ per share, in each case, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting the estimated underwriting discounts and commissions and estimated offering cost payable by us and assuming the closing of the offering made hereby occurs on , 2012. The information discussed above is illustrative only and will adjust based on the actual initial public offering price and other terms of the offering determined at pricing.

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The following table summarizes, on a pro forma as adjusted basis as described above as of December 31, 2011, the differences between the number of shares purchased from us, the total consideration paid to us, and the average price per share paid to us by existing stockholders and by investors participating in this offering at an assumed initial public offering price per share of $, the mid-point of the range set forth on the cover page of this prospectus and before deducting estimated underwriting discounts and commissions and estimated offering costs payable by us.

	Shares Purchased		Total Consideration		Average Price per Share
	Number	Percentage	Amount	Percentage	
Existing stockholders		%	$	%	$
Investors participating in this offering					
Total		%	$	%	$

A $1.00 increase (decrease) in the assumed initial public offering price per share of $, the mid-point of the price range set forth on the cover page of this prospectus, would increase (decrease) the total consideration paid by investors participating in this offering by $ million, and increase (decrease) the percentage of total consideration paid to us by investors participating in this offering by %, before deducting estimated underwriting discounts and estimated offering expenses payable by us, and assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and assuming the closing of the offering made hereby occurs on , 2012.

The discussion and table above assume no exercise of the underwriters' option to purchase additional shares. If the underwriters' option to purchase additional shares is exercised in full, the number of shares of our common stock held by existing stockholders will be further reduced to % of the total number of shares of our common stock to be outstanding after the offering, and the number of shares of our common stock held by investors participating in this offering will be further increased to % of the total number of shares of our common stock to be outstanding after the offering.

In addition, except as noted, the above discussion and table assume no exercise of stock options or warrants to purchase common stock after December 31, 2011. As of December 31, 2011, we had outstanding options to purchase a total of shares of our common stock at a weighted-average exercise price of $ per share, shares of common stock issuable upon the exercise of outstanding warrants at a weighted-average exercise price of $ per share and shares of convertible preferred stock issuable upon the exercise of outstanding warrants at an exercise price of $ per share (which shall be exercisable for an equivalent number of shares of common stock following the offering made hereby). If all such options and warrants had been exercised as of December 31, 2011, pro forma as adjusted net tangible book value per share would have been $ per share and dilution to investors participating in this offering would be $ per share. To the extent we grant options to our employees in the future and those options are exercised or other issuances of common stock are made, there will be further dilution to investors participating in this offering.

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SELECTED FINANCIAL DATA

The following table sets forth our selected financial data for the periods, and as of the dates, indicated. You should read the following selected financial data in conjunction with our audited financial statements and the related notes thereto included elsewhere in this prospectus and the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this prospectus.

We derived the statement of operations data for the years ended December 31, 2009, 2010 and 2011, and the balance sheet data as of December 31, 2010 and 2011, from our audited financial statements that are included elsewhere in this prospectus. We derived the statement of operations data for the fiscal years ended December 31, 2007 and 2008, and the balance sheet data as of December 31, 2007, 2008 and 2009, from our audited financial statements that are not included in this prospectus.

	Years Ended December 31,				
	2007	2008	2009	2010	2011
	(in thousands, except per share amounts)				
Statement of Operations Data:					
Revenues:					
Contract revenues	$ —	$ —	$ —	$ —	$ 2,705
Operating expenses:					
Research and development	29,404	29,182	17,592	12,422	31,206
General and administrative	4,069	4,813	3,888	5,152	5,723
Total operating expenses	33,473	33,995	21,480	17,574	36,929
Loss from operations	(33,473)	(33,995)	(21,480)	(17,574)	(34,224)
Other income (expense):					
Interest income	2,404	707	68	11	14
Interest expense	(460)	(2,061)	(6,952)	(10,290)	(19,497)
Other income	362	174	160	1,098	246
Total other income (expense)	2,306	(1,180)	(6,724)	(9,181)	(19,237)
Net loss	(31,167)	(35,175)	(28,204)	(26,755)	(53,461)
Convertible preferred stock dividends	(12,157)	(13,130)	(14,180)	(15,314)	(16,540)
Net loss attributable to common stockholders	$(43,324)	$(48,305)	$(42,384)	$(42,069)	$(70,001)
Net loss per share, basic and diluted	$ (4.86)	$ (4.89)	$ (4.18)	$ (4.10)	$ (6.83)
Weighted average shares outstanding, basic and diluted	8,919	9,870	10,140	10,249	10,253
Pro forma net loss per share, basic and diluted (unaudited) (1)					
Weighted average shares used in computing pro forma net loss per share, basic and diluted (unaudited) (1)					

(1) The pro forma net loss per share and weighted average shares have been calculated to give effect to the (i) issuance of shares of common stock upon conversion of all outstanding shares of our convertible preferred stock and accumulated dividends thereon and upon conversion of all outstanding principal and accrued interest on the convertible notes payable assuming an initial public offering price per share of $, the mid-point of the range set forth on the cover page of this prospectus, (ii) settlement of the put rights upon the conversion of the convertible notes payable, (iii) conversion of the preferred stock warrants into common stock warrants and (iv) elimination of the common stock warrant exercise price protection term, in all cases, assuming each had occurred on the later of January 1, 2011 or where applicable, the issuance date of the convertible notes payable. See Note 2 to our financial statements included elsewhere in the prospectus.

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	As of December 31,				
	2007	2008	2009	2010	2011
	(in thousands)				
Balance Sheet Data: (1)					
Cash and cash equivalents	$ 14,855	$ 8,441	$ 10,523	$ 1,408	$ 8,019
Marketable securities	23,768	—	750	—	—
Total assets	42,655	11,551	13,311	3,891	11,690
Convertible notes payable (2)	—	—	34,608	47,092	62,143
Accrued interest on convertible notes payable (2)	—	—	2,591	7,067	14,182
Put rights	—	—	2,525	11,044	28,223
Deferred revenue, net of current portion (3)	—	—	—	—	9,997
Convertible preferred stock	122,428	122,428	122,428	122,428	122,428
Accumulated deficit	(100,669)	(135,844)	(164,048)	(190,803)	(244,264)
Total stockholders' deficit	(98,877)	(133,299)	(160,476)	(186,908)	(239,297)

(1) The balance sheet data does not reflect the impact of $15,000 we borrowed under a loan and security agreement entered into in February 2012. As a result, our cash and cash equivalents balance as of March 31, 2012 was $14,276. The aggregate principal amount outstanding under the loan and security agreement as of March 31, 2012 was $15,000. See Note 17 to our audited financial statements included elsewhere in this prospectus for further details regarding this loan and security agreement.

(2) Convertible notes payable and accrued interest on convertible notes payable were long-term obligations as of December 31, 2010 and were current liabilities as of December 31, 2009 and December 31, 2011.

(3) Deferred revenue is related to the collaboration and license agreement with Sanofi. See Note 3 to our audited financial statements included elsewhere in this prospectus.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with "Selected Financial Data" and our financial statements and related notes appearing elsewhere in this prospectus. In addition to historical information, this discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from those discussed below. Factors that could cause or contribute to such differences include, but are not limited to, those identified below, and those discussed in the section titled "Risk Factors" included elsewhere in this prospectus.

Overview

We are a biopharmaceutical company developing new antibiotics to provide superior coverage, safety and convenience for the treatment of serious and life-threatening infections. Our proprietary drug discovery platform, which is based on Nobel Prize-winning science, provides an atomic-level, three-dimensional understanding of interactions between drug candidates and their bacterial targets and enables us to systematically engineer antibiotics with enhanced characteristics.

Our most advanced product candidate, delafloxacin, is intended for use as an effective and convenient first-line therapy primarily in hospitals prior to the availability of a specific diagnosis. Unlike currently available first-line treatments, delafloxacin has the potential to offer broad-spectrum coverage as a monotherapy, including for methicillin-resistant *Staphylococcus aureus*, or MRSA, with both intravenous and oral formulations. Delafloxacin has completed four Phase 2 clinical trials, including a Phase 2b clinical trial for the treatment of acute bacterial skin and skin structure infections, or ABSSSI. Based on the results from the Phase 2b clinical trial, we plan to commence the first of two planned Phase 3 trials for the treatment of ABSSSI in the second half of 2012. The timing of our second planned Phase 3 clinical trial will depend upon obtaining additional funding beyond the proceeds of this contemplated offering. Based on our current expectations regarding the availability of such funding and subject to the results of these two trials, we anticipate submitting a New Drug Application for delafloxacin for the treatment of ABSSSI as early as the fourth quarter of 2014 and for additional indications thereafter.

Our second product candidate, radezolid, is a next-generation, IV/oral oxazolidinone, designed to be a potent antibiotic with a safety profile permitting long-term treatment of resistant infections, including those caused by MRSA. We have completed two Phase 2 clinical trials of radezolid. We are also pursuing RX-04, our preclinical program partnered with Sanofi, S.A., which has produced new classes of antibiotics designed to combat the most difficult-to-treat, multi-drug resistant Gram-positive and Gram-negative bacteria. In addition, our pipeline includes RX-05, an antibacterial discovery program, and RX-06, an antifungal discovery program, both of which target newly discovered binding sites within ribosomes.

We have funded our operations primarily through private placements of convertible preferred stock and convertible debt, upfront and milestone payments under our collaboration with Sanofi, government tax credit programs and research grants. Since our inception in October 2000 through December 31, 2011, we have received an aggregate of $214.9 million in such funding, which includes:

- $122.4 million from the sales of convertible preferred stock;
- $71.0 million from the issuance of convertible notes and common stock warrants;

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- $19.0 million in upfront and milestone payments under our collaboration with Sanofi; and
- $2.5 million in government tax credit payments and research grants.

Prior to 2007, we received an aggregate of $122.4 million from sales of Series A, Series B and Series C convertible preferred stock. The holders of our convertible preferred stock are entitled to a cumulative dividend at the rate of 8.0% per annum. All of our outstanding convertible preferred stock and accumulated dividends thereon will convert into shares of common stock upon the closing of this offering, assuming that the closing occurs on , 2012.

During 2009, 2010 and 2011, we borrowed $35.0 million, $15.0 million and $21.0 million, respectively, through multiple issuances of convertible notes payable to stockholders and warrants for the purchase of our common stock, which we refer to as the 2009 Financing, 2010 Financing and 2011 Financing, respectively. The convertible notes issued in the 2009 Financing, 2010 Financing and 2011 Financing, which we refer to as the 2009 Notes, 2010 Notes and 2011 Notes, respectively, accrue interest at a rate of 10% per annum. The outstanding principal and accrued but unpaid interest on the convertible notes will automatically convert into shares of common stock immediately prior to the closing of this offering, assuming an initial public offering price per share of $, the mid-point of the price range set forth on the cover page of this prospectus, and that the closing occurs on , 2012. This conversion will occur prior to our grant of restricted stock units pursuant to our Management Bonus Plan and our Non-Employee Director Bonus Plan for additional shares and additional shares, respectively, of our common stock in connection with this offering. Each of the 2009, 2010 and 2011 Notes also contains a provision, or put right, that entitles the holders to receive specified preferential redemption payments upon a change of control or liquidation. In addition, as part of the 2009 Financing, 2010 Financing and 2011 Financing, we issued warrants to purchase shares of our common stock at a weighted-average exercise price of $, which unless otherwise exercised prior to the expiration of their respective 10-year terms by the holders thereof will remain outstanding following this offering. The warrants are entitled to anti-dilution protection if we subsequently issue additional shares of common stock for consideration per share less than the respective warrant exercise prices. The put rights of the convertible notes and the anti-dilution provisions of the warrants have been deemed to result in derivative instruments which require liability classification and mark-to-market accounting at each balance sheet date. These anti-dilution and put rights will terminate upon the closing of this offering.

In February 2012, we entered into a Loan and Security Agreement, or loan agreement, pursuant to which we borrowed an aggregate principal amount of $15.0 million. We are obligated to make monthly interest only payments in arrears, at a rate of 9.1% per annum, for a period of nine months commencing on April 1, 2012. Commencing on January 1, 2013, and continuing on the first day of each month through and including June 1, 2015, we will make consecutive equal monthly payments of principal and interest. We paid a 0.5% facility fee at the inception of the loan, and upon repayment of the total amount borrowed, we will be required to pay an amount equal to 4.5% of the total amount borrowed, both of which will be recognized as additional interest expense over the term of the loan. Amounts due under the loan agreement may become immediately due and payable upon the occurrence of a material adverse change, as defined under the loan agreement. Under the terms of the loan agreement, we are subject to operational covenants, including limitations on our ability to incur liens or additional debt, pay dividends, redeem stock, make specified investments and engage in merger, consolidation or asset sale transactions, among other restrictions. Additionally, in February 2012, in connection with the issuance of secured promissory notes pursuant to the loan agreement in February

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2012, we also issued warrants to purchase 10,714,285 shares of our common stock. These warrants have a seven-year term and are immediately exercisable at an exercise price of $0.07 per share.

In June 2011, we entered into an exclusive, three year worldwide research collaboration and license agreement with Sanofi for novel classes of antibiotics resulting from our RX-04 program. During the three year research term, the parties will each conduct research on a best efforts basis with each party being responsible for its own assigned research and development costs. Under the collaboration, we received in July 2011 a non-refundable, upfront payment of $10.0 million, and a payment of $9.0 million for the achievement of research milestones. In addition, we received an additional payment of $3.0 million from Sanofi in January 2012 for the achievement of a research milestone. For each RX-04 product developed by Sanofi, we are eligible for up to $9.0 million in potential research milestone payments, up to $27.0 million in potential development milestone payments relating to initiation of Phase 1, 2 and 3 clinical trials, up to $50.0 million in potential regulatory milestone payments relating to approvals in various jurisdictions including the United States, the European Union and Japan, and up to $100.0 million in potential commercial milestone payments. We may also receive tiered percentage royalties of up to 10% on sales from products commercialized under the agreement, if any. Sanofi has the right to develop an unlimited number of products provided that Sanofi exercises, during the research term, a development and commercialization option, or option, to obtain each licensed compound. Upon each option exercise, we will grant to Sanofi an exclusive, worldwide, royalty-bearing license, with the right to grant sublicenses, to develop, market and sell the licensed compound, and Sanofi will assume responsibility for the development and commercialization of the licensed compound. We retain all rights pertaining to the discovery platform and all future programs, and also have the right to opt into a co-development and co-commercialization arrangement with Sanofi, which provides an equal sharing of profits in the United States for one product of our choice.

We have never been profitable and have incurred significant net losses since our inception. We incurred net losses of $28.2 million, $26.8 million and $53.5 million for the years ended December 31, 2009, 2010 and 2011, respectively. These losses have resulted principally from costs incurred in connection with research and development activities, general and administrative costs associated with our operations and interest expense in connection with our convertible notes payable. As of December 31, 2011, we had an accumulated deficit of $244.3 million and cash and cash equivalents of $8.0 million.

We expect to continue to incur operating losses for the next several years as we work to discover, develop and commercialize our product candidates. As a result, we will seek to fund our operations through public or private equity offerings, debt financings and corporate collaborations and licensing arrangements. We cannot ensure that such funds will be available on terms favorable to us, if at all. The terms of any financing may adversely affect the holdings or rights of our stockholders and debt holders. Arrangements with collaborators or others may require us to relinquish rights to certain of our technologies or product candidates. In addition, we may never successfully complete development of any of our product candidates, obtain adequate patent protection for our technology, obtain necessary regulatory approval for our product candidates or achieve commercial viability for any approved product candidates. If we are not able to raise additional capital on terms acceptable to us, or at all, as and when needed, we may be required to curtail our operations, and we may be unable to continue as a going concern. Our cash and cash equivalent balances as of December 31, 2011, significant debt outstanding, net capital deficiency and recurring losses from operations raise substantial doubt about our ability to continue as a going concern. As a result, our independent registered public accounting firm included an explanatory paragraph in its report on our financial statements as of and for the year ended December 31, 2011 with respect to this uncertainty.

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Financial Overview

Revenues

Our 2011 revenues are solely comprised of contract revenues resulting from our collaboration with Sanofi. In July 2011, in connection with our collaboration, we received a non-refundable, upfront payment of $10.0 million, and a payment of $9.0 million for the achievement of certain research milestones, the majority of which we are recognizing over the three year research term. For the year ended December 31, 2011, we recognized $2.7 million of contract revenues under the collaboration. We estimate that as we continue to recognize revenues under the collaboration, our contract revenues for the next twelve months will be approximately $9.0 million, including the recognition in January 2012 of contract revenues of $3.0 million as a result of the payment received for the achievement of a research milestone. In the future, contract revenues under our collaboration with Sanofi may include additional payments for achieving research milestones, license payments for product candidates, as well as payments for such licensed product candidates achieving development, regulatory and commercial milestones, and product royalties.

We have no products approved for sale, have not generated any revenues from product sales since our inception and do not expect to generate any revenue from the sale of products in the near future. If our discovery or development efforts result in clinical success and regulatory approval or collaboration agreements with third parties for any of our product candidates, we may generate revenues from those product candidates.

Research and Development Expenses

The majority of our operating expenses to date have been for research and development activities related to delafloxacin, radezolid and our discovery/preclinical programs. We record all research and development expenses, including those paid to third parties, to operations as incurred.

Research and development expenses consist primarily of costs associated with our product discovery and development efforts, including preclinical and clinical trials. Research and development expenses include:

- outsourced discovery and development expenses incurred through agreements with contract research organizations, or CROs, contract manufacturers and medicinal chemistry service providers, and milestone and license payments made under licensing arrangements;
- personnel costs, including salaries, benefits and stock-based compensation;
- the cost of laboratory and other supplies;
- rent and other facilities costs;
- professional and consulting fees; and
- travel and other costs.

We have been developing delafloxacin, radezolid and our discovery programs in parallel, and typically use our employee and infrastructure resources across multiple research and development programs. We track outsourced discovery and development costs by specific discovery programs and development compounds but do not allocate personnel or other internal costs related to research and development to specific discovery programs or

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development compounds. These expenses are included in personnel costs and other internal costs, respectively, in the table below.

The following table summarizes our research and development expenses for the years ended December 31, 2009, 2010 and 2011:

	Years Ended December 31,		
	2009	2010	2011
	(In thousands)		
Outsourced discovery and development costs:			
Delafloxacin	$ 3,896	$ 2,935	$19,123
Radezolid	3,605	141	2,485
RX-04	879	1,035	593
Other	2	—	402
Total outsourced discovery and development costs	8,382	4,111	22,603
Personnel costs	6,227	5,175	5,035
Other internal costs	2,983	3,136	3,568
Total research and development expenses	$17,592	$12,422	$31,206

Since acquiring delafloxacin from Wakunaga Pharmaceutical Co., Ltd., or Wakunaga, in 2006 and through December 31, 2011, we have incurred outsourced discovery and development costs for delafloxacin of approximately $48.0 million, including the initial license fee of $1.5 million paid in May 2006. Through December 31, 2011, we have incurred outsourced discovery and development costs of approximately $30.8 million for radezolid and $3.3 million for RX-04. Through December 31, 2011, the outsourced discovery and development costs for other product candidates and preclinical and discovery programs were immaterial.

The successful development of our clinical and preclinical product candidates is highly uncertain. At this time, due to the inherently unpredictable nature of preclinical and clinical development, and given the early stage of our discovery programs, we cannot reasonably estimate or know the nature, specific timing or estimated costs of the efforts that will be necessary to complete the development of our product candidates. However, we expect that our research and development expenses will increase significantly in future periods as we continue the clinical development of delafloxacin and radezolid, and conduct research and development activities on our RX-04 preclinical program and our discovery programs. We expect to fund our research and development expenses from our cash and cash equivalents, a portion of the net proceeds from this offering, milestone payments received from the collaboration with Sanofi, if any, additional financing transactions and collaboration arrangements that we intend to enter into. We cannot forecast with any degree of certainty which product candidates or preclinical programs may be subject to future collaborations or contracts, when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development plans and capital requirements.

Delafloxacin. We plan to commence the first of two planned Phase 3 trials for the treatment of ABSSSI in the second half of 2012. The timing of our second planned Phase 3 clinical trial will depend upon obtaining additional funding beyond the proceeds of this contemplated offering. Based on our current expectations regarding the availability of such funding and subject to the results of these two trials, we anticipate submitting applications for marketing approval to the U.S. Food and Drug Administration and the European Medicines Agency as early as the fourth quarter of 2014. We also intend to seek approval for additional indications for delafloxacin, including CABP and cIAI.

Radezolid. Subject to obtaining sufficient additional funding beyond the proceeds of this contemplated offering, we intend to initiate a Phase 2 study for the treatment of ABSSSI and a

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Phase 1 long-term safety study in humans to demonstrate what we believe is a long-term safety advantage over Zyvox. Following these studies, we also intend to perform additional clinical trials of radezolid in ABSSSI and CABP and for indications that require long-term treatment, such as osteomyelitis and prosthetic and joint infections.

RX-04. We intend to work with Sanofi under our collaboration agreement to identify and develop multiple RX-04 product candidates. In addition to the development and commercial milestone payments for which we are eligible for each RX-04 product candidate, we intend to exercise our right to co-commercialize one RX-04 product of our choosing in the United States.

General and Administrative Expenses

General and administrative expenses consist primarily of personnel costs, including salary, benefits and stock-based compensation, for employees in administration, finance and business development, as well as costs associated with recruitment efforts. Other significant expenses include: rent and other facilities costs; professional and consulting fees for accounting and tax services, business development activities and general legal services, including legal expenses to pursue patent protection of our intellectual property; and travel and other costs. We expect general and administrative expenses to increase significantly as we begin operating as a public company and continue to build our corporate infrastructure in support of continued development of delafloxacin, radezolid, our RX-04 preclinical program and our discovery programs. These increases may impact: personnel costs; legal, accounting and consultant fees; expenses related to compliance with the Sarbanes-Oxley Act of 2002; expenses related to filing annual, quarterly and other reports and documents with the Securities and Exchange Commission; increased directors' and officers' insurance premiums; fees for investor relations services; expenses related to listing and transfer agent fees; and expenses for implementing enhanced business systems.

Interest Income

Interest income consists of interest earned on our cash and cash equivalents, though, since 2009, our interest income has not been significant due to nominal cash and cash equivalent balances. We anticipate that our interest income will increase following the receipt of the proceeds from this offering.

Interest Expense

Interest expense consists of: cash interest paid or accrued on notes payable and convertible notes payable; non-cash interest expense related to the amortization of debt issuance costs and debt discounts associated with the issuance of our notes payable and convertible notes payable; mark-to-market adjustments for changes in value of the preferred stock warrants issued in connection with our notes payable; mark-to-market adjustments for changes in the value of the common stock warrants issued in connection with the issuance of convertible notes payable; and mark-to-market adjustments for changes in the value of change of control and liquidation put rights associated with the issuance of our convertible notes payable. We anticipate that our interest expense will decrease significantly upon the completion of this offering when the convertible notes payable convert into shares of common stock.

Other Income

Other income for the year ended December 31, 2010 included income related to the Qualifying Therapeutic Discovery Project, or QTDP, program, which provided for reimbursement in 2010 of certain costs paid or incurred during 2009 and 2010 directly related to the conduct of a QTDP program. Other income for all periods also includes income received as a result of

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legislation in the State of Connecticut where companies have the opportunity to exchange certain research and development tax credit carryforwards for a cash payment of 65% of the research and development tax credit. We do not anticipate any further income related to the QTDP program, however, we will continue to record other income relating to the exchange of research and development tax credit carryforwards with the State of Connecticut, to the extent that the program continues.

Income Taxes

As of December 31, 2011, we had federal and state net operating loss carryforwards of approximately $203.8 million and $203.5 million, respectively, and federal and state research and development tax credit carryforwards of approximately $7.4 million and $3.5 million, respectively. Our federal and state net operating loss carryforwards and federal research and development tax credits will expire through 2031 if not used, and our state research and development tax credit carryforwards do not expire.

The Tax Reform Act of 1986 provides for a limitation on the annual use of federal net operating loss and research and development tax credit carryforwards following certain ownership changes, which could limit our ability to utilize these carryforwards. We may already be subject to Section 382 limitations due to previous ownership changes. In addition, future changes in stock ownership may also trigger an ownership change and, consequently, a Section 382 limitation. Due to the significant complexity and cost associated with a change in control study, and the expectation of continuing to incur losses whereby the net operating losses and federal tax credits are not anticipated to be used in the foreseeable future, we have not assessed whether there have been changes in control since our formation. If we have experienced changes in control at any time since our formation, utilization of our net operating losses or research and development credit carryforwards would be subject to significant annual limitations under Section 382.

Critical Accounting Policies and Significant Judgments and Estimates

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

While our significant accounting policies are more fully described in Note 2 to our financial statements appearing elsewhere in this prospectus, we believe that the following accounting policies are critical to the process of making significant judgments and estimates in the preparation of our financial statements.

Revenue Recognition

During 2011, we entered into our first collaboration and license agreement with Sanofi for the research and development of novel classes of antibiotics under our RX-04 program The terms of the agreement include non-refundable upfront fees, and the potential for research, development, regulatory and commercial milestone fees, as well as royalties on product sales of licensed products, if and when such product sales occur.

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We recognize revenue when all of the following criteria are met: persuasive evidence of an arrangement exists, services are performed or products have been delivered, the fee is fixed and determinable and collection is reasonably assured. Determinations of whether persuasive evidence of an arrangement exists and whether delivery has occurred or services have been rendered are based on management's judgments regarding the fixed nature of the fees charged for deliverables and the collectability of those fees. Should changes in conditions cause management to determine that these criteria are not met for any new or modified transactions, revenue recognized could be adversely affected.

We recognize revenue related to collaboration and license arrangements in accordance with the provisions of Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 605-25, "Revenue Recognition – Multiple-Element Arrangements," or ASC Topic 605-25. Additionally, we adopted effective January 1, 2011, Accounting Standards Update, or ASU, No. 2009-13, "Multiple Deliverable Revenue Arrangements," or ASU 2009-13, which amended ASC Topic 605-25 and:

- provided guidance on how deliverables in an arrangement should be separated and how the arrangement consideration should be allocated to the separate units of accounting;
- required an entity to determine the selling price of a separate deliverable using a hierarchy of (i) vendor-specific objective evidence, or VSOE, (ii) third-party evidence, or TPE, or (iii) best estimate of selling price, or BESP; and
- required the allocation of the arrangement consideration, at the inception of the arrangement, to the separate units of accounting based on relative fair value.

We evaluate all deliverables within an arrangement to determine whether or not they provide value on a stand-alone basis. Based on this evaluation, the deliverables are separated into units of accounting. The arrangement consideration that is fixed and determinable at the inception of the arrangement is allocated to the separate units of accounting based on relative fair value. We may exercise significant judgment in determining whether a deliverable is a separate unit of accounting, as well as in estimating the selling prices of such unit of accounting.

To determine the selling price of a separate deliverable, we use the hierarchy as prescribed in ASC Topic 605-25 based on VSOE, TPE or BESP. VSOE is based on the price charged when the element is sold separately and is the price actually charged for that deliverable. TPE is determined based on third party evidence for a similar deliverable when sold separately and BESP is the price at which we would transact a sale if the elements of collaboration and license arrangements were sold on a stand-alone basis. We expect that establishing VSOE or TPE for the deliverables within collaboration and license arrangements will be difficult as we do not have a history of entering into such arrangements or selling the individual deliverables within such arrangements separately. In addition, there is significant differentiation in these arrangements, which indicates that comparable third party pricing may not be available. We expect the selling price for the deliverables within collaboration and license arrangements to be determined using BESP. The process for determining BESP involves significant judgment on our part and includes consideration of multiple factors such as estimated direct expenses and other costs, and available data.

For each unit of accounting identified within an arrangement, we determine the period over which the performance obligation occurs. Revenue is then recognized using either a proportional performance or straight-line method. We recognize revenue using the proportional performance method when the level of effort to complete our performance obligations under an

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arrangement can be reasonably estimated and such performance obligations are provided on a best-efforts basis. Direct labor hours or full time equivalents are typically used as the measurement of performance.

In connection with the collaboration with Sanofi, we were required to make numerous estimates and judgments, primarily related to the determination of deliverables, unit(s) of accounting and BESP. In particular, based on our judgment, we identified that the deliverables under the collaboration were (i) the research license, (ii) research services during the three year research term and (iii) joint steering committee, or JSC, participation, and determined that these deliverables should be accounted for as a single unit of accounting. We also concluded that the future ability by Sanofi to exercise an option is a substantive option as it is in the control of Sanofi, and therefore it was not considered to be a deliverable at the inception of the collaboration. Finally, we determined that the BESP for the single unit of accounting discussed above was $18.3 million by considering the number of personnel who will be dedicated to the research services and JSC participation during the three year research term, and the estimated costs of the personnel based on our annual historical direct costs, together with a market-based profit margin, which was determined based on an analysis of third-party data for companies providing a similar type of outsourced scientific personnel services.

Additionally, we considered that after the completion of the three year research term, the collaboration contains a two year follow-on period in which neither party will conduct any research or development activities on any RX-04 compound other than licensed compounds. Therefore, we determined that the remaining initial consideration of $0.7 million represents an upfront fee that will be recognized as contract revenues on a straight-line basis over the customer benefit period, which is five years.

Effective January 1, 2011, we adopted ASU No. 2010-17, “Milestone Method of Revenue Recognition,” or ASU 2010-17, which provides guidance on revenue recognition using the milestone method. Under the milestone method, a payment that is contingent upon the achievement of a substantive milestone is recognized in its entirety in the period in which the milestone is achieved. The determination that a milestone is substantive is subject to considerable judgment. In January 2012, we received a $3.0 million payment from Sanofi for the achievement of a research milestone. We determined that the milestone was substantive and therefore recognized the amount as contract revenues in its entirety in January 2012. If we receive additional milestone payments in the future under the collaboration with Sanofi, we will recognize such payments under the milestone method.

Royalty revenues will be recognized based on contract terms when reported sales are reliably measurable and collectability is reasonably assured. To date, none of our products has been approved, and therefore we have not earned any royalty revenue from product sales.

Research and Development

As part of the process of preparing our financial statements, we are required to estimate accrued and prepaid research and development expenses. We review new and open contracts, and communicate with applicable internal and vendor personnel to identify services that have been performed on our behalf and estimate the level of service performed and the associated costs incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost for accrued expenses. The majority of our service providers invoice us monthly in arrears for services performed, however, some require advanced payments. We also review, with applicable internal and vendor personnel, services that have been performed when payment was required in advance and estimate the level of service performed and the associated costs incurred. We make estimates of our accrued and prepaid expenses as of each balance sheet date

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in our financial statements based on facts and circumstances known to us. We also periodically confirm the accuracy of our estimates with the service providers and make adjustments, if necessary. To date, we have not adjusted our estimates at any particular balance sheet date in any material amount. Examples of estimated accrued and prepaid expenses include:

- fees paid to CROs in connection with preclinical studies and clinical trials;
- fees paid to investigative sites in connection with clinical trials;
- fees paid to contract manufacturers in connection with the production of clinical trial materials;
- fees paid for outsourced chemistry services;
- obligations under licensing arrangements; and
- professional service fees.

We base our accrued and prepaid expenses related to preclinical studies and clinical trials on our estimates of the services received and efforts expended, all pursuant to contracts with multiple research institutions and CROs that conduct and manage preclinical studies and clinical trials 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. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of clinical trial milestones. We estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust accordingly. If we do not identify costs that have been incurred or if we underestimate or overestimate the level of services performed or the costs of these services, our actual expenses could differ from our estimates.

Stock-Based Compensation

We account for stock-based compensation by measuring and recognizing compensation expense for all stock-based awards made to employees and directors based on grant date fair values. We use the straight-line method to allocate compensation cost to reporting periods over each optionee's requisite service period, which is generally the vesting period. We estimate forfeitures at the time of grant based on our historical experience and revise, if necessary, in subsequent periods if actual forfeitures differ from estimates. We use the Black-Scholes option-pricing model as the most appropriate fair-value method for our stock-based awards. The Black-Scholes option-pricing model requires the input of subjective assumptions, including the expected volatility, the expected term and the fair value of the underlying common stock on the date of grant.

We account for all stock-based awards issued to non-employees based on their fair value on the measurement dates using the Black-Scholes option-pricing model. Stock-based awards granted to non-employees are subject to periodic revaluation over their vesting terms. As a result, the charge to operations for non-employee options with vesting is affected each reporting period by changes in the fair value of our common stock.

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The following table summarizes our assumptions used in the Black-Scholes option-pricing model for the years ended December 31, 2009, 2010 and 2011:

	Years Ended December 31,		
	2009	2010	2011
Risk free interest rate	2.29% - 2.92%	2.51% - 2.83%	1.13% - 2.35%
Expected dividend yield	0%	0%	0%
Expected term—employee awards	6 years	6 years	6 years
Expected term—non-employee awards	10 years	N/A	10 years
Expected volatility	80%	76%	70%

Risk-free Interest Rate. The risk-free interest rate was based on zero coupon United States Treasury instruments that had terms consistent with the expected term of our stock option grants.

Expected Dividend Yield. We have never declared or paid any cash dividends and do not presently plan to pay cash dividends in the foreseeable future.

Expected Term. We utilize the "simplified" method for "plain vanilla" options to estimate the expected term of stock option grants to employees. Under this approach, the expected term is presumed to be the simple average of the vesting term and the contractual term of the option. We utilize the contractual term as the expected term for stock option grants to non-employees.

Expected Volatility. The expected volatility used to value stock option grants is based on volatilities of a peer group of similar companies whose share prices are publicly available. The peer group was developed based on companies in the pharmaceutical and biotechnology industry in a similar stage of development.

Stock-Based Compensation Summary. Stock-based compensation for stock option grants is reported in our statements of operations for the years ended December 31, 2009, 2010 and 2011 as follows:

	Years Ended December 31,		
	2009	2010	2011
	(In thousands)		
Research and development	$406	$160	$ 59
General and administrative	544	162	198
Total stock-based compensation	$950	$322	$257

Based on stock options outstanding as of December 31, 2011, we had unrecognized stock-based compensation expense for employees, net of estimated forfeitures, of $0.3 million which will be recognized over a weighted-average period of 2.08 years.

Assuming an initial public offering price per share of $, the mid-point of the range set forth on the cover of this prospectus, the intrinsic value of the 22,765,013 outstanding vested and unvested options at December 31, 2011 would be $.

We expect to continue to grant stock options in the future, which may increase our stock-based compensation expense in future periods. The assumptions used above in the Black-Scholes option-pricing model represent management's best estimates, but these estimates involve inherent uncertainties and the application of management's judgment. As a result, if factors change, and we use different assumptions, our stock-based compensation could be materially different in the future.

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The following table shows the grant date, number of shares, exercise price per share and fair value estimate per common share of stock options granted since January 1, 2011:

Grant Date	Number of Shares	Exercise Price per Share	Fair Value Estimate per Common Share
January 31, 2011	200,000	$ 0.0700	$ 0.0014
March 19, 2011	20,000	$ 0.0060	$ 0.0014
September 1, 2011	425,000	$ 0.0016	$ 0.0016
November 18, 2011	150,000	$ 0.0016	$ 0.0016

Common Stock Fair Value

The fair value of our common stock underlying stock options granted has historically been determined by our board of directors, with assistance from management, based upon information available at the time of grant. The intention has been that all options granted be exercisable at a price per share not less than the per share fair value of our common stock underlying those options on the date of grant. Given the absence of a public trading market for our common stock, and in accordance with the American Institute of Certified Public Accountants Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, management and our board of directors have exercised reasonable judgment and considered numerous objective and subjective factors to determine the best estimate of the fair value of our common stock at each stock option grant date. These factors included:

- the progress of our research and development programs, including the status of clinical trials for our products;
- achievement of enterprise milestones, including our entering into collaboration and licensing agreements;
- our financial condition, including cash on hand and debt levels;
- our need for future financing to fund operations;
- the composition of, and changes to, our management team and board of directors;
- the rights and preferences of our convertible preferred stock and convertible notes payable relative to our common stock;
- the lack of marketability of our common stock;
- an analysis of mergers and acquisitions, initial public offerings, or IPOs, and the market performance of similar companies in the pharmaceutical and biotechnology industry sectors;
- the likelihood of achieving a discrete liquidity event, such as a sale or merger, or IPO, given prevailing market conditions;
- the expected valuation in a potential sale or merger, or IPO; and
- external market and economic conditions impacting the pharmaceutical and biotechnology industry sectors.

Grants— 2011. Valuations of our common stock were completed as of December 31, 2010, June 30, 2011, September 30, 2011 and December 31, 2011. During 2009, 2010 and 2011, we issued an aggregate of $71.0 million of convertible notes payable, with associated common stock warrants, with exercise prices not less than the per share fair value of our common stock. The terms of the notes, as discussed further below and under “—Liquidity and Capital Resources,” provided for varying economic outcomes for the debt holders depending on

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differing types of liquidity events, such as an IPO or a strategic transaction. In addition, management and the board of directors determined that, given the stage of development for its programs and the current outlook for them, there was a likelihood that there would be differing times to liquidity depending on whether the liquidity event would be an IPO or a strategic transaction.

We value our common stock using the probability-weighted expected return method, or PWERM. Under the PWERM, the value of a company's common stock is estimated based upon an analysis of future enterprise values under various liquidity events. The future enterprise values are allocated among the various convertible debt and equity classes expected to be outstanding at the various liquidity events based on the rights and preferences of each class. The future value of the common stock under each liquidation event is discounted back to the valuation date at an appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for the common stock. A discount for lack of marketability, to account for the illiquidity of the common stock, is applied to the indicated common stock value to determine the fair value of the common stock.

In connection with the PWERM analyses as of December 31, 2010, June 30, 2011, September 30, 2011 and December 31, 2011, two types of future event scenarios were considered: an IPO and a strategic sale or merger. Three different IPO and four different sale/merger scenarios were considered for a total of seven scenarios as of each valuation date, in order to reflect a range of possible values. As of each valuation date, excluding December 31, 2011, our management and board of directors determined the total probability for the three IPO scenarios was 65%, with a corresponding total probability for the four sale/merger scenarios of 35%, based on an analysis of current market conditions and management and the board of directors' expectations of the timing of future scientific progress with its product candidates and discovery programs. For the December 31, 2011 valuation date, our management and board of directors determined the total probability for the three IPO scenarios was 70%, with a corresponding total probability for the four sale/merger scenarios of 30%, based on an analysis of current market conditions and management and the board of directors' evaluation of the continued progress of the IPO process. The future enterprise value for each scenario was estimated by management and the board of directors based on an analysis of IPOs or sales/mergers of companies in a similar stage of development as our own at each respective valuation date. For each scenario, the proceeds to the common stockholders were calculated based on the preferences and priorities between the convertible debt and preferred and common stock.

For purposes of the December 31, 2010 valuation, a discount for lack of marketability of 10% was applied to account for the lack of access to an active public market for the common stock and the fact that our common stock represents a minority interest in our company. Despite our early stage of development, we determined a discount of 10% was appropriate after giving consideration to the recent completion of several studies for Phase 2 clinical trials which were moving us closer to a liquidity event. For purposes of the June 30, 2011, September 30, 2011 and December 31, 2011 valuations, discounts of 5%, 5% and 2.5%, respectively, were applied for lack of marketability due to the passage of time resulting in a further reduction in the estimated time to an expected liquidity event from prior valuations.

Management and the board of directors increased its estimate of our probability-weighted future enterprise value as of December 31, 2010, as compared to December 31, 2009, based on the establishment of a final protocol for the delafloxacin Phase 2b study and the ongoing progress for a potential collaborative deal with RX-04. In connection with the June 30, 2011 valuation, management and the board of directors further increased its estimate of our probability-weighted future enterprise value based on the significant changes in the business

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from December 31, 2010 to June 30, 2011 as discussed below. For purposes of the September 30, 2011 valuation, as the Sanofi collaboration was still in its early stages and no additional data was available from either the delafloxacin Phase 2b clinical trial or the radezolid long-term preclinical study, management and the board of directors used the same probability-weighted future enterprise value as was used for the June 30, 2011 valuation. For purposes of the December 31, 2011 valuation, management and the board of directors decreased its estimate of our probability-weighted future enterprise value based on an analysis of then- current IPO valuations of similarly-situated companies.

Based on these valuations, the fair value of our common stock as of December 31, 2010 was determined to be $0.0014, the fair value of our common stock as of June 30, 2011 and September 30, 2011 was determined to be $0.0016, and the fair value of our common stock as of December 31, 2011 was determined to be $0.0014.

The decrease in the fair value of our common stock from December 31, 2009 to December 31, 2010 can be mainly attributed to the dilutive effect of the issuances during 2010 of $15.0 million of convertible notes payable, and the anticipated issuance in January 2011 of approximately $20.0 million of additional convertible notes payable, with associated common stock warrants. The increase in the fair value of our common stock from December 31, 2010 to June 30, 2011 and September 30, 2011 can be attributed to the increase in the estimate of our probability-weighted future enterprise value which was based on the following significant changes in the business during the period from December 31, 2010 to June 30, 2011: we signed an exclusive, worldwide research agreement with Sanofi for novel classes of antibiotics resulting from the RX-04 program for the treatment of Gram-negative and Gram-positive bacteria; enrollment in the delafloxacin Phase 2b clinical trial was proceeding according to plan; and the radezolid long-term preclinical study was showing favorable evidence of radezolid's long-term safety profile. The decrease in the fair value of our common stock from September 30, 2011 to December 31, 2011 can be attributed to the decrease in the estimate of our probability-weighted future enterprise value based on an analysis of then-current IPO valuations of similarly-situated companies.

There are significant judgments and estimates involved in the determination of the above fair values of our common stock. These judgments and estimates include assumptions, among others, of: our future performance; the time to a liquidity event such as an IPO or a sale or merger; the probability and timing of our progress towards commercialization of our programs; the valuation of the future cash flows from our programs; and the appropriate valuation methods used in determining fair value. In addition to the significant judgments, estimates and assumptions noted above, a significant factor that impacts the fair valuation of our common stock is the conversion rights of our 2009 Notes, 2010 Notes and 2011 Notes. Such conversion rights provide that in the event of an IPO prior to maturity, the outstanding amounts of the 2009 Notes, 2010 Notes and 2011 Notes, including accrued interest, shall automatically convert immediately prior to the IPO into such number of shares of common stock that represent up to 99.2% of our outstanding common stock on a fully-diluted basis, but with the ultimate percentage to be determined by the offering price in the IPO and subject to the limitations of value equal to three times the outstanding principal and interest on the 2011 Notes and 2010 Notes and one and one-third times the outstanding principal and interest on the 2009 Notes, as more fully described in Note 6 to our financial statements appearing elsewhere in this prospectus. Accordingly, it is possible that in the event of an IPO, the outstanding shares of common stock, common stock options, common stock warrants and common stock issued in connection with the automatic conversion of the outstanding preferred stock and accrued dividends will, in aggregate, represent only 0.8% of the outstanding shares of our common stock on a fully-diluted basis prior to the IPO and prior to giving effect to the expected grant of

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restricted stock units in connection with this offering under the Management Bonus Plan and Non-Employee Director Bonus Plan as more fully described in Notes 14 and 17 to our financial statements appearing elsewhere in this prospectus. In order to effect such conversion rights, we will be required to issue to the holders of the 2009 Notes, 2010 Notes and 2011 Notes such number of shares of common stock as is required to effect such conversion rights. It is currently anticipated that after issuing such number of shares of common stock to effect the conversion of the 2009 Notes, 2010 Notes and 2011 Notes, we will effect a reverse stock split that would materially impact both the number of shares of common stock and common stock equivalents outstanding, as well as the exercise price of such options and other common stock equivalents.

If we had made different assumptions and estimates, the fair value of our common stock and the amount of our stock-based compensation expense could have been materially different. We believe that we have used reasonable approaches, methodologies and assumptions in determining the fair value of our common stock.

Fair Values of Change of Control and Liquidation Put Rights

Each of the 2009 Financing, 2010 Financing and 2011 Financing contains a provision, or put right, which provides that upon a change of control or liquidation, as defined in the agreements, the noteholders are entitled to an amount that is equal to the greater of: (i) the sum of (y) 1.75x, 3.5x and 3.5x, respectively, of the principal amount plus (z) any accrued but unpaid interest and (ii) the amount the holder would be entitled to receive if the outstanding debt amount converted into shares of common stock immediately prior to repayment. These put rights are considered derivative instruments that require liability classification and mark-to-market accounting at each balance sheet date.

Therefore, upon each convertible notes payable closing, we determined the fair values of the put rights using the PWERM valuation analysis method consistent with the discussion above for the common stock valuations, and recorded the put rights as a liability on the balance sheets and as debt discount to be amortized to interest expense through the earliest date upon which we could have been required to repay the amounts outstanding for each respective convertible notes payable issuance. The debt discount related to the initial fair values of the put rights associated with the 2009 Notes was amortized to interest expense through January 8, 2010, which was the original earliest date at which we could have been required to repay all amounts outstanding under the 2009 Notes. During the year ended December 31, 2010, the debt discount related to the initial fair values of the put rights associated with the 2010 Notes was amortized to interest expense through March 31, 2011, which was the original earliest date at which we could have been required to repay all amounts outstanding under the 2010 Notes. Subsequent to the amendment of the 2010 Notes in connection with the January 2011 Financing, which amended the original earliest date at which we could have been required to repay all amounts outstanding under the 2010 Notes from March 31, 2011 to June 30, 2012, the unamortized debt discount remaining at January 2011 was being amortized to interest expense through June 30, 2012. The debt discount related to the initial fair values of the put rights associated with the 2011 Financing was being amortized to interest expense through June 30, 2012, which was the earliest date at which we could have been required to repay all amounts outstanding under the 2011 Notes. Pursuant to a subordination agreement executed in connection with the February 2012 loan agreement, we determined that the change to the date on which the lenders can put the debt back to us is a modification of the 2009 Notes, 2010 Notes and 2011 Notes. As such, the unamortized debt discount remaining at February 2012 related to the 2009 Notes, 2010 Notes and 2011 Notes will be amortized to interest expense from the date of modification through June 1, 2015, the stated maturity date of the loan agreement.

At the end of each reporting period, the fair values of the put rights are determined by management using the PWERM valuation analysis method consistent with the discussion above

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for the common stock valuations, and the recorded value adjusted, with any changes recorded as a component of interest expense. We will continue to adjust the fair values of the put rights at each period end for changes in fair value until the conversion or repayment of the associated convertible notes payable.

Fair Values of Common Stock Warrants

As part of the 2009 Financing, 2010 Financing and 2011 Financing, we issued warrants for the purchase of common stock. The 2009 warrants include a provision that provides for a reduction in the warrant exercise price if we subsequently issue additional shares of common stock for consideration per share less than the warrant exercise price. The 2010 and 2011 warrants include provisions that provide for a reduction in the warrant exercise price and an increase in the number of exercisable warrants if we subsequently issue additional shares of common stock for consideration per share less than the warrant exercise prices. As a result, the warrants have been deemed to be derivative instruments that require liability classification and mark-to-market accounting at each balance sheet date. Subsequent to the completion of an IPO, the provisions described above will no longer be applicable, and as such the requirements for liability classification and mark-to-market adjustments will cease.

Upon issuance, we estimated the fair values of these warrants using a multiple scenario probability-weighted option-pricing model with the following inputs: the estimated fair value of the underlying common stock at the valuation measurement date; the risk-free interest rates; the expected dividend rates; the remaining contractual terms of the warrants; the expected volatility of the price of the underlying common stock; and the probability of various liquidity events. Our estimates are based, in part, on subjective assumptions and could differ materially in the future. The fair values of these warrants were recorded as liabilities on the balance sheets and as debt discount to be amortized to interest expense through the earliest date upon which we could have been required to repay the amounts outstanding for each respective convertible notes payable issuance. The debt discount related to the initial fair values of the warrants issued in connection with the 2009 Financing was amortized to interest expense through January 8, 2010, which was the original earliest date at which we could have been required to repay all amounts outstanding under the 2009 Notes. During the year ended December 31, 2010, the debt discount related to the initial fair values of the warrants issued in connection with the 2010 Financing was amortized to interest expense through March 31, 2011, which was the original earliest date at which we could have been required to repay all amounts outstanding under the 2010 Notes. As a result of the amendment of the 2010 Notes in connection with the 2011 Financing, which amended the original earliest date at which we could have been required to repay all amounts outstanding under the 2010 Notes from March 31, 2011 to June 30, 2012, the unamortized debt discount remaining at January 2011 was being amortized to interest expense through June 30, 2012. The debt discount related to the initial fair values of the warrants issued in connection with the 2011 Financing was being amortized to interest expense through June 30, 2012, which was the earliest date at which we could have been required to repay all amounts outstanding under the 2011 Notes. Pursuant to a subordination agreement executed in connection with the February 2012 loan agreement, we determined that the change to the date on which the lenders can put the debt back to us is a modification of the 2009 Notes, 2010 Notes and 2011 Notes. As such, the unamortized debt discount remaining at February 2012 related to the 2009 Notes, 2010 Notes and 2011 Notes will be amortized to interest expense from the date of modification through June 1, 2015, the stated maturity date of the loan agreement.

At the end of each reporting period, the fair values of the warrants are determined by management using a multiple scenario probability-weighted option-pricing model using the following inputs: the estimated fair value of the underlying common stock at the valuation measurement date; the risk-free interest rates; the expected dividend rates; the remaining contractual terms of the warrants; the expected volatility of the price of the underlying common

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stock; and the probability of various liquidity events, with any changes in value during the period recorded as a component of interest expense. We will continue to adjust the fair values of the warrants at each period end for changes in fair value until the earlier of the exercise or expiration of the applicable common stock warrants or the completion of this offering.

Results of Operations

Comparison of the Years Ended December 31, 2010 and 2011

Revenues

The following table summarizes our revenues for the years ended December 31, 2010 and 2011:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2010	2011		
	(In thousands, except percentages)			
Contract revenues	$—	$2,705	$ 2,705	100%

We did not record revenue during 2010. During 2011, we recognized $2.7 million of contract revenues under the collaboration with Sanofi, based on the level of efforts expended from the inception of the collaboration with Sanofi in July 2011 through December 31, 2011.

Research and Development Expenses

The following table summarizes our research and development expenses for the years ended December 31, 2010 and 2011:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2010	2011		
	(In thousands, except percentages)			
Research and development expenses	$12,422	$31,206	$ 18,784	151%

Research and development expenses increased $18.8 million from 2010 to 2011. This increase was primarily due to an $18.5 million increase in outsourced development costs in connection with delafloxacin, radezolid and our RX-04 program. During 2011, we initiated and completed enrollment in a Phase 2b clinical trial for delafloxacin for the treatment of ABSSSI to evaluate the new Food and Drug Administration objective endpoint measurements and also conducted various Phase 1 clinical trials for delafloxacin in preparation for Phase 3 clinical trials anticipated to begin in the second half of 2012. During 2011, we completed a Phase 1 clinical trial for radezolid with an IV formulation and a long-term preclinical study of radezolid to further evaluate its safety. The overall $18.8 million increase in research and development expenses during 2011 as compared to 2010 also included a $0.1 million decrease in personnel costs resulting from a slight decrease in headcount and a $0.4 million increase in travel and other costs.

General and Administrative Expenses

The following table summarizes our general and administrative expenses for the years ended December 31, 2010 and 2011:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2010	2011		
	(In thousands, except percentages)			
General and administrative expenses	$5,152	$5,723	$ 571	11%

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The $0.6 million increase in general and administrative expenses from 2010 to 2011 was primarily due to: a $0.4 million decrease in personnel costs resulting from lower executive recruitment and severance costs; a $0.8 million net increase in consulting costs related to increased legal, accounting and tax services, including higher legal costs incurred for the ongoing pursuit of patent protection of our intellectual property, offset by lower business development and investor relation costs; and a $0.2 million increase in travel and other costs.

Interest Income

The following table summarizes our interest income for the years ended December 31, 2010 and 2011:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2010	2011		
	(In thousands, except percentages)			
Interest income	$ 11	$ 14	$ 3	27%

Interest income was essentially unchanged for 2011, as compared to 2010, due to the similar amounts of cash and cash equivalents available for investment during the periods. During both 2010 and 2011, our interest income was not significant due to nominal cash and cash equivalent balances.

Interest Expense

The following table summarizes our interest expense for the years ended December 31, 2010 and 2011:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2010	2011		
	(In thousands, except percentages)			
Cash interest expense:				
Notes payable	$ 261	$ —	$ (261)	(100)%
Convertible notes payable	4,476	7,115	2,639	59%
Sub-total cash interest expense	4,737	7,115	2,378	50%
Non-cash interest expense:				
Convertible notes payable—debt discount amortization	3,845	7,656	3,811	99%
Convertible notes payable—mark-to-market adjustments	1,407	4,392	2,985	212%
Debt issuance costs amortization	246	334	88	36%
Notes payable	55	—	(55)	(100)%
Sub-total non-cash interest expense	5,553	12,382	6,829	123%
Total interest expense	$10,290	$19,497	$ 9,207	89%

The $9.2 million increase in interest expense from 2010 to 2011 was primarily due to: the increase of $2.6 million of cash interest expense resulting from the increase in outstanding convertible notes payable due to the 2011 Financing; an increase of $3.8 million in non-cash interest expense primarily resulting from debt discount amortization of the initial fair values for

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the put rights in connection with the 2010 Financing and 2011 Financing; and an increase of $3.0 million in non-cash interest expense as a result of mark-to-market adjustments of the common stock warrants and put rights, as further described above and under “Fair Values of Change of Control and Liquidation Put Rights” and “Fair Values of Common Stock Warrants.” The increase in non-cash interest expense of $3.0 million resulting from mark-to-market adjustments was primarily due to a $4.4 million aggregate increase in the fair values of the put rights in connection with the 2009, 2010 and 2011 Financings during 2011 as compared to a $2.5 million aggregate increase in 2010. Such increase in 2011 resulted from an increase in the estimated future enterprise values under the various sale/merger scenarios in the PWERM, based on significant changes in the business during the period. These changes included: signing an exclusive, worldwide research collaboration and license agreement with Sanofi; completion of the delafloxacin Phase 2b clinical trial and receipt of top-line data in December 2011 allowing us to plan for the commencement of Phase 3 development in the second half of 2012; and the completion of a radezolid long-term preclinical study which showed favorable evidence of radezolid’s long-term safety profile. Such increases in estimated future enterprise values provided a greater allocation of value to such put rights in the sale/merger scenarios offset by a decrease in the combined total probability from 35% to 30% for the sale/merger scenarios. In addition, during 2011, there was a de minimis negative adjustment to the fair value of the common stock warrants whereas during 2010 there was a $1.1 million decrease in the fair values of such common stock warrants based on the decrease in the common stock value from December 31, 2009 to December 31, 2010. Such decrease in the fair values of such common stock warrants was due to the dilutive effect of the rights and preferences of the put rights and common stock warrants issued in connection with the 2010 Financing. Accordingly, $1.1 million of the increase in interest expense in 2011 as compared to 2010 is attributable to the absence of the reduction in interest expense in 2010 resulting from the decrease in the fair value of such common stock warrants.

Other Income

The following table summarizes our other income for the years ended December 31, 2010 and 2011:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2010	2011		
	(In thousands, except percentages)			
Other income	$1,098	$246	$ (852)	(78)%

The $0.9 million decrease in other income from 2010 to 2011 was primarily the result of our receipt of approximately $1.0 million in 2010 under the QTDP program. Other income for 2010 and 2011 included $0.1 million and $0.2 million, respectively, in connection with Connecticut research and development tax credit exchanges.

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Comparison of the Years Ended December 31, 2009 and 2010

Revenues

We did not record revenue during the years ended December 31, 2009 and 2010.

Research and Development Expenses

The following table summarizes our research and development expenses for the years ended December 31, 2009 and 2010:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2009	2010		
	(In thousands, except percentages)			
Research and development expenses	$17,592	$12,422	$ (5,170)	(29)%

Research and development expenses decreased $5.2 million from 2009 to 2010. The decrease was primarily due to a $4.3 million decrease in outsourced discovery and development costs in connection with delafloxacin, radezolid and our RX-04 program. This decrease was partially due to a $1.5 million milestone payment made to Wakunaga during 2009 for delafloxacin with no corresponding payment during 2010, as well as a decrease in preclinical toxicology studies for delafloxacin. In connection with radezolid, we completed during 2009 a Phase 2 clinical trial for community acquired bacterial pneumonia and there were no further costs incurred during 2010. In addition, there was a decrease in preclinical toxicology studies for radezolid. We increased our discovery activities for our RX-04 program by $0.2 million during 2010 as compared to 2009. The overall $5.2 million decrease in research and development expenses also included: a $1.1 million decrease in personnel costs resulting from a reduction in headcount affected in the second quarter of 2009 and lower stock-based compensation costs in 2010 due to the decrease in our common stock value; offset by a $0.1 million increase in professional and consulting fees in connection with costs for European Union regulatory consulting services; and a $0.1 million increase in travel and other costs.

General and Administrative Expenses

The following table summarizes our general and administrative expenses for the years ended December 31, 2009 and 2010:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2009	2010		
	(In thousands, except percentages)			
General and administrative expenses	$3,888	$5,152	$ 1,264	33%

The $1.3 million increase in general and administrative expenses from 2009 to 2010 was primarily due to: a net increase of $0.6 million in personnel costs including recruitment and severance costs incurred during 2010, offset by lower stock-based compensation costs in 2010 due to the decrease in our common stock value; a $0.5 million increase in consulting costs related to additional accounting and tax services in 2010 as compared to 2009, human resources training efforts during 2010, additional business development and investor relation activities and legal fees during 2010 in connection with the ongoing pursuit of patent protection of our intellectual property, offset by lower board of directors' fees during 2010; and a $0.2 million increase in travel and other costs.

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Interest Income

The following table summarizes our interest income for the years ended December 31, 2009 and 2010:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2009	2010		
	(In thousands, except percentages)			
Interest income	$ 68	$ 11	$ (57)	(84)%

The $0.1 million decrease in interest income for 2010 as compared to 2009 was the result of decreased cash and cash equivalents balances available for investment. During both 2009 and 2010, our interest income was not significant due to nominal cash and cash equivalent balances.

Interest Expense

The following table summarizes our interest expense for the years ended December 31, 2009 and 2010:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2009	2010		
	(In thousands, except percentages)			
Cash interest expense:				
Notes payable	$ 1,055	$ 261	$ (794)	(75)%
Convertible notes payable	2,591	4,476	1,885	73%
Sub-total cash interest expense	3,646	4,737	1,091	30%
Non-cash interest expense:				
Convertible notes payable—debt discount amortization	7,831	3,845	(3,986)	(51)%
Convertible notes payable—mark-to-market adjustments	(4,917)	1,407	6,324	129%
Debt issuance costs amortization	613	246	(367)	(60)%
Notes payable	(221)	55	276	125%
Sub-total non-cash interest expense	3,306	5,553	2,247	68%
Total interest expense	$ 6,952	$10,290	$ 3,338	48%

The $3.3 million increase in interest expense in 2010 as compared to 2009 was primarily due to: an additional $1.9 million in cash interest expense during 2010 on the 2009 Notes and 2010 Notes; a reduction in non-cash interest expense of $4.0 million in connection with debt discount amortization as a result of the lower initial fair values for the put rights and common stock warrants in connection with the 2010 Notes as compared to the 2009 Notes; and an increase of $6.3 million in non-cash interest expense as a result of the mark-to-market adjustments. The increase in non-cash interest expense of $6.3 million resulting from mark-to-market adjustments was primarily due to a $4.2 million decrease in the fair values of the put rights in connection with the 2009 Financing during 2009 as compared to a $2.7 million increase in the fair value of the put rights in connection with the 2010 Financing during 2010. The $4.2 million decrease in the fair value of the put rights in connection with the 2009 Financing during 2009 resulted from the 2010 Financing and related put rights which caused a reduction in value of the put rights in connection with the 2009 Financing as the put rights in connection with the 2010 Financing have

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preference over the put rights in connection with the 2009 Financing. The $2.7 million increase in the fair values of the put rights in connection with the 2010 Financing during 2010 resulted from the increase in the estimated future enterprise values under the various sale/merger scenarios from December 31, 2009 to December 31, 2010 due to positive scientific progress for delafloxacin and the increased probability of completion of an RX-04 collaboration, which allowed for a greater allocation of value to the put rights in the sale/merger scenarios.

Other Income

The following table summarizes our other income for the years ended December 31, 2009 and 2010:

	Years Ended December 31,		Increase (Decrease)	% Increase (Decrease)
	2009	2010		
	(In thousands, except percentages)			
Other income	$160	$1,098	$ 938	586%

The $0.9 million increase in other income in 2010 as compared to 2009 was primarily the result of our receipt of approximately $1.0 million in 2010 under the QTDP program. Other income for 2009 and 2010 included $0.2 million and $0.1 million, respectively, in connection with Connecticut research and development tax credit exchanges.

Liquidity and Capital Resources

We have incurred losses and negative cash flows from operations since our inception in October 2000, and as of December 31, 2011, we had an accumulated deficit of $244.3 million. We 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 public or private equity, debt financings or other sources, such as corporate collaborations and licensing arrangements.

Since our inception in October 2000 through December 31, 2011, we have funded our operations principally through the receipt of $214.9 million from: the private placement of $122.4 million of preferred equity securities; the private placement of $71.0 million of convertible notes payable; funds received under the collaboration with Sanofi of $19.0 million; and receipt of $2.5 million from research grants and government tax credit payments. As of December 31, 2011, we had outstanding principal balances under our convertible notes payable of $71.0 million, accrued interest on convertible notes payable of $14.2 million and cash and cash equivalents of $8.0 million. Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation. Currently, our funds are held in cash and money market accounts.

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Cash Flows

The following table sets forth the major sources and uses of cash and cash equivalents for the years ended December 31, 2009, 2010 and 2011:

	Years Ended December 31,		
	2009	2010	2011
	(In thousands)		
Net cash used in operating activities	$(24,213)	$(16,746)	$(13,677)
Net cash provided by (used in) investing activities	(750)	626	(155)
Net cash provided by financing activities	27,045	7,005	20,443
Net increase (decrease) in cash and cash equivalents	$ 2,082	$ (9,115)	$ 6,611

Net cash used in operating activities. During 2009, 2010 and 2011, our operating activities used cash of $24.2 million, $16.7 million and $13.7 million, respectively. The use of cash in all periods resulted from our net losses adjusted for non-cash items and changes in operating assets and liabilities. The cash used in operating activities of $24.2 million in 2009 was primarily due to a net loss of $28.2 million primarily attributed to research and development activities and interest expense, and decreases in accounts payable and accrued expenses of $2.1 million and $1.3 million, respectively, offset by non-cash interest expense of $3.3 million and an increase in accrued interest of $2.5 million. The cash used in operating activities of $16.7 million in 2010 was primarily due to a net loss of $26.8 million primarily attributed to research and development activities and interest expense, offset by non-cash interest of $5.6 million and an increase in accrued interest of $4.5 million. The cash used in operating activities of $13.7 million in 2011 was primarily due to a net loss of $53.5 million primarily attributed to research and development activities and interest expense, offset by non-cash interest of $12.4 million and increases in accrued interest, accounts payable, accrued expenses and deferred revenue, in connection with our collaboration with Sanofi, of $7.1 million, $2.3 million, $0.8 million and $16.3 million, respectively.

Net cash provided by (used in) investing activities. During 2009, our investing activities used cash of $0.7 million, primarily attributable to purchases in excess of maturities of marketable securities. During 2010, our investing activities provided cash of $0.6 million, and were primarily attributable to maturities in excess of purchases of marketable securities. During 2011, the cash used in investing activities of $0.2 million was a result of the purchase of fixed assets.

Net cash provided by financing activities. During 2009, 2010 and 2011, our financing activities provided net cash of $27.0 million, $7.0 million and $20.4 million, respectively. The cash provided by financing activities of $27.0 million in 2009 was a result of the private placement of $34.9 million of convertible notes payable, net of debt issuance costs, offset by $7.9 million of repayments on borrowings under the credit and security agreement. The net cash provided by financing activities of $7.0 million in 2010 was a result of the private placement of $14.2 million of convertible notes payable, net of debt issuance costs, offset by $7.2 million of repayments on borrowings under the credit and security agreement. The credit and security agreement was paid in full during October 2010. The net cash provided by financing activities of $20.4 million in 2011 was a result of the private placement of $20.7 million of convertible notes payable, net of debt issuance costs, offset by the payment of $0.2 million of deferred IPO costs.

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Future Funding Requirements

We believe that the net proceeds from this offering, together with the proceeds from the February 2012 loan agreement, anticipated payments from the collaboration with Sanofi, and our existing cash and cash equivalents will be sufficient to fund our operations through the first quarter of 2014.

We anticipate that we will continue to incur net losses for the next several years due to expenses for our preclinical studies and clinical trials including to:

- commence two planned Phase 3 trials for delafloxacin for the treatment of ABSSSI in the second half of 2012;
- initiate a Phase 2 study for radezolid in the treatment of ABSSSI and a long-term Phase 1 safety study for radezolid in humans to demonstrate what we believe is a differentiable, long-term safety advantage over Zyvox;
- progress our RX-04 preclinical program, in collaboration with Sanofi, to identify and develop multiple product candidates; and
- advance our RX-05 and RX-06 discovery programs into preclinical and clinical development.

The net proceeds from this offering will not be sufficient to fund our operations through the successful development and commercialization of any of our product candidates. For example, to complete Phase 3 development of delafloxacin, we estimate that our first planned ABSSSI Phase 3 study will cost approximately $ million and our second planned ABSSSI Phase 3 study will cost approximately $ million. As a result, we will need to raise additional capital beyond the proceeds of this offering to fund our operations and continue to conduct clinical trials to support potential regulatory approval of our product candidates, including to commence our second planned Phase 3 trial of delafloxacin for the treatment of ABSSSI and to continue to advance the development of radezolid. To raise additional capital, we intend to seek funding through collaborations or other similar arrangements with third parties. We may also seek to sell additional equity or debt securities, or incur indebtedness. The sale of additional equity and debt securities may result in additional dilution to our stockholders.

While the current terms of the 2009 Notes, 2010 Notes and 2011 Notes state that the lenders have the right to put the debt back to us on or after June 30, 2012, which required that the 2009 Notes, 2010 Notes and 2011 Notes be classified as current in the December 31, 2011 balance sheet, we expect that such notes will instead be automatically converted into shares of common stock immediately prior to the closing of this offering. However, pursuant to a subordination agreement executed in connection with the loan agreement, the holders of the 2009 Notes, 2010 Notes and 2011 Notes cannot demand or receive payment until such time as all amounts due under the February 2012 loan agreement are paid in full in cash, and there is no further commitment on the part of the lender under the loan agreement to lend any further funds to us. Accordingly, with the exception of interest payments totaling approximately $1.0 million due under the February 2012 loan agreement during 2012, we do not anticipate the need for any additional funds to service debt obligations during 2012, as the only outstanding notes payable at December 31, 2011 were the convertible notes payable related to the 2009 Financing, 2010 Financing and 2011 Financing. We have based this estimate on the assumption that there are no events of default or a Material Adverse Change under the February 2012 loan agreement, as well as other assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. There can be no assurance that this offering will become effective or that any securities will be sold pursuant to it. If we are unable to raise sufficient additional capital, we may need to substantially curtail our planned operations.

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Our forecasts of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement and involves risks and uncertainties, and actual results could vary as a result of a number of factors, including the factors discussed in "Risk Factors."

Because of the numerous risks and uncertainties associated with preclinical and clinical development, and given the early stage of our discovery programs, we are unable to estimate or know the nature of the efforts, specific timing or estimated costs that will be necessary to complete the development of our product candidates. Our future funding requirements, both short-term and long-term, will depend on numerous forward-looking factors, including, but not limited to:

- the initiation, progress, timing, costs and results of preclinical studies and clinical trials for our product candidates and potential product candidates, including initiation of Phase 3 development for delafloxacin;
- the success of our collaboration with Sanofi and receipt of milestones and royalty payments, if any, thereunder;
- the number and characteristics of product candidates that we pursue;
- the outcome, timing and costs of regulatory approvals;
- 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;
- the costs and timing of completion of commercial-scale outsourced manufacturing activities;
- the costs of establishing sales, marketing and distribution capabilities for any product candidates for which we may receive regulatory approval;
- the timing, receipt and amount of any sales, or royalties on, our product candidates, if any; and
- the terms and timing of any future collaborative, licensing or other arrangements that we may establish.

Our cash and cash equivalent balances as of December 31, 2011, significant debt outstanding and recurring losses from operations raise substantial doubt about our ability to continue as a going concern. As a result, our independent registered public accounting firm included an explanatory paragraph in its report on our financial statements as of and for the year ended December 31, 2011 with respect to this uncertainty. However, our financial statements have been prepared assuming we will continue to operate as a going concern, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. If we became unable to continue as a going concern, we could be unable to continue operations and could have to liquidate our assets.

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Contractual Obligations

The following table summarizes our contractual obligations as of December 31, 2011 and the effect such obligations are expected to have on our liquidity and cash flow in future years.

	Payment by Period				
	Total	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years
			(In thousands)		
Operating leases (1)	$ 2,048	$ 560	$ 1,488	$ —	$ —
Convertible notes payable (2)	71,033	—	—	71,033	—
Accrued interest on convertible notes payable (2)	59,565	—	—	59,565	—
Total (3)	$132,646	$ 560	$ 1,488	$130,598	$ —

(1) Our share of operating expenses under our facility lease agreement is excluded.

(2) The convertible notes payable and accrued interest on convertible notes payable relate to the 2009 Financing, 2010 Financing and 2011 Financing. The amended terms of the 2009 Notes provide that unless previously converted or repaid, principal and interest shall become due and payable on the later of (i) January 8, 2014 and (ii) the 91st day following the earlier of (y) January 10, 2016 and (z) the date of payment or conversion in full of the 2011 Notes. The amended terms of the 2009 Notes also provide that upon a vote by the holders of 2009 Notes representing 60% of the outstanding principal amount of all 2009 Notes, the holders of the 2009 Notes can demand repayment on or after June 30, 2012, provided there are no 2011 Notes or 2010 Notes outstanding. The amended terms of the 2010 Notes provide that unless previously converted or repaid, principal and interest shall become due and payable on the later of (i) May 28, 2015 and (ii) the 91st day following the earlier of (y) January 10, 2016 and (z) the date of payment or conversion in full of the 2011 Notes. The amended terms of the 2010 Notes also provide that upon a vote by the holders of 2010 Notes representing a majority of the outstanding principal amount of all 2010 Notes, the holders of the 2010 Notes can demand repayment on or after the earlier of (i) June 30, 2012, provided there are no 2011 Notes outstanding, and (ii) the date on which we enter into an exclusive product licensing transaction providing at least $30.0 million in upfront net cash proceeds to us. The terms of the 2011 Notes provide that unless previously converted or repaid, principal and interest on the 2011 Notes shall become due and payable five years from the date of issuance. The terms of the 2011 Notes also provide that upon a vote by the holders of 2011 Notes representing a majority of the outstanding principal amount of all 2011 Notes, the holders of the 2011 Notes can demand repayment on or after the earlier of (i) June 30, 2012 and (ii) the date on which we enter into an exclusive product licensing transaction providing us with at least $30.0 million in upfront net cash proceeds. However, pursuant to a subordination agreement executed in connection with the February 2012 loan agreement, the holders of the 2009 Notes, 2010 Notes and 2011 Notes cannot demand or receive payment until such time as all amounts due under the February 2012 loan agreement are paid in full in cash, and there is no further commitment on the part of the lender under the loan agreement to lend any further funds to us. The amounts for the convertible notes payable and accrued interest on convertible notes payable in the table above are classified based on the stated maturity dates, and therefore do not reflect the earlier put dates of June 30, 2012.

(3) The amounts in the table above exclude the principal and interest payments due under the loan agreement entered into in February 2012.

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The table above reflects only payment obligations that are fixed and determinable. We enter into contracts in the normal course of business with CROs for clinical trials and clinical supply manufacturing, and with vendors for preclinical research studies, research supplies and other services and products for operating purposes. These contracts generally provide for termination on notice, and therefore we believe that our non-cancelable obligations under these agreements are not material. Milestone payments and royalty payments under our license agreements are not included in the table above because we cannot, at this time, determine when or if the events triggering the commencement of payment obligations will occur.

Off-Balance Sheet Arrangements

Since inception, we have not engaged in the use of off-balance sheet arrangements, such as structured finance, special purpose entities or variable interest entities.

Recently Issued Accounting Pronouncements

In October 2009, the FASB issued ASU 2009-13. ASC Topic 605-25 previously required companies to allocate revenue based on the fair value of each deliverable even though such deliverables may not be sold separately either by the company itself or other vendors. ASU 2009-13 eliminates (i) the residual method of revenue allocation and (ii) the requirement that all undelivered elements must have objective and reliable evidence of fair value before a company can recognize the portion of the overall arrangement fee that is attributable to items that already have been delivered. Allocation of consideration is now based on management's best estimate of the selling price for an undelivered item where there is no other means to determine the fair value of that undelivered item. This revised accounting standard was effective prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010. We adopted this guidance as of January 1, 2011 and it was applicable to the Sanofi collaboration and license agreement we entered into in 2011.

In April 2010, the FASB amended ASU 2010-17, which provides guidance on the milestone method of revenue recognition for research or development arrangements. Under the amended ASU 2010-17, an entity can make an accounting policy election to recognize a payment that is contingent upon the achievement of a substantive milestone in its entirety in the period in which the milestone is achieved. The milestone method is not required and is not the only acceptable method of revenue recognition for milestone payments. This amended standard was effective prospectively for milestones achieved during annual and interim reporting periods beginning on or after June 15, 2010. Early application is permitted. We adopted this guidance as of January 1, 2011 and it was applicable to the Sanofi collaboration and license agreement we entered into in 2011.

In May 2011, the FASB issued ASU No. 2011-04, "Fair Value Measurement: Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs" (ASC Topic 820). This newly issued accounting standard clarifies the application of certain existing fair value measurement guidance and expands the disclosures for fair value measurements that are estimated using significant unobservable (Level 3) inputs. This ASU is effective on a prospective basis for annual and interim reporting periods beginning on or after December 15, 2011. Early application is not permitted. We will adopt this amended guidance for the fiscal year beginning January 1, 2012.

Other accounting standards that have been issued or proposed by the FASB or other standards-setting bodies that do not require adoption until a future date are not expected to have a material impact on our financial statements upon adoption.

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Quantitative and Qualitative Disclosures about Market Risk

Our cash and cash equivalents as of December 31, 2011 consisted primarily of cash and money market accounts. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of United States interest rates. However, because of the short-term nature of the instruments in our portfolio, a sudden change in market interest rates would not be expected to have a material impact on our financial condition and/or results of operation. The interest rates on our convertible notes payable are fixed and therefore not subject to interest rate risk. We do not have any foreign currency or other derivative financial instruments.

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BUSINESS

Overview

We are a biopharmaceutical company developing new antibiotics to provide superior coverage, safety and convenience for the treatment of serious and life-threatening infections. Our proprietary drug discovery platform, which is based on Nobel Prize-winning science, provides an atomic-level, three-dimensional understanding of interactions between drug candidates and their bacterial targets and enables us to systematically engineer antibiotics with enhanced characteristics. Our most advanced product candidate, delafloxacin, is intended for use as an effective and convenient first-line therapy primarily in hospitals prior to the availability of a specific diagnosis. Unlike currently available first-line treatments, delafloxacin has the potential to offer broad-spectrum coverage as a monotherapy for serious Gram-negative and Gram-positive bacterial infections, including for methicillin-resistant *Staphylococcus aureus*, or MRSA, with both intravenous and oral formulations. Delafloxacin has completed four Phase 2 clinical trials, including a Phase 2b clinical trial for the treatment of acute bacterial skin and skin structure infections, or ABSSSI. We have received results from this Phase 2b trial and plan to commence the first of two planned Phase 3 trials for the treatment of ABSSSI in the second half of 2012. The timing of our second planned Phase 3 clinical trial will depend upon obtaining additional funding beyond the proceeds of this contemplated offering. Based on our current expectations regarding the availability of such funding and subject to the results of these two trials, we anticipate submitting a New Drug Application for delafloxacin for the treatment of ABSSSI as early as the fourth quarter of 2014 and for additional indications thereafter. Our second product candidate, radezolid, is a next-generation, IV/oral oxazolidinone designed to be a potent antibiotic with a safety profile permitting long-term treatment of resistant infections, including those caused by MRSA. We have completed two Phase 2 clinical trials of radezolid. We are also pursuing development of RX-04, our preclinical program partnered with Sanofi, S.A., which has produced new classes of antibiotics that attach to a location on the bacterial ribosome to which no other approved class of antibiotics bind, and are designed to combat the most difficult-to-treat, multi-drug resistant Gram-positive and Gram-negative bacteria. Because its protein building function is essential for the life of infection-causing bacteria, the bacterial ribosome is the target of most marketed antibiotics, which work by binding to the ribosome and inhibiting its function. In addition, our pipeline includes RX-05, an antibacterial discovery program, and RX-06, an antifungal discovery program, both of which target newly discovered binding sites within ribosomes.

We believe one of our key competitive advantages is our focus on the three-dimensional properties of antibiotics, which is enabled by our proprietary drug discovery platform. Unlike traditional approaches to antibiotic discovery, which generally rely on random screening of chemical libraries to identify potential compounds, our discovery team utilizes sophisticated, customized computer software to simulate and predict in three-dimensions both inter- and intra-molecular reactions and resulting properties of compounds including absorption, distribution, metabolism, excretion and toxicology. We combine these exclusive computational tools with our patent-protected, atomic-level insights into the structure of the ribosome to systematically engineer novel antibiotics to avoid resistance and optimize potency, spectrum, efficacy and safety. As a result, we have created a highly efficient and productive drug development engine based on our unique design strategy that effectively leverages structure-based drug design, preparative medicinal chemistry, ribosome biochemistry, molecular biology and pharmacology.

The Antibiotic Market

Background

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 Centers for Disease Control, or CDC, and the Infectious Disease Society of America, or IDSA. Antibiotic resistance has limited the effectiveness of existing drugs, and the discovery of new

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antibiotics to deal with resistance has not kept pace with the increasing incidence of difficult-to-treat microorganisms. *Staphylococcus* skin and soft tissue infections in the United States alone accounted for on average nearly 12 million physician and emergency department visits annually in the years from 2001 to 2003 according to the CDC. In addition, the IDSA estimated in 2004 that nearly two million infections are developed in the hospital setting annually in the United States, resulting in the deaths of 90,000 patients each year. Of these infections, 70% are caused by bacteria that are resistant to one or more antibiotics used to treat them, including those caused by MRSA. The CDC estimated that MRSA alone caused 94,000 life-threatening infections and almost 19,000 deaths in 2005 in the United States, exceeding the number of deaths caused by HIV/AIDS during the same time period. We estimate that the use of antibiotics to treat MRSA has increased at a compounded annual growth rate of 18% for the years from 2005 to 2009 and is forecasted to continue growing through 2019. In April 2011, IDSA issued a report published in *Clinical Infectious Diseases* warning that unless significant measures are taken now to increase the pipeline of new antibiotics active against drug resistant infections, 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.

Bacterial infections are caused by a variety of different types of bacteria that attack the body as they enter through the skin, lungs, nasal passages or gastrointestinal tract, and are not controlled by the body's immune system. They 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 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*, *Enterobacter* and *Pseudomonas*. Atypical bacteria, such as *Legionella* 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.

According to the CDC, many strains of bacteria have mutated over time to develop resistance to existing drugs, resulting in increasingly serious and more difficult to treat infections, and the rates of infections caused by single- or multi-drug resistant microorganisms continue to rise globally. Based on U.S. data from *Clinical Infectious Diseases* and Canadian data from *Antimicrobial Agents and Chemotherapy*, we estimate that approximately 30% of these infections contain multiple strains of bacteria, including Gram-positive and Gram-negative strains. The CDC estimates that the extra cost to the U.S. health care system in 2009 from health care associated infections ranged between $36 and $45 billion annually after adjusting to 2007 dollars using the Consumer Price Index for inpatient hospital services. According to the CDC, approximately 60% of certain common resistant infections acquired during hospital stays are caused by MRSA. Another resistant Gram-positive infection, vancomycin-resistant *enterococci*, or VRE, has also become increasingly common. According to the CDC, from 1990 to 2003, the prevalence of VRE in *enterococcal* isolates from hospitalized patients increased from less than 1% to approximately 29%. While the CDC has found that MRSA remains the single most common resistant bacterial infection, and MRSA and VRE together constitute a significant majority of resistant bacterial infections, resistant Gram-negative infections are also rapidly increasing. For example, according to the CDC, in 1997, the SENTRY Antimicrobial Surveillance Program found that among *Klebsiella pneumoniae* strains isolated in the United States,

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resistance rates to ceftazidime and other third-generation cephalosporins were 7%, 10%, 5%, and 4% for bloodstream, pneumonia, wound, and urinary tract infections, respectively. However, by 2003, 21% of all *Klebsiella pneumoniae* isolates from intensive care units included in the National Nosocomial Infections Surveillance System were resistant to these drugs. In addition, Gram-negative strains of *Acinetobacter*, *Enterobacter* and *Pseudomonas* are particularly life threatening, having mortality rates, according to Datamonitor, of 34%, 27% and 39%, respectively, as of 2004.

Antibiotics are also characterized by their basic molecular structure, which is known as their antibiotic "class". Of the more than 20 different classes of antibiotics, only two new classes of hospital antibiotics have been commercialized in the last 40 years. Antibiotics are primarily differentiated based on their potency and effectiveness against particular strains of bacteria as well as the spectrum of bacterial strains against which they are active. For example, broad-spectrum antibiotics are active against both Gram-positive and Gram-negative bacteria and narrow-spectrum antibiotics are usually active against only a select subset of Gram-positive or Gram-negative bacteria. Because it usually takes from 24 to 48 hours to definitively diagnose a particular bacterial infection, effective first-line treatment in hospital emergency departments of serious infections requires the use of antibiotics with broad-spectrum coverage, including coverage of MRSA, until the bacterial infection can be diagnosed. In general, while physicians generally prefer narrower spectrum antibiotics once a pathogen has been identified, they will typically continue with broad-spectrum treatment to conclusion if a patient's infection is improving. Other important characteristics in distinguishing among antibiotics include their safety and tolerability, the frequency and route of administration of their dosing and their likelihood of developing resistant bacterial strains.

Market Opportunity

According to Datamonitor, in the seven major pharmaceutical markets, which consist of the United States, Japan, the United Kingdom, Germany, France, Italy and Spain, antibiotic product sales totaled approximately $20 billion in 2009 and, within the hospital market, approximately $8 billion was generated from antibiotic sales in 2006. Based on data published by third party investment research providers, in 2009, the global market for products targeting MRSA was approximately $2.6 billion and the total *Staphylococcal* market was approximately $3 billion. Based on data from public filings with the Securities and Exchange Commission, as well as data from third party investment research providers, we estimate that in 2011, sales in the United States of major antibiotics, such as vancomycin, daptomycin, marketed as Cubicin, and linezolid, marketed as Zyvox, which are designed to treat serious infections caused by resistant Gram-positive bacteria like MRSA, amounted to approximately $1.6 billion. Based on data provided by GlobalData for the U.S. pharmaceutical market and the global pharmaceutical market, we estimate that the use of antibiotics to treat MRSA has increased at a compounded annual growth rate of 18% for the years between 2005 and 2010 and is forecasted to continue growing through 2017. There have been no new classes of antibiotics approved with broad-spectrum coverage or to treat multi-drug resistant Gram-negative pathogens in the last 20 years.

The most widely prescribed antibiotics currently used by hospitals to treat multi-drug resistant infections, such as MRSA and Gram-negative bacteria, include:

- ***Vancomycin***. The current first-line standard of care in hospital emergency rooms for serious infections is an antibiotic cocktail consisting of vancomycin, a generic intravenous, or IV, therapy, and a Gram-negative therapy. Vancomycin is also used as focused therapy for certain Gram-positive infections. According to GlobalData, in 2010,

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vancomycin generated sales of approximately $144 million in the United States and represented the majority of courses prescribed. Vancomycin is associated with allergic reactions and can cause kidney damage, or renal toxicity, loss of balance, or vestibular toxicity, and loss of hearing, or oto-toxicity in certain patients. The rise of vancomycin-resistant bacterial strains in recent years, such as VRE, vancomycin intermediate-resistant *Staphylococcus aureus*, or VISA, and vancomycin-resistant *Staphylococcus aureus*, or VRSA, has also reduced the drug's usefulness. These limitations of vancomycin are increasingly requiring a second-line treatment such as Zyvox (linezolid) or Cubicin (daptomycin) and additional days spent in the hospital.

- ***Zyvox***. Zyvox (linezolid), a twice-per-day IV/oral oxazolidinone, is a leading antibiotic for serious Gram-positive infections, including MRSA. It is used predominantly as a second- or third-line treatment and as a branded treatment alternative to vancomycin for resistant Gram-positive infections. In 2011, Pfizer Inc. reported Zyvox sales of $1.3 billion worldwide, including $640 million in the United States. Zyvox requires active monitoring for use beyond two weeks of therapy due to the potential for significant adverse side effects, including bone marrow suppression, or myelosuppression, and nerve damage, or neurotoxicity. Zyvox use has been associated with drug resistance, including increased incidence of Zyvox-resistant *Staphylococcus aureus*, or ZRSA, and Zyvox-resistant *enterococci*, or ZRE. Zyvox is also a narrow-spectrum drug, which prevents its use as a monotherapy for the first-line treatment of serious bacterial infections. In addition, Zyvox is contraindicated for use in people taking monoamine oxidase inhibitors, a class of drugs formerly commonly used as anti-depressants, and should not be used without careful observation in people taking selective serotonin reuptake inhibitors, a class of drugs commonly used as anti-depressants, among other uses. We believe that these issues will continue to limit the use of Zyvox, as well as any generic form of linezolid available in the future.
- ***Cubicin***. Cubicin (daptomycin), a lipopeptide, is another common antibiotic used as a second-line treatment and as a branded treatment alternative to vancomycin for infections due to resistant Gram-positive bacteria, particularly MRSA. In 2011, Cubist Pharmaceuticals, Inc. reported net revenues in the United States of $699 million for Cubicin. Cubicin is only available in an IV form and requires regular laboratory monitoring for toxic side effects in certain patients. Cubicin is also not indicated for the treatment of lung infections. In addition, bacterial resistance to Cubicin is increasing.
- ***Tygacil***. Tygacil (tigecycline), an IV-only glycylcycline, a sub-class of tetracyclines, was approved by the FDA in June 2005. Tygacil is a broad-spectrum antibiotic with coverage of resistant Gram-positive bacteria, such as MRSA, and Gram-negative bacteria, such as *E. coli*. Tygacil is generally utilized as a third- or fourth-line antibiotic due to its greater risk of mortality as compared to the active comparators in its clinical studies and high rates of vomiting and nausea. According to Pfizer, Tygacil generated sales of $298 million globally, including $148 million in the United States in 2011.

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Our Strategy

Our objective is to discover, develop and commercialize best-in-class and new classes of anti-infectives with superior coverage, safety and convenience to provide new standards of care for patients with serious and life-threatening infections. The critical components of our business strategy are:

- ***Complete the clinical development of delafloxacin.*** We plan to commence the first of two planned Phase 3 trials for the treatment of ABSSSI in the second half of 2012. The timing of our second planned Phase 3 clinical trial will depend upon obtaining additional funding beyond the proceeds of this contemplated offering. Based on our current expectations regarding the availability of such funding and subject to the results of these two trials, we anticipate submitting applications for marketing approval to the U.S. Food and Drug Administration, or FDA, and European Medicines Agency, or EMA, as early as the fourth quarter of 2014. We also intend to seek approval for additional indications for delafloxacin, including CABP and cIAI.
- ***Advance the clinical development of radezolid***. We have successfully completed Phase 2 studies with an oral formulation of radezolid in uncomplicated skin and skin structure infections, or uSSSI, and in CABP. Subject to obtaining sufficient additional funding beyond the proceeds of this contemplated offering, we intend to initiate a Phase 2 study for the treatment of ABSSSI and a Phase 1 long-term safety study in humans to demonstrate what we believe is a long-term safety advantage over Zyvox. Following these studies, we also intend to perform additional clinical trials of radezolid in ABSSSI and CABP and for indications that require long-term treatment, such as osteomyelitis and prosthetic and joint infections, including as a result of orthopedic surgery.
- ***Advance the development of multiple product candidates from our RX-04 program through our collaboration with Sanofi.*** We intend to work with Sanofi under our collaboration agreement to identify and develop multiple RX-04 product candidates. In addition to the development and commercial milestone payments for which we are eligible for each RX-04 product candidate, we intend to exercise our right to co-commercialize one RX-04 product of our choosing in the United States. We expect that the product candidates that emerge from the RX-04 program will target a variety of uses, including the treatment of the most deadly and difficult-to-treat, multi-drug resistant Gram-positive and Gram-negative pathogens.
- ***Leverage our discovery platform to continue to expand our pipeline of anti-infective product candidates.*** We intend to continue to pursue active discovery programs using our proprietary platform to identify new binding sites within the ribosome and additional product candidates with broad-spectrum efficacy and safety to combat resistance mechanisms. In particular, we intend to demonstrate evidence of potency, enabling lead identification and optimization in our RX-05 antibiotic program and our RX-06 antifungal program in 2012.
- ***Build in-house commercialization capabilities in the United States and opportunistically seek partners for the commercialization of our drug candidates outside of the United States***. We have retained worldwide rights to our drug discovery platform and all of our drug discovery and development programs other than the RX-04 program, where we maintain U.S. co-commercialization rights for one product candidate of our choosing. Outside of the United States, we expect to seek strategic partnerships for the further development and commercialization of our product candidates, including delafloxacin and radezolid. We also intend to explore additional funded collaborations leveraging our drug discovery platform.

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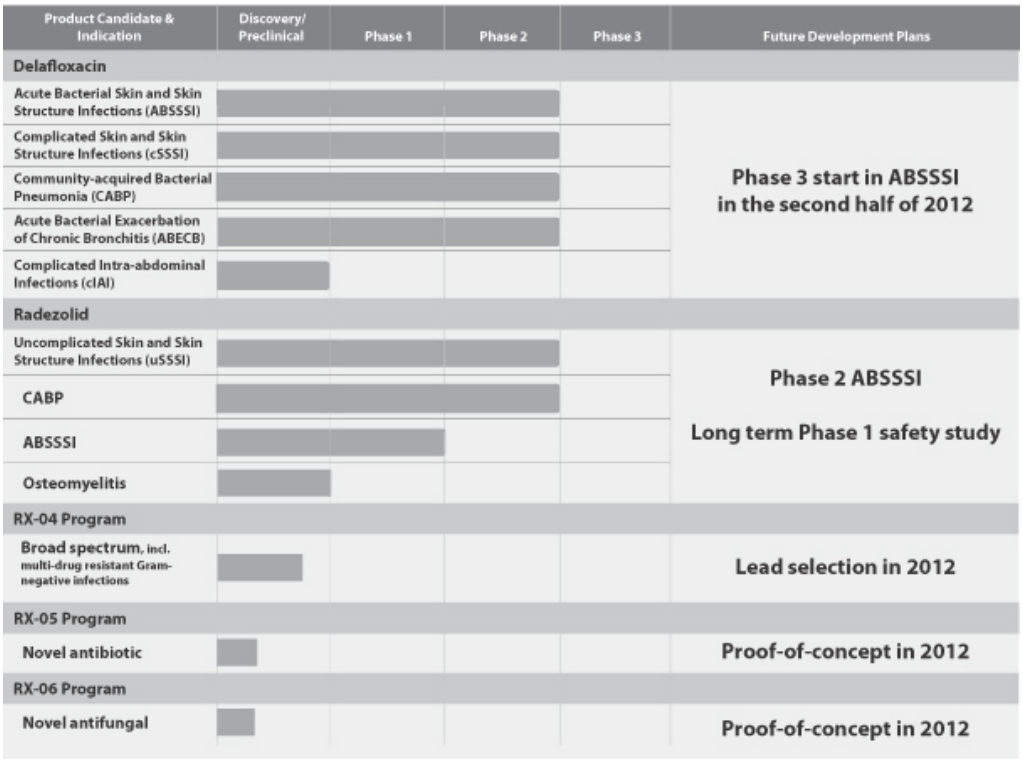
Our Product Candidates

Our unique drug discovery approach serves as the foundation for our pipeline of clinical and earlier-stage product candidates, set forth below, that we believe can address the significant unmet needs for new antibiotics that represent new treatment paradigms.



Delafloxacin

Our most advanced product candidate, delafloxacin, is intended for use as an effective and convenient first-line antibiotic primarily in hospitals prior to the availability of a specific diagnosis. Unlike current first-line treatments, delafloxacin has the potential to offer broad-spectrum coverage as a monotherapy, including for MRSA, with both IV and oral formulations. The IV-to-oral switch offered by delafloxacin should provide patient convenience and pharmacoeconomic benefits for maintaining this monotherapy. With the exception of Zyvox, all other currently approved treatments for MRSA offer only IV delivery. Delafloxacin has been in four Phase 2 trials where it has shown promising results for the treatment of lung infections, including pneumonia and bronchitis, and skin infections. We believe that delafloxacin could treat many serious infections successfully and thus reduce the need for a switch to a narrow-spectrum therapy, because physicians are less likely to switch if the broad-spectrum treatment is proving effective.

We have received results from our Phase 2b clinical trial of delafloxacin for the treatment of ABSSSI, including infections caused by MRSA. This study, comparing delafloxacin to each of

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Zyvox and vancomycin, enrolled 256 subjects with ABSSSI. We expect to commence the first of two planned Phase 3 clinical trials of delafloxacin for the treatment of ABSSSI in the second half of 2012 under a protocol that we intend to submit to the FDA for evaluation under the Special Protocol Assessment, or SPA, process, and also to the EMA. The timing of our second planned Phase 3 clinical trial will depend upon obtaining additional funding beyond the proceeds of this contemplated offering. Based on our current expectations regarding the availability of such funding and subject to the results of these two trials, we anticipate submitting a New Drug Application for ABSSSI as early as the fourth quarter of 2014 and applications for additional indications thereafter.

Delafloxacin has been shown in *in vitro* testing to be more potent against MRSA than the current standard of care, first-line MRSA treatment, vancomycin, and comparable in potency to Zyvox, Cubicin and Tygacil, the current leading second-line treatments for MRSA. Based on data from public filings with the Securities and Exchange Commission, as well as data from third party investment research providers, total combined U.S. sales of Zyvox, Cubicin, vancomycin and Tygacil were approximately $1.6 billion in 2011. These compounds are predominantly used to treat MRSA or ABSSSI. Vancomycin is the most commonly used of any of these drugs and is prescribed as a first-line treatment for *Staphylococcal* infections or as part of a broad-spectrum cocktail when combined with a Gram-negative focused compound such as cefepime.

Over 1,300 subjects have received delafloxacin in clinical trials to date and it has been generally well tolerated. In studies to date, we have seen no myelosuppression, such as reported with the use of Zyvox, nor have we seen any adverse effects on muscles, which has been reported with the use of Cubicin and has resulted in required weekly monitoring of all patients taking Cubicin. In addition, delafloxacin targets with equal potency two key enzymes found within bacteria, thereby decreasing the probability of resistance. These attributes, combined with delafloxacin's potential as a monotherapy and opportunity for a convenient IV-to-oral switch, provide a significant opportunity for widespread use of delafloxacin as a cost-effective, first-line treatment of serious Gram-positive and Gram-negative infections primarily in hospitals.

Differentiating Attributes

Key attributes differentiating delafloxacin from currently available antibiotics include:

- *Increased potency at infection site*. Delafloxacin's unique three-dimensional structure and electronic charge distribution enables enhanced potency in acidic environments, such as are common at the site of infection. Our *in vitro* testing suggests that delafloxacin becomes up to 32 times more potent in acidic environments than in normal pH environments within the human body, in contrast to many other antibiotics which become progressively less potent, as measured by the changes in their minimum inhibitory concentration, or MIC, a measure of antibacterial potency. Moreover, delafloxacin kills bacteria more rapidly than Zyvox, Tygacil and vancomycin according to the *Journal of Chemotherapy* and the *Journal of Antimicrobial Chemotherapy*.
- *Expanded spectrum agent.* In addition to strong Gram-positive potency, including against MRSA, delafloxacin has shown excellent *in vitro* activity against most Gram-negative bacteria commonly found in the hospital setting, as well as against atypical and anaerobic pathogens. As a result of this expanded broad-spectrum coverage, delafloxacin has the potential to be used as a first-line monotherapy for ABSSSI, bacterial pneumonias, aspiration pneumonias, complicated intra-abdominal infections, or cIAI, and complicated urinary tract infections.
- *Favorable safety profile.* Over 1,300 subjects have received delafloxacin in clinical trials to date and it has been generally well tolerated. The common adverse events observed in clinical trials of delafloxacin were nausea, diarrhea, vomiting, pruritus, fatigue, headache, dizziness, infusion site pain, insomnia, constipation, rhinitis and dry mouth. In addition, delafloxacin has not shown a propensity for the toxicities that have been

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common in the fluoroquinolone class of antibiotics, such as sensitivity to light, or phototoxicity, impaired glucose regulation, or dysglycemia, and QT prolongation, a condition that may lead to or cause heart rhythm irregularities. In a Phase I study, unlike other approved fluoroquinolones, delafloxacin showed no propensity to stimulate alterations in the QT interval. Further, delafloxacin has not exhibited the significant side effects associated with the leading MRSA treatments. Active monitoring of Zyvox usage is required for use beyond two weeks of therapy due to the potential for adverse events such as myelosuppression and neurotoxicity. Vancomycin's usage is limited by its side effect profile, including renal toxicity, vestibular toxicity, oto-toxicity and allergic reactions. Cubicin's potential to cause adverse muscle effects requires weekly monitoring in all patients of creatine phosphokinase, or CPK, an enzyme that leaks out of damaged muscle cells. Tygacil's side effect profile includes nausea, vomiting and an increased risk of mortality observed across all clinical studies.

- *Convenient IV-to-oral switch*. We are developing both IV and oral formulations of delafloxacin to enable patients who begin IV treatment in the hospital setting to transition to oral dosing for more convenient home-based care. We refer to this transition from IV treatment to oral dosing, which has the potential to lower the overall cost of treatment and reduce the length of hospital stays, as the IV-to-oral switch. We believe this IV-to-oral switch has the potential to increase patient convenience, lower the overall cost of treatment and reduce the length of hospital stays.
- *Lower probability of bacterial resistance*. Delafloxacin equally targets two enzymes found within bacteria, known as topoisomerase IV and DNA gyrase. Our *in vitro* testing has shown that this ability to target both of these enzymes requires multiple mutations in both enzymes to produce resistance, which we believe reduces the probability of resistance to delafloxacin. In clinical trials to date, we have not seen the development of bacterial resistance to delafloxacin.

The common adverse events observed in clinical trials of delafloxacin were nausea, diarrhea, vomiting, pruritus, fatigue, headache, dizziness, infusion site pain, insomnia, constipation, rhinitis and dry mouth. Three patients receiving delafloxacin in our clinical trials have had serious adverse events that were thought by the investigator to be possibly related to delafloxacin therapy. One patient with a previously non-disclosed recent onset seizure disorder had a further seizure on delafloxacin. One patient with a complicated medical history was hospitalized with abdominal pain and diarrhea. A third patient had a single episode of mouth swelling and shortness of breath.

Our Phase 2b Trial in ABSSSI

We have received results from our Phase 2b clinical trial designed to compare the efficacy of delafloxacin for the treatment of ABSSSI, including infections caused by MRSA to Zyvox (linezolid), with and without aztreonam, and vancomycin, with and without aztreonam. Delafloxacin met primary and secondary efficacy endpoints evaluated to date, including endpoints based on the draft guidance from the FDA in ABSSSI. Of note, although this Phase 2b trial was not designed to demonstrate statistical significance, for the primary endpoint of Investigators' Global Assessment of Cure, delafloxacin demonstrated a statistically significant efficacy advantage as compared to vancomycin (95% Confidence Interval -30.3%, -2.3%; p=0.031). Additionally, delafloxacin demonstrated numerical benefit over both Zyvox and vancomycin in the secondary endpoint, cessation of lesion spread and absence or resolution of fever at 48 to 72 hours, with cure rates of approximately 78%, 75%, and 73%, respectively. Furthermore, delafloxacin showed that a greater percentage of patients experience a 30% or greater reduction in the size of the lesion at 48 to 72 hours than either comparator. Based on this analysis and other data, we believe delafloxacin has demonstrated a level of efficacy that strongly supports our planned initiation of a Phase 3 study of delafloxacin in the second half of 2012.

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Phase 2b ABSSSI Results

Delafloxacin (300 mg BID) versus Zyvox (600 mg BID) and vancomycin (1,000 to 2,000 mg BID)

	Investigators' Global Assessment of Cure(1)		
	Delafloxacin	Zyvox (with and without Aztreonam)	Vancomycin (with and without Aztreonam)
Response Rate	57/81	50/77	53/98
Percent Clinical Cure (ITT(2))	70.4%	64.9%	54.1%

(1) The differential between the cure rates of delafloxacin and vancomycin is statistically significant (95% Confidence Interval -30.3%, -2.3%; p=0.031).
(2) ITT—Intent to Treat

	Investigators' Global Assessment of Cure in Patients with Confirmed MRSA		
	Delafloxacin	Zyvox (with and without Aztreonam)	Vancomycin (with and without Aztreonam)
Response Rate	19/29	21/34	21/32
Percent Clinical Cure (MITT(1))	65.5%	61.8%	65.6%

(1) MITT—Microbiological Intent to Treat

	Objective Endpoint at 48 to 72 hours(1)		
	Delafloxacin	Zyvox (with and without Aztreonam)	Vancomycin (with and without Aztreonam)
Response Rate	61/78	56/75	69/95
Percent Cessation of Spread of Erythema and Absence of Fever at 48 to 72 Hours	78.2%	74.7%	72.6%

(1) Objective efficacy measure proposed by FDA in Draft Guidance for Drug Development in ABSSSI in 2010.

Overall adverse event rates were statistically equivalent across the study for delafloxacin (74%), Zyvox (72%) and vancomycin (65%). The leading adverse event associated with delafloxacin was gastrointestinal, or GI, disorder with mild to moderate diarrhea as the most common specific event. The other common adverse events in this trial were nausea, vomiting, fatigue, headache, dizziness and infusion site pain. The leading adverse event for Zyvox was also GI disorder, with the most common specific event being nausea. The leading adverse event for vancomycin was disorders of the skin, with the most common specific event being pruritus, or itching. In the Zyvox arm, two subjects experienced thrombocytopenia. In the vancomycin arm, three patients experienced renal issues, including two renal failures. Importantly, as observed in earlier Phase 2 studies, delafloxacin did not demonstrate evidence for the toxicities that have been common in the fluoroquinolone class of antibiotics, such as phototoxicity, elevated liver enzymes, dysglycemia and QT prolongation.

The design of this trial grew out of extensive discussion with the FDA about new clinical trial endpoints at our End-Of-Phase 2 meeting in April 2010, and subsequent discussions during the FDA's review of the trial protocol. The Phase 2b study was a randomized, double-blind comparison of delafloxacin, Zyvox, with and without aztreonam, and vancomycin, with and without aztreonam, using objective efficacy measures to evaluate the relative clinical responses in subjects with ABSSSI; aztreonam was added by the investigator based on the believed or confirmed presence of Gram-negative bacteria. The trial enrolled a total of 256 subjects across 34 centers in the United States. Subjects were randomized into three treatment arms to receive either delafloxacin, 300 mg intravenously every 12 hours, or the recommended dosing for Zyvox

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(600 mg every 12 hours), both with and without aztreonam, or vancomycin (1,000 to 2,000 mg every 12 hours), both with and without aztreonam. The primary endpoint for the study was the Investigators' Global Assessment of Cure. Additionally, a key goal was to assess the utility, variability and measurement techniques of several objective measures of clinical efficacy for use in future clinical trials. Efficacy was evaluated at multiple time points during the study, with a focus on the first five days of administration, through assessments of objective signs and symptoms of infection such as the extent/size of infection, fever, measurement of biochemical markers of inflammation and culture and susceptibility testing of bacterial isolates. We believe that the application of these findings will enable us to optimize the design of our anticipated Phase 3 ABSSSI program.

Summary of Data from Previous Clinical Trials

Three previous Phase 2 studies and 16 Phase 1 studies of delafloxacin have been completed. One of the Phase 2 studies was completed with an IV formulation in complicated skin and skin structure infections, or cSSSI, the former classification of ABSSSI, one was conducted with an oral formulation against community-acquired bacterial pneumonia, or CABP, and one was conducted with an oral formulation against acute bacterial exacerbation of chronic bronchitis, or ABECB. Delafloxacin has been studied in more than 1,300 subjects to date. Across all completed studies, delafloxacin has been shown to be both clinically efficacious and well tolerated. Highlights of the clinical development of delafloxacin to date include:

- An IV formulation of delafloxacin in a Phase 2 clinical trial in cSSSI, in which delafloxacin was compared to tigecycline, showed that delafloxacin was better tolerated with similar efficacy.
- The oral formulation of delafloxacin has demonstrated excellent efficacy in once-daily dosing in Phase 2 clinical trials, for the treatment of CABP and ABECB.
- Phase 1 studies show a low propensity for common fluoroquinolone toxicities such as phototoxicity, QT prolongation and dysglycemia, and no clinical adverse events at the 300 mg dose related to these have been seen in Phase 2 studies of delafloxacin, indicating an excellent safety profile.

Phase 2 Study for Complicated Skin and Skin Structure Infections

We evaluated the IV formulation of delafloxacin in a Phase 2 clinical trial for the treatment of cSSSI. This was a double-blind, multicenter, randomized study of IV delafloxacin compared with IV tigecycline for the treatment of cSSSI. In the trial, as compared to tigecycline, delafloxacin was shown to be better tolerated with similar efficacy. This trial was not designed to demonstrate statistical significance and the results were not statistically significant.

One hundred and fifty male and female patients of at least 18 years of age were randomly assigned to the treatment arms in a 1:1:1 ratio, to one of the following:

- 300 mg of delafloxacin every 12 hours;
- 450 mg of delafloxacin every 12 hours; or
- tigecycline, in a dose of 100 mg initially, followed by 50 mg every 12 hours.

The duration of treatment was five to 14 days, subject to the investigator's clinical judgment.

There were several analysis groups. The intent-to-treat, or ITT, group included all randomized patients who received at least one dose of drug. The clinically evaluable, or CE,

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group was the subset of ITT patients who met key inclusion and exclusion criteria, did not receive confounding antibiotics for other infections, were present for key visits, and had key assessments performed. The microbiologically evaluable, or ME, group were those patients that were clinically evaluable who also had a susceptible microbial pathogen identified at the screening visit, and met other specific criteria. The primary endpoint of this trial was the investigators' assessment of clinical response at the test-of-cure time point in the CE group. The test-of-cure time point was three to five days after the completion of dosing when investigators performed the global clinical assessment of outcome and follow-up cultures for microbiology was obtained.

Response rates, as shown in the table below, were numerically higher in the delafloxacin groups than in the tigecycline group in the ITT, CE, and ME populations. In addition, the eradication rates for baseline pathogen and for baseline MRSA for the ME population were higher in the delafloxacin groups than in the tigecycline group. In the trial, 52% of all pathogens identified in the ME population were MRSA. In susceptibility testing performed on pathogens collected from patients in this study, delafloxacin had the lowest MIC_{90} of the 11 drugs tested. MIC_{90} values, which refer to the minimum concentration of a drug that will inhibit 90% of a pathogen in a particular population, are used as a measure of the level of potential susceptibility of a pathogen to an antibiotic. A lower MIC_{90} number indicates greater potency.

	Response Rates		
Efficacy at Test Of Cure	Delafloxacin 300 mg BID	Delafloxacin 450 mg BID	Tigecycline 100/50 mg BID
Clinical Response Rates			
ITT Response	88% (43/49)	90% (46/51)	82% (41/50)
CE Response	94% (33/35)	93% (37/40)	91% (31/34)
Microbiological Response Rates			
ME Response	97% (30/31)	94% (33/35)	89% (23/26)

The 300 mg dose of delafloxacin was well tolerated in this study and overall better tolerated than tigecycline. None of the patients in the 300 mg group discontinued the study because of an adverse event. Two patients in the 450 mg group discontinued from the study due to adverse events. One patient with a previously undisclosed, untreated and ongoing seizure disorder suffered a seizure during therapy and was discontinued. A second patient had moderately elevated liver enzymes which peaked at three to five times the upper limit of normal, and which returned to normal after discontinuation following ten days of therapy. Bilirubin levels in the second patient remained normal. One patient in this trial had a serious adverse event that was thought by the investigator to be possibly related to delafloxacin therapy. This patient, who had a previously non-disclosed recent onset seizure disorder, had a further seizure on delafloxacin. The common adverse events for delafloxacin in both 300 mg and 450 mg groups were nausea, diarrhea, fatigue, headache, insomnia and constipation.

Phase 2 Study for Community-Acquired Pneumonia

A seven-day oral course of delafloxacin was tested in a double-blind, multicenter, randomized Phase 2 study to determine its safety and efficacy in subjects with CABP. Three hundred nine subjects were randomized to one of three dosing groups: 100 mg, 200 mg or 400 mg delafloxacin once daily for seven days.

The analysis groups were defined as noted above. The primary endpoint of this trial was the investigators' assessment of clinical response rate at the test-of-cure time point in the CE group. Clinical and microbiological response rates are presented in the table below. All doses tested

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showed similar excellent response rates in all of the analysis groups. This trial was not designed to demonstrate statistical significance and the results were not statistically significant. The common adverse events in this trial were nausea, diarrhea and headache.

	Response Rates		
Efficacy at Test of Cure	Delafloxacin 100 mg	Delafloxacin 200 mg	Delafloxacin 400 mg
Clinical Response Rates			
ITT	80% (83/104)	87% (79/91)	87% (90/104)
CE	90% (83/92)	95% (79/83)	93% (90/97)
Microbiological Response Rates			
ME	90% (54/60)	96% (48/50)	94% (47/50)

Phase 2 Study for Acute Bacterial Exacerbation of Chronic Bronchitis.

A five-day oral course of delafloxacin was tested in a double-blind, multicenter, randomized, Phase 2 study to determine its safety and efficacy in subjects with ABECB. The trial also included a treatment arm in which subjects received a seven-day course of levofloxacin tablets, to compare the results of that antibiotic to those of delafloxacin. Two hundred eighty subjects were randomized to one of four dosing groups: 100 mg, 200 mg or 400 mg delafloxacin once daily for five days (QDx5 days) followed by two days of placebo, or 500 mg of levofloxacin once daily for seven days (QDx7 days).

The analysis groups were similar to those defined above. The primary endpoint of this trial was the investigators' global assessment of clinical response rate at the test-of-cure time point in the CE Group. Clinical response rates and microbiological response rates are presented in the table below. There was a trend toward better clinical and microbiological efficacy with the 200 mg and 400 mg delafloxacin groups compared to the 100 mg delafloxacin group. While the once-daily 400 mg dosing level achieved comparable efficacy, we have no plans to continue with this dosing level. We have chosen to use a twice-daily IV 300 mg dosing level, or an oral dose with an equivalent exposure, for our Phase 3 study. This trial was not designed to demonstrate statistical significance and the results were not statistically significant. Two patients in this trial had serious adverse events that were thought by the investigator to be possibly related to delafloxacin therapy. One patient with a complicated medical history was hospitalized with abdominal pain and diarrhea. A second patient had a single episode of mouth swelling and shortness of breath. The common adverse events for delafloxacin in this trial were diarrhea, headache, nausea, rhinitis, dry mouth, dizziness, insomnia, vomiting and sinusitis.

	Response Rates			
Efficacy at Test of Cure	Delafloxacin 100 mg QDx5 days	Delafloxacin 200 mg QDx5 days	Delafloxacin 400 mg QDx5 days	Levofloxacin 500 mg QDx7 days
Clinical Response Rates				
ITT	72% (49/68)	69% (47/68)	79% (54/68)	75% (52/69)
CE	83% (43/52)	84% (41/49)	88% (51/58)	91% (50/55)
Microbiological Response Rates				
ME	77% (20/26)	88% (22/25)	94% (31/33)	94% (33/35)

Phase 1 Clinical Studies

There have been a total of 16 Phase 1 studies conducted with delafloxacin to confirm safety or test various formulations of the drug. Key safety-oriented Phase 1 studies include:

- a randomized, double-blind, placebo- and positive-controlled study designed to evaluate the potential effects of delafloxacin on the QT interval of healthy adult subjects. The QT

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interval is a measure of the length of time between electrical impulses in the heart, and is used to assess the potential for a drug to cause heart rhythm irregularities. This study was conducted according to the International Committee for Harmonization, or ICH, Guideline 14 for the conduct of QT-effect studies. A total of 52 subjects, male and female, received the following regimens: placebo, moxifloxacin 400 mg oral as the positive control, delafloxacin 300 mg IV, and the maximally tolerated delafloxacin dose of 900 mg IV. The data from this trial showed that delafloxacin did not prolong QT interval values at either the clinical dose of 300 mg IV or at the supra-therapeutic dose of 900 mg IV, and was similar to placebo. The positive control, moxifloxacin, showed a typical prolongation response. No serious adverse events or heart rhythm irregularities were reported during the study. This study also confirmed the 900 mg dose as the maximum tolerated dose of delafloxacin in an IV form.

- a Phase 1, single-blind, placebo- and positive-controlled, randomized, parallel-group study in 52 healthy male and female volunteers. The study was designed to demonstrate the photosensitizing potential and wavelength dependency of delafloxacin by comparing the response of the skin to ultraviolet A, or UVA, ultraviolet B, or UVB, and visible radiation prior to and during administration of delafloxacin, lomefloxacin as the positive control, or placebo. Delafloxacin tablets were given in 200 mg and 400 mg once daily doses for six days and lomefloxacin was given in 400 mg once daily doses for six days. Delafloxacin was not different from the placebo, and did not demonstrate clinically significant phototoxic potential at any of the wavelengths tested, while the active comparator lomefloxacin demonstrated a moderate degree of phototoxicity at UVA wavelengths of 335 nm and 365 nm.
- a Phase 1 study of two IV formulations of delafloxacin, which included the collection of serum insulin values and corresponding serum glucose values in both the 300 mg and placebo groups on day one and day 14 of the study, beginning immediately pre-dose, followed by once per hour for six hours. The analysis showed no difference between placebo and delafloxacin in respect to insulin secretion and glucose levels.

Radezolid

Our second product candidate, radezolid, is a next-generation, IV/oral oxazolidinone designed to meet the need for a potent antibiotic with a safety profile permitting long-term treatment of resistant infections, including MRSA. While not yet tested for long-term use in humans, we have completed a 90-day animal toxicology study of radezolid which showed that radezolid was safely tolerated for the full 90 days at the maximum dose, which dose was 12 times greater than the efficacious dose used in humans for shorter-term studies. Through a rational drug design process involving approximately 700 prototype compounds, we developed radezolid to have structural advantages that make it a candidate for use as a treatment for serious infections, such as ABSSSI and severe CABP, and long-term treatment of underserved serious infections, such as osteomyelitis and prosthetic and joint infections. We believe that the demonstrated broad- spectrum of coverage, potency and potential long-term safety profile of radezolid give it the potential to become the antibiotic of choice for multiple resistant bacterial infections, and for treatment in populations, such as the elderly and children, that might be vulnerable to myelosuppression caused by other oxazolidinone treatments.

We have successfully completed two Phase 2 studies of radezolid with an oral formulation in uSSSI and in CABP. In both studies, radezolid was shown to be well-tolerated and effective with a once-daily dosing regimen. We have also completed a Phase 1 study of an IV form of radezolid, to enable an IV- to-oral switch in future Phase 2 and Phase 3 studies. In *in vitro* studies, we have shown radezolid to be microbiologically more active than oxazolidinones currently on the market

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or known by us to be in development against Gram-positive microorganisms, including potent activity against Zyvox-resistant bacteria. Subject to obtaining sufficient additional funding beyond the proceeds of this contemplated offering, we expect future clinical development of radezolid to involve an additional Phase 2 study in ABSSSI with the IV formulation and a long-term Phase 1 safety study with the oral formulation. With its enhanced potency against resistant strains of MRSA, improved safety profile, and expanded spectrum, radezolid has the potential to be an improved oxazolidinone as compared to Zyvox, the only currently marketed oxazolidinone and the leading branded antibiotic for serious Gram-positive infections, which generated worldwide sales of approximately $1.3 billion in 2011, as reported by Pfizer.

Differentiating Attributes

We believe that the structural advantages of radezolid confer the following attributes, which differentiate radezolid from Zyvox, tedizolid and other MRSA therapies and make it potentially suitable for the treatment of serious infections, such as ABSSSI and severe CABP, including those caused by MRSA, as well as long-term treatment of underserved serious infections such as osteomyelitis, prosthetic and joint infections and tuberculosis:

- *Greater potency against Zyvox-resistant Gram-positive bacteria.* Radezolid has several attributes allowing it to overcome known oxazolidinone resistance mechanisms and have increased activity compared to oxazolidinones currently on the market or known by us to be in development. In a recent study presented in 2011 at the European Congress of Clinical Microbiology and Infectious Diseases, or ECCMID, JMI Laboratories compared the potency of radezolid to that of the only marketed oxazolidinone, Zyvox, and another investigational oxazolidinone, tedizolid, against a collection of Gram-positive bacteria with genetically defined mechanisms of oxazolidinone resistance. In this study, radezolid demonstrated enhanced activity against the collection's 90 strains.
- *Broader spectrum.* Like all oxazolidinones, radezolid has shown excellent *in vitro* activity against resistant *Streptococcus pneumoniae* and MRSA. Unlike Zyvox and tedizolid, radezolid has also shown *in vitro* activity against other common causes of CABP, such as *Haemophilus influenzae*, *Legionella pneumophila* and *Moraxella catarrhalis*. In addition, radezolid has shown potency and activity in animal models against *Mycobacterium tuberculosis* in a rodent study conducted by a third party.
- *Enhanced delivery to the site of infection*. Our *in vitro* studies have shown that, unlike Zyvox, radezolid concentrates within cells, including macrophages, other immune cells, and lung epithelial cells, and remains at concentrations and active within cells long after concentrations in the blood decrease following therapy withdrawal. These heightened cell concentrations enable enhanced killing of intracellular pathogens and may convey greater drug quantities to infection sites through immune cell trafficking, making radezolid effective at lower and less frequent dosing.
- *Improved safety profile*. In preclinical evaluations and clinical trials to date, radezolid administered at therapeutic doses has not demonstrated any significant safety issues, such as the myelosuppression commonly associated with oxazolidinones, potentially making radezolid the only long-term oxazolidinone therapy available for difficult-to-treat MRSA and other resistant infections. The common adverse events observed in clinical trials of radezolid were nausea, diarrhea, headache, dizziness and fungal infection. We believe that, unlike Zyvox, radezolid does not enter the central nervous system. Therefore, it should not be subject to centrally-mediated effects due to monoamine oxidase inhibition and serotonin interaction, including those often seen with Zyvox in patients taking selective serotonin reuptake inhibitors, or SSRI, agents such as Prozac.

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We recently completed a long-term preclinical study of radezolid to further evaluate its safety. While the long-term safety of radezolid must be demonstrated in human clinical trials, the data from this preclinical study provided encouraging evidence of radezolid's long-term safety profile.

- *Convenient IV-to-oral once daily dosing regimen.* Radezolid can be administered in either IV or oral formulations. Moreover, unlike Zyvox, radezolid has the potential to be administered once daily and at lower doses, which may improve patient compliance with the oral treatment regimen following discharge from the hospital and therefore increase the likelihood of treatment success.

The common adverse events observed in clinical trials of radezolid were nausea, diarrhea, headache, dizziness and fungal infection. Two patients receiving radezolid in our clinical trials have had serious adverse events that were thought by the investigator to be possibly related to radezolid therapy. One patient with lung cancer had a pneumonia that did not respond to radezolid therapy. A second patient with prior peptic ulcer disease discontinued ulcer therapy prior to enrolling in a radezolid trial and had a recurrent ulcer with perforation.

Our Phase 2 Clinical Trials of the Oral Dosage Form of Radezolid

Phase 2 Trial in Uncomplicated Skin and Skin Structure Infections. Our first Phase 2 study of radezolid was a multicenter, randomized, open-label, comparative study to evaluate the safety and efficacy of radezolid as compared to Zyvox in the outpatient treatment of adult patients with uSSSI. A total of one hundred and fifty adult subjects with uSSSIs were randomized to one of three treatment groups: radezolid 450 mg once per day, radezolid 450 mg twice per day, or Zyvox 600 mg twice per day. Patients took either radezolid or Zyvox orally for five days and were then clinically evaluated on study day five. If, upon such evaluation, treatment for the uSSSI was still required, patients continued to take the study drug for up to an additional five days. ITT, CE, and ME analysis groups were as defined above. The primary endpoint of the study was clinical response at test-of-cure time point. Of the pathogens isolated in the ME population at baseline, 57% were MRSA. The results of the trial were similar across all treatment groups and infection types. This trial was not designed to demonstrate statistical significance and the results were not statistically significant. The common adverse events for radezolid in this trial were diarrhea and nausea. No episodes of bone marrow suppression with radezolid were noted. One patient on Zyvox had a temporary reduction of platelets to below the lower limit of normal, while another had a temporary reduction of white blood count to below the lower limit of normal.

	Response Rates		
Efficacy at Test Of Cure	Radezolid 450 mg QD	Radezolid 450 mg BID	Zyvox 600 mg BID
Clinical Response Rates			
ITT Response	82% (40/49)	76% (37/49)	83% (39/47)
CE Response	97% (38/39)	94% (34/36)	97% (37/38)
Microbiological Response Rates			
ME Response	100% (20/20)	89% (23/26)	91% (21/23)

Phase 2 Trial in Community-Acquired Bacterial Pneumonia. Our second Phase 2 study of radezolid was a double-blind, randomized, multicenter clinical trial conducted in adult patients with mild to moderately severe CABP. The objectives of the study were to assess the efficacy, safety, and tolerability of radezolid in this patient population. We enrolled and randomized a total of 160 patients who met the study criteria into one of three radezolid treatment groups: 300 mg orally once per day, 450 mg orally once per day or 450 mg orally twice per day, in each case for seven to 10 days. The primary endpoint of the study was clinician's assessment of

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clinical response at test-of-cure time point. This trial was not designed to demonstrate statistical significance and the results were not statistically significant. Two patients in this trial had serious adverse events that were thought by the investigator to be possibly related to radezolid therapy. One patient with lung cancer had a pneumonia that did not respond to radezolid therapy. A second patient with prior peptic ulcer disease discontinued ulcer therapy prior to enrolling in a radezolid trial and had a recurrent ulcer with perforation. The common adverse events in this trial were diarrhea, fungal infection, dizziness and headache.

	Response Rates		
Efficacy at Test Of Cure	Radezolid 300 mg QD	Radezolid 450 mg QD	Radezolid 450 mg BID
Clinical Response Rates			
ITT Response	80% (41/51)	80% (41/51)	70% (37/53)
CE Response	92% (34/37)	84% (37/44)	78% (32/41)
Microbiological Response Rates			
ME Response	94% (16/17)	77% (20/26)	69% (18/26)

Other Clinical Studies

To date, we have tested the safety, tolerability, pharmacokinetics, food effect and age/gender effects of oral doses of radezolid in six Phase 1 studies. A total of 172 healthy volunteers were enrolled in these studies and 143 received radezolid. Data from the six Phase 1 studies demonstrated that single oral doses of up to 1200 mg of radezolid and repeat oral doses of up to 900 mg of radezolid for 14 days were well tolerated in healthy volunteers. The most common treatment-related adverse events experienced by the subjects in these trials were gastrointestinal symptoms such as diarrhea, loose stools and abdominal pain, together with headache, facial flushing and minor rash.

Three-month Rodent Toxicology Study

A three-month GLP rat toxicology study to support a future NDA submission was performed on our behalf by a third-party contract research organization, or CRO, to evaluate the long-term safety of radezolid dosed orally. Radezolid was dosed in three arms of 10, 50 and 200 mg/kg/day, with a separate vehicle-dosed control group. The study was designed such that the mid-dose approximated the efficacious exposure in humans, and the higher dose, at four-times the projected human efficacious exposure, was used to define an adverse event level. At the three-month time point, radezolid was found to be well-tolerated at all dose levels and resulted in no clinical observations, no changes in food consumption, and minimal changes in body weight. Therefore, the CRO concluded that the no observed adverse effect level was 200 mg/kg/day. The absence of observed adverse events over 90 days, at a dosing regimen four-times greater than the projected efficacious dose in humans, suggests that radezolid has strong potential as a long-term dosing option for resistant infections, although such potential must be confirmed through human clinical trials. The table below sets forth data with respect to dose, body weight and changes in blood parameters for each dosing group.

		Average body weight at end of study	Hematology results at end of study	
Compound	Dose (mg/kg/day)		Reticulocytes (x 10^3/µl)	Neutrophils (x 10^3/µl)
Control	-	603 M / 324 F	209.2 M / 169.5 F	2.02 M / 1.02 F
Radezolid	200	504 M / 275 F	159.4 M / 127.9 F	1.62 M / 0.69 F
	50	571 M / 293 F	203.9 M / 140.2 F	1.99 M / 0.68 F
	10	573 M / 320 F	192.2 M / 180.3 F	1.53 M / 1.02 F

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In order to provide context for these results with respect to established findings for long-term use of oxazolidinones as a class, the same CRO evaluated the long-term safety in rats of linezolid and tedizolid dosed orally over the same three-month period in a contemporaneous non-GLP study. For this study, linezolid, having 99.7% purity as measured by high pressure liquid chromatography, or HPLC, was purchased from Alembic, Ltd., of India, and tedizolid, having 99.3% purity as measured by HPLC, was manufactured by a third party according to the procedure disclosed in the published patent application (#WO 2010/042887 A2) of Trius. Linezolid was dosed in two arms of 40 and 100 mg/kg/day, and tedizolid was dosed in two arms of 10 and 50 mg/kg/day. The study was designed such that the lower doses approximated the efficacious exposures in humans, with higher doses used to define adverse event levels. This study also had a separate vehicle-dosed control group. Male and female rats in the high-dose linezolid group (100 mg/kg/day) exhibited significant weight loss, and all were taken off the study after 75 days pursuant to predetermined guidelines for the ethical treatment of animals. Female rats in the high-dose tedizolid group (50 mg/kg/day) exhibited significant weight loss starting shortly after the commencement of dosing and for the duration of the study. After 12 days of dosing at 50 mg/kg/day, these animals were given a seven-day dosing holiday, followed by a lower dose of tedizolid at 30 mg/kg/day for the remainder of the study. Due to significant weight loss, all of these animals were taken off the study after 57 days, pursuant to the predetermined guidelines for the ethical treatment of animals. The table below sets forth data with respect to dose, body weight and changes in blood parameters for each of the dosing groups.

Compound	Dose (mg/kg/day)	Average body weight at end of study or group termination (Day*)	Hematology results at end of study or group termination (Day*)	
			Reticulocytes (x 10^3/µl)	Neutrophils (x 10^3/µl)
Control	-	580 M / 303 F	250.1 M / 190.2 F	1.71 M / 0.80 F
Linezolid	100	416 M / 213 F (Day 71)	126.0 M / 175.1 F (Day 75)	0.56 M / 0.71 F (Day 75)
	40	569 M / 318 F (Day 75)	253.1 M / 218.9 F	1.52 M / 1.11 F
Tedizolid	50 (or 50/30 for females)	505 M (Day 91) / 213 F (Day 57)	198.9 M (Day 91)/ 40.0 F (Day 58)	1.14 M (Day 91)/ 0.26 F (Day 58)
	10	586 M / 304 F	217.9 M / 198.4 F	1.75 M / 0.82 F

* Termination day, or measurement day, as applicable, if group did not complete 13 week study.

RX-04 Program

Our most advanced preclinical program, the RX-04 program is focused on using a discrete, novel binding site within the ribosome to design and develop new classes of antibiotics to treat some of the most deadly and difficult-to-treat, multi-drug resistant Gram-positive and Gram-negative infections. Pathogens associated with these infections include *E.coli, Klebsiella pneumoniae, Enterobacter* species*, Pseudomonas aeruginosa* and *Acinetobacter baumannii* and MRSA. Using our proprietary drug discovery platform, we have developed three novel classes of antibiotics in less than three years that bind to this ribosome site, show high levels of antibacterial activity against a number of these pathogens, and show compelling efficacy in multiple animal models of infection. In June 2011, we entered into a collaboration and license agreement with Sanofi to develop multiple products targeting this discrete binding site within the ribosome. See "—Strategic Collaboration with Sanofi."

Based on the preclinical data from the RX-04 program and on studies published in *Antimicrobial Agents and Chemotherapy*, we believe that RX-04 is the only drug development

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program that has produced compounds with demonstrated *in vitro* coverage of all of the following multi- drug resistant Gram-positive bacteria: *Enterococci, Streptococci* and *Staphylococci*, including MRSA; and multi-drug resistant and extremely drug resistant Gram-negative bacteria: *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa* and *E. coli*. These pathogens account for a majority of hospital-acquired infections, are associated with high rates of morbidity and mortality and are increasingly multi-drug resistant, meaning that they are resistant to more than three classes of antibiotics. Because the RX-04 compounds bind to a novel site on the ribosome that has never before been exploited by marketed antibiotics and because they have proprietary chemical characteristics distinct from all current classes of broad-spectrum or Gram-negative therapies, we have shown that their activity is unaffected by cross-resistance to current therapies, and we expect lower resistance development than current therapies. These compounds are also small molecules, thereby providing us with the potential to ultimately offer an IV-to-oral switch for maximum flexibility. Furthermore, *in vitro* preclinical studies have shown that these compounds have little propensity for drug-drug interactions, have demonstrated no cardiovascular toxicity in *in vitro* models, are not mutagenic and do not appear to have undesired pharmacological interactions. Based on these characteristics, we believe that the RX-04 program has significant potential to produce drug candidates that directly address the urgent public health threat caused by the most difficult to treat pathogens.

Differentiating Attributes

To call attention to the critical unmet need for new and better antibiotics, the IDSA established the 10x'20 Initiative. The goal of the 10x'20 Initiative is to build a sustainable antibiotic research and development infrastructure and, in the short-term, to produce 10 new systemic antibiotics by 2020 that target the ESKAPE pathogens, the six species of drug-resistant bacteria that account for a majority of hospital-acquired infections, are associated with high rates of morbidity and mortality, and are increasingly multi-drug resistant, meaning that they are resistant to more than three classes of antibiotics. They consist of the following Gram-positive bacteria, which provide the acronym ESKAPE: *Enterococci* and *Staphylococcus aureus*, including MRSA; and Gram-negative bacteria: *Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa* and *Enterobacter* species. Our RX-04 program demonstrates our commitment to this goal and, we believe, is well positioned to address the following desired attributes of these new antibacterial drugs:

- *Activity against extremely difficult-to-treat infections*. We believe, based on published studies, that RX-04 may be the only drug development program that has produced compounds with demonstrated *in vitro* coverage of all of the ESKAPE pathogens. Many of the ESKAPE pathogens are resistant to every antibiotic except colistin, a 1950s-era drug that is the treatment of last resort because of its high toxicity.
- *Lower potential for resistance*. Because the RX-04 compounds bind to a novel site on the ribosome that has never before been exploited by antibiotics and because they have proprietary chemical characteristics distinct from all current classes of broad-spectrum or Gram-negative therapies, we expect that their activity will be unaffected by cross resistance to current therapies and will result in lower potential resistance as compared to current therapies.
- *Lower potential for toxicity*. Our discovery process allows optimization of molecular properties that have the potential not only for greater potency, but also greater safety. We intend to use our compound-optimization abilities to design compounds which reduce the probability of adverse drug-drug interactions, cardiovascular toxicity, mutagenicity and undesired pharmacological interactions.

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- *Potential for IV-to-oral dosing*. The RX-04 compounds are small molecules thereby providing us with the potential to develop an IV-to-oral switch for maximum flexibility.

Summary of Preclinical Data

Several RX-04 compounds show compelling *in vitro* potency against panels of multi-drug resistant and extremely drug resistant ESKAPE pathogens and have been unaffected by cross-resistance, including extended-spectrum beta-lactamase, or ESBL, *Klebsiella pneumonia* carbapenemase, or KPC, and New Delhi Metallo-beta-lactamase-1, or NDM-1, producing *Enterobacteriaceae*, multi-drug resistant and extremely drug resistant *A. baumannii* and *P. aeruginosa*, MRSA, Vancomycin-resistant *enterococci*, or VRE, Zyvox-resistant *enterococci*, or ZRE, Macrolide-resistant *streptococci* and *staphylococci*. Moreover, several compounds from this program have been shown to be efficacious when administered intravenously in mouse models of infection, including sepsis, skin and lung infections.

The table below compares the potency of two RX-04 program compounds, RX-7713 and RX-7999, to that of several marketed antibiotics against eight representative multi-drug resistant and extremely drug resistant strains of bacteria. Potency is measured by MIC data, with lower numbers indicating greater potency. Using our proprietary drug discovery platform, we were able to design structural improvements to RX-7713, which has excellent potency against many of these strains, resulting in RX-7999, which has excellent potency against all of these strains. This achievement was accomplished in six months and involved the design and testing of only 67 analog compounds.

	Potency as Measured by MIC							
Bacterial Strain	**Ceftriaxone**	**Ertapenem**	**Cipro**	**Gentamicin**	**Tigecycline**	**Colistin**	**RX-7713**	**RX-7999**
Representative multi-drug resistant (MDR)/extremely drug resistant (XDR) Gram-negative strains								
E. coli 1705878 (ESBL, MDR)	>128	0.008	>128	64	0.5	0.5	1	1
K. pneumoniae 1705949 (KPC, MDR)	>128	>128	>128	>128	1	£ 0.25	0.5	0.5
K. pneumoniae NDM-1 CR3 (MBL, XDR)	>128	>128	>128	8	>128	>128	0.5	1
P. aeruginosa 1705904 (XDR)	>128	>128	>128	>128	>32	8	16	4
A. baumannii 1705936 (MDR)	>128	>128	>128	>128	2	0.5	16	2
Representative multi-drug resistant (MDR) Gram-positive strains								
S. aureus 11540 (USA300, MRSA)	>128	8	>128	1	0.25	>128	0.5	0.5
E. faecium A6439 (VRE, ZRE, MDR)	>128	>128	>128	>128	£ 0.06	NT	4	1

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Several compounds from the RX-04 program showed efficacy in multiple animal models of infection. Set forth in the table below are mouse survival data from two sepsis models of infection, one with MRSA and the other with *Acinetobacter baumannii*. The results are expressed as PD_{50}s, which is the amount of drug needed to ensure survival in half of the study animals, with lower numbers indicating a higher level of protection. In addition to these excellent survival results, RX-04 compounds have been shown to be highly efficacious in other models of animal infection, including an *E. coli* sepsis model, a *Klebsiella pneumoniae*, skin-and-soft-tissue model, and a MRSA kidney abscess model.

	MRSA 11540		*A. baumannii 1705943*	
Compound	MIC (mg/mL)	PD_{50} (mg/kg)	MIC (mg/mL)	PD_{50} (mg/kg)
RX-7892	0.5	<1.0	0.25	<0.5
RX-8082	0.125	<0.5	0.25	1.57
RX-8119	0.25	<0.5	0.25	0.99
RX-8120	0.25	<0.5	0.25	0.85

Strategic Collaboration with Sanofi

In June 2011, we entered into a collaboration and license agreement with Sanofi related to our RX-04 program. Under this agreement, Sanofi has the right to license an unlimited number of product candidates targeting a discrete binding site within the ribosome. We retain all rights pertaining to our proprietary drug discovery platform, including all other binding sites within the ribosome and all future programs, as well as to any RX-04 compound that Sanofi does not exercise its option to develop during the three-year term of the collaboration. We have received $22.0 million through March 31, 2012 in upfront and milestone payments under the collaboration, including the receipt of a payment of $3.0 million from Sanofi in January 2012 for the achievement of a research milestone. For each RX-04 product developed by Sanofi, we are eligible for up to $9.0 million in potential research milestone payments, up to $27.0 million in potential development milestone payments relating to initiation of Phase 1, 2 and 3 clinical trials, up to $50.0 million in potential regulatory milestone payments relating to approvals in various jurisdictions including the United States, the European Union and Japan, up to $100.0 million in potential commercial milestone payments, and tiered percentage royalties of up to 10% on sales from products commercialized under the agreement, if any. We also have the right under the collaboration to co-commercialize one RX-04 product of our choosing with Sanofi in the United States. We are currently collaborating with Sanofi on ongoing preclinical development and lead generation and, as part of a comprehensive safety assessment, we have just completed *in vitro* and *in vivo* profiling of the first cohort of leads from the RX-04 program that demonstrated strong potency and efficacy. These results have informed the next iteration of design and optimization. We expect the results of this optimization round to inform the selection of a lead compound in 2012 for toxicology studies followed by Phase 1 studies in humans. Either party may terminate this agreement immediately upon written notice if the other party becomes subject to bankruptcy or similar events. In addition, either party may terminate this agreement upon 30 days' written notice if the other party, or the other party's affiliates or sublicensees, challenges the validity or enforceability of a claim included in any patent licensed to such other party, affiliate or sublicensee under the agreement.

Either party may terminate the agreement in the event of a material breach by the other party, subject to prior notice and the opportunity to cure. Sanofi may terminate the agreement upon 90 days prior written notice, however doing so will not relieve Sanofi of its obligations to pay royalties with respect to further sales of any licensed product candidate.

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Our Discovery Programs

Our discovery programs are focused on engineering new compounds and classes of compounds to treat the most highly resistant pathogens. In 2011, we initiated preclinical programs RX-05, focused on the development of a novel scaffold for the treatment of serious multi-drug resistant bacterial infections, and RX-06, focused on the development of a novel scaffold for the treatment of serious fungal infections. The current goals for the RX-05 and RX-06 programs are to show proof-of-concept by designing, preparing and validating at least one novel chemical scaffold that meets the following criteria:

- binds in the intended region as measured crystallographically;
- has functional activity at the target; and
- shows activity in cell culture.

We expect that achievement of this proof-of-concept will provide the necessary chemical foundation for lead identification/lead optimization programs in 2012. In addition, our RX-02 novel macrolide program is designed to overcome known ribosomal resistance modifications in a wide range of pathogens, including those generally associated with hospital-acquired Gram-positive infections, community respiratory tract infections and skin infections seen both in hospital and community settings. RX-02 is a discovery program that we are not currently developing on our own and for which we are currently seeking partners.

Our Proprietary Drug Discovery Platform

Our integrated approach to novel antibiotic design targets the large (50S) ribosomal subunit of bacteria, for which our co-founder, Yale Professor Thomas A. Steitz, Ph.D., shared the Nobel Prize in Chemistry in 2009. We believe our key competitive advantage is our focus on the three-dimensional properties of antibiotics, which is enabled by our proprietary drug discovery platform. Unlike traditional approaches to antibiotic discovery, which generally rely on random screening of chemical libraries to identify potential compounds, our discovery team combines sophisticated and exclusive computational tools with patent-protected, atomic-level insights into the structure of the ribosome to systematically engineer novel antibiotics to avoid resistance and optimize potency, spectrum, efficacy and safety. As a result, we have created a highly efficient and productive drug development engine based on our unique design strategy that effectively leverages structure-based drug design, preparative medicinal chemistry, ribosome biochemistry, molecular biology and pharmacology.

Because its protein building function is essential for the life of the bacterium, the bacterial ribosome is the target of most marketed antibiotics, which work by binding to the ribosome and inhibiting its function. Unlike typical targets for structure-based drug design, the ribosome presents numerous distinct targets for drug discovery. We believe that we are the only company with the combined intellectual property portfolio, cross-functional experience and knowledge base to exploit the high-resolution X-ray crystal structures of the bacterial ribosome for drug development. By applying our analytic capability to current antibiotic classes, we are able to reveal gaps in coverage and rationally design next-generation, expanded-spectrum compounds and novel classes of antibiotics to combat known resistance mechanisms.

Our ribosome crystallography tools relevant to our current development programs consist of the proprietary experience, knowledge and data we have collected from X-ray crystallographic analysis of the structure of the ribosome and nearly 400 antibiotics which bind to the 50S subunit of the ribosome of the *Haloarcula marismortui* bacteria, 25 antibiotics which

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bind to the 50S subunit of the ribosome of another bacteria related to *Enterococci* and *Staphylococci* bacteria, and 12 antibiotics which bind to the 70S subunit of the *Thermus thermophilus* bacteria. These tools offer four key competitive advantages, based on atomic-level detail of the structure of the ribosome, for the design of new anti-infectives with differentiated coverage, safety and convenience:

- unrivaled three-dimensional knowledge of how anti-infectives interact with the ribosome;
- ability to augment and refine this knowledge by characterizing new antibiotic structures on a regular basis;
- insight into the location of resistance-causing ribosomal mutations; and
- ability to utilize ribosomal spaces to fine tune molecular attributes important for broad-spectrum efficacy and safety.

Our computational design tools, which were built and optimized on sophisticated software from Professor William Jorgensen, Ph.D., at Yale University, allow us to:

- rapidly identify the high value binding sites for building new anti-infectives;
- assess the impact of and design molecules to counter target-based resistance; and
- query and capitalize on the molecular properties that drive permeability, efflux avoidance and pharmaceutical viability.

We believe that a fundamental strength of our product platform is our ability to proceed from a new hypothesis to generating a set of chemically and biologically validated compounds in less than two weeks. This permits rapid pattern recognition, hypothesis refinement and iterative design. We can begin in any one of the validated ribosome target spaces, designing virtual molecules that extend from a simple scaffold that binds well to the ribosome to nearby spaces that address a particular therapeutic objective, as the biology dictates. Representative subsets of these virtual molecules are then chemically synthesized with key building blocks that can be assembled rapidly and on a scale that will facilitate fast and broad profiling, including measurements of affinity, microbiological activity, *in vitro* safety and *in vivo* efficacy in mouse models of infection. This strategy has led, and we believe will continue to lead, to a pipeline of novel, small-molecule antibiotic classes, which not only will offer new therapies for emerging medical needs but have the potential to keep one step ahead of resistance.

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, except in the RX-04 program where we have retained an option for U.S. co-commercialization rights on a compound of our choosing. We intend to retain significant control over the commercial execution of each our product candidates, while participating in a meaningful way in the economics of all drugs that we bring to market.

We intend to commercialize our product candidates in the United States alone or in collaboration with one or more pharmaceutical companies that have established commercial capabilities, as appropriate, to maximize the value of each our product candidates. We currently have limited marketing, no sales nor distribution capabilities. We intend to build a commercial organization in the United States to focus on educating hospital and institution-based physicians, nurses, pharmacy directors, and payors about our products. We intend to recruit

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experienced marketing, sales and medical education professionals and to develop a commercial strategy to target institutions with the greatest use of drugs for resistant, serious infections.

We will also seek to market our product candidates in the European Union, which has similarly seen an increase in serious, resistant infections such as MRSA. We have performed an analysis of the European Union market for serious, resistant infection treatment, and our current plan is to commercialize our product candidates in the European Union with the assistance of partners.

We also believe that there is a rapidly growing need for antibiotics to treat serious, resistant infections in other markets throughout the world, including Asian markets such as Japan, Korea, and Taiwan and emerging markets such as China, Russia, South America and India. We envision expansion of our product candidates to these markets through partnerships following the introductions in the United States.

Our commercialization strategy with respect to specific product candidates is as follows:

Delafloxacin. We are currently developing our most advanced product candidate, delafloxacin, for the treatment of ABSSSI. Assuming the successful completion of clinical trials and receipt of regulatory approvals, we intend to expand the usage of delafloxacin into other indications, such as CABP and cIAI. We plan to file for European Union approval of delafloxacin in the same time period as we seek approval in the United States. Upon any such approval, we intend to focus our delafloxacin commercialization efforts on use primarily in hospitals. We believe that delafloxacin has the potential to become the first-line treatment of choice in these settings because of its safety profile and coverage of both Gram-negative infections and Gram-positive infections, including MRSA.

Radezolid. Subject to obtaining sufficient additional funding beyond the proceeds of this contemplated offering, we intend to pursue development of radezolid for the treatment of ABSSSI, and intend to conduct a Phase 2 trial prior to designing and initiating Phase 3 development in this indication. We intend to perform additional clinical trials of radezolid for treatment of serious infections, such as ABSSSI and severe CABP, and for long-term treatment of underserved serious infections, such as osteomyelitis and prosthetic and joint infections, including as a result of orthopedic surgery. We believe that radezolid has the potential to become the antibiotic of choice for these indications because of its potency and improved long-term safety profile.

RX–04 Program. Under our collaboration and license agreement with Sanofi, we have the right to co-commercialize in the United States a product of our choice developed through our RX-04 program. We are not required to exercise this option until six months prior to the commencement by Sanofi of Phase 3 trials of the product candidate. This timing allows us to review Phase 2 data on the efficacy and safety profiles of the product candidates prior to our selection, thus potentially lowering the commercial risk of exercising that option. We believe that a single Rib-X sales force will be able to promote sales of delafloxacin, radezolid and an RX-04 product candidate, thus lowering our overall commercialization costs.

Manufacturing

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 simple synthetic processes from readily available starting materials. We currently rely on a small number of third-party contract manufacturers for all of our required raw materials, drug substance and finished product

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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 contractors.

Intellectual Property

The proprietary nature of, and protection for, our proprietary drug discovery platform, our product candidates and our discovery programs, processes and know-how are important to our business. We seek patent protection in the United States and internationally for our proprietary drug discovery platform, delafloxacin, radezolid, the RX-04 program and our discovery programs, and any other technology to which we have rights, where available and when appropriate. Our policy is to pursue, maintain and defend patent rights, whether developed internally or licensed from third parties, and to protect the technology, inventions and improvements that are commercially important to the development of our business. We also rely on trade secrets that may be important to the development of our business.

Our commercial success will depend in part on obtaining and maintaining patent protection and trade secret protection of our proprietary drug discovery platform, our current and future product candidates and the methods used to develop and manufacture them, as well as successfully defending these patents against third-party challenges. Our ability to stop third parties from making, using, selling, offering to sell or importing our products and technology depends on the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities. We cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our technology. For this and more comprehensive risks related to our intellectual property, please see “Risk Factors—Risks Relating to Our Intellectual Property.”

Our Proprietary Drug Discovery Platform

As of the date of this prospectus, we have an exclusive license from Yale University under which we possess rights to certain patents, patent applications and other intellectual property related to the high resolution X-ray crystal structure of the 50S ribosome from *Haloarcula marismortuii*, as well as additional technology related to 50S ribosome structures from *Haloarcula marismortuii* mutants. In addition, under our license from Yale, we have further rights related to 70S ribosome structures from *Thermus thermophilus*. We have developed additional technology both jointly with Yale and independently. We have also exclusively licensed 30S ribosome technology from the Medical Research Council.

The patent portfolio for our proprietary drug discovery platform is directed to drug discovery methods, ribosome crystal forms and methods of making them. This portfolio includes issued U.S. patents (U.S. Pat. No. 7,666,849, U.S. Pat. No. 7,606,670, U.S. Pat. No. 7,504,486, U.S. Pat. No. 7,079,956, U.S. Pat. No. 6,952,650, U.S. Pat. No. 6,947,845, U.S. Pat. No. 6,947,844, U.S. Pat. No. 6,939,848, U.S. Pat. No. 6,925,394, and U.S. Pat. No. 6,638,908), pending U.S. patent applications, and corresponding issued and foreign national or regional counterpart patents or applications. The issued patents, if the appropriate maintenance, renewal, annuity or other governmental fees are paid, are expected to expire between 2021 and 2022.

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Delafloxacin

As of the date of this prospectus, we have a license, both exclusive and nonexclusive, from Wakunaga Pharmaceutical Company, Ltd. to certain patents and patent applications and to certain patents and patent applications to Abbott Laboratories. We have also licensed further technology from CyDex Pharmaceuticals, Inc. (now a wholly owned subsidiary of Ligand Pharmaceuticals Incorporated, both hereafter referred to as Ligand), for the use of Captisol, a sulfobutyl ether beta-cyclodextrin excipient, in connection with delafloxacin. We have developed additional technology independently.

The patent portfolio for delafloxacin and delafloxacin meglumine, the active pharmaceutical ingredient in the delafloxacin product candidate, is directed to composition of matter, formulation, manufacturing methods and methods of use. It includes issued U.S. patents (U.S. Pat. No. 6,133,284, U.S. Pat. No. 6,156,903, U.S. Pat. No. 5,998,436, U.S. Pat. No. 7,576,216, and U.S. Pat. No. 7,728,143), pending U.S. patent applications, and corresponding issued and foreign national or regional counterpart patents or applications. The issued composition of matter patents, if the appropriate maintenance, renewal, annuity or other governmental fees are paid, are expected to expire in 2016, excluding any additional term for patent term adjustments or patent term extensions. For delafloxacin meglumine, we have an issued U.S. patent (U.S. Pat. No. 7,728,143) and two pending U.S. patent applications (U.S. Serial No. 12/701,254 and U.S. Serial No. 12/763,476). If the appropriate maintenance, renewal, annuity or other governmental fees are paid, U.S. Pat. No. 7,728,143, is expected to expire in 2027 and the two pending U.S. patent applications, if issued, are expected to expire no earlier than 2025. We believe that additional term for one of our patents for delafloxacin or delafloxacin meglumine of up to five years may result from the patent term extension provisions of the Hatch-Waxman Amendments of 1984, or Hatch-Waxman. We expect that the other patents, and patent applications in the portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, would expire between 2025 and 2029.

Radezolid

The patent portfolio for radezolid is directed to cover composition of matter, formulation, manufacturing methods and methods of use. It includes issued U.S. patents (U.S. Pat. No. 6,969,726, U.S. Pat. No. 7,148,219, U.S. Pat. No. 7,456,206, U.S. Pat No. 7,705,026), pending U.S. patent applications, and corresponding issued and foreign national or regional counterpart patents or applications. We expect the composition of matter patent, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire in 2024, excluding any additional term for patent term adjustments or patent term extensions. We believe that additional term for one of our radezolid patents of up to five years may result from the patent term extension provisions of Hatch-Waxman. We expect the other patents and patent applications in the portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire between 2024 and 2031.

RX-04 Program

The patent portfolio for our RX-04 program is directed to cover composition of matter and methods of use. It includes pending PCT Patent Applications (PCT Pub. No. WO 2011/047319, PCT Pub. No. WO 2011/047320, and PCT Pub. No. WO 2011/047323) and other pending provisional U.S. patent applications and corresponding foreign patent applications. If issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, we expect that these would have terms that would extend at least until 2030, excluding any additional term for patent term adjustments or patent term extensions. We believe that additional exclusivity for composition of matter patents of up to five years, may result from the patent term extension provisions of Hatch-Waxman.

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Our Discovery Programs

The patent portfolio for our discovery program RX-02 is directed to cover composition of matter and methods of use. It includes issued U.S. patents (U.S. Pat. No. 7,091,196 and U.S. Pat. No. 7,335,753, and further pending patent applications listed via their corresponding PCT Pub. Nos. – PCT Pub. No. WO 2005/085266, PCT Pub. No. WO 2007/025089, PCT Pub. No. WO 2007/025284), and additional pending foreign patent applications. U.S. Patents 7,091,196 and 7,335,753 would expire in 2024 and 2023, respectively, assuming appropriate maintenance, renewal, annuity or other governmental fees are paid. We expect to file patent applications, as appropriate for our RX-05 and RX-06 discovery programs.

Trade Secrets

In addition to patents, we rely on trade secrets and know-how to develop and maintain our competitive position. For example, significant aspects of our proprietary drug discovery platform are based on unpatented trade secrets and know-how. Trade secrets and know-how can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by confidentiality agreements and invention assignment agreements with our employees, consultants, scientific advisors, contractors and commercial partners. These agreements are designed to protect our proprietary information and, in the case of the invention assignment agreements, to grant us ownership of technologies that are developed through a relationship with a third party. We also seek to preserve the integrity and confidentiality of our data, trade secrets and know-how by maintaining physical security of our premises and physical and electronic security of our information technology systems.

Trademarks

Further, we seek trademark protection in the United States where available and when appropriate. We have filed for trademark protection in the United States for the RIB-X mark and the RIB-X PHARMACEUTICALS ANTIBIOTICS IN THREE DIMENSIONS mark, which we use in connection with our pharmaceutical research and development as well as our product candidates. The RIB-X mark has been approved for publication by the USPTO, but is subject to a 30-day public opposition period, which can be extended by an additional 90 days upon the request of an interested party.

Other Commercial Agreements

Wakunaga Pharmaceutical Company License Agreement

On May 12, 2006, we entered into a license agreement with Wakunaga Pharmaceutical Company, Ltd. under which we acquired rights to certain patents, patent applications, and other intellectual property related to delafloxacin. Under the license, we are responsible for and must use commercially reasonable efforts in conducting all research, pre-clinical and clinical studies, and other development and commercialization activities for the licensed compound and licensed products. We also have exclusive control over and responsibility for the regulatory strategies relating to the development and commercialization of the licensed compound and licensed products. We have the right, in our sole discretion, to institute, prosecute and control any action or proceeding to restrain infringement of the licensed patents and we are responsible for defending and controlling any action or proceeding with respect to patent infringement involving our use, sale, license or marketing of the licensed products. Under the license we also have the right to grant sublicenses.

Wakunaga has certain termination rights, should we fail to perform our obligations under the agreement, if we become subject to bankruptcy or similar events, or if our business is

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transferred or sold and the successor requires us to terminate a substantial part of our development activities under the agreement. We have the right to terminate the license for cause upon six months written notice to Wakunaga. Unless earlier terminated, the license agreement will continue in effect on a country-by-country and product-by-product basis until we are no longer required to pay any royalties, which is the later of the date the manufacture, use or sale of a licensed product in a country is no longer covered by a valid patent claim, or 15 years following the first commercial sale in such country. The last issued patent licensed under the agreement to expire in the United States, assuming no patent term extensions under Hatch-Waxman are granted, will be U.S. Pat. No. 7,728,143, which expires in 2027.

We paid Wakunaga $1.5 million upon execution of the license. In June 2007 and September 2009, we made milestone payments under the agreement of $2.0 million and $1.5 million, respectively. In addition, we may be required to pay to Wakunaga an aggregate of $15.0 million upon the achievement of specified development and regulatory approval milestones. We are also obligated to pay tiered royalties in the single digits on net sales of licensed products. We are also obligated to pay a substantial portion of non-royalty income received in consideration of a sublicense of the Wakunaga technology. Through March 31, 2012, we have made payments under the license agreement totaling $5.0 million.

Yale University License Agreement

On December 6, 2001, we entered into an exclusive license agreement with Yale University under which we acquired rights to certain patent applications and other intellectual property. We subsequently entered into three amendments to this license agreement to update the license agreement to include patent applications filed after the effective date of the original license agreement and to exclusively license additional technology from Yale. We are obligated to meet certain diligence requirements, including designing a plan for developing and commercializing the licensed products, using reasonable commercial efforts to begin implementation of the plan, providing annually an updated plan to Yale and meeting other diligence milestones. We also have the right to grant sublicenses of the licensed rights to third parties. We are primarily responsible for the preparation, filing, prosecution and maintenance of all patent applications and patents covering the licensed intellectual property. We have the first right, but not the obligation, to enforce the licensed intellectual property against infringement by third parties and to conduct the legal defense of any third party claims alleging patent infringement against us with respect to the licensed products and intellectual property.

Upon the occurrence of certain events, Yale has the right to terminate the license agreement upon 60 days written notice to us, should we fail to make a material payment under the agreement, commit a material breach of the agreement, fail to carry insurance required by the agreement, cease to carry on our business or become subject to bankruptcy or similar insolvency event. We have the right to terminate the license agreement upon 90 days written notice to Yale. Unless earlier terminated, the agreement will continue in effect until the last of the licensed patents expires. The last issued patent licensed under the agreement to expire in the United States, assuming no patent term extensions under Hatch-Waxman are granted, will be U.S. Pat. No. 7,504,486, which expires in 2022.

Under the agreement, we are required to make certain payments of up to $900,000 to Yale upon the achievement of specified development and regulatory approval milestones for each of the first three products developed under the license. We are also obligated to pay royalties in the single digits on net sales of licensed products or services. Through March 31, 2012, we have paid to Yale license maintenance and milestone payments under the license agreement totaling $205,000.

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Ligand License and Supply Agreement

On November 30, 2010, we entered into a license and supply agreement with CyDex Pharmaceuticals, Inc. (now a wholly owned subsidiary of Ligand Pharmaceuticals Incorporated, both hereafter referred to as Ligand). Under the terms of the license agreement, we obtained an exclusive right, under certain patents and patent applications, to use Ligand's beta sulfobutyl cyclodextrin, Captisol, in connection with delafloxacin. Also, under the terms of the license agreement, we obtained nonexclusive rights to reference their Drug Master File with the FDA related to Captisol. Under the terms of the license we are obligated to meet certain diligence requirements and have the right to grant sublicenses to third parties. Ligand has the sole right to control the prosecution and maintenance of patent applications and the selection of countries where patent applications are filed related to the licensed patents. Ligand also has sole discretion in taking action it deems appropriate against any alleged third party infringer of the licensed patents. If a third party, however, is infringing any licensed product in a manner that violates our exclusive rights, and Ligand does not take steps to stop such infringement, then the percentage of our royalties payable may be reduced. We are required to defend and indemnify Ligand for third party claims that arise from our use or sale of the licensed products.

Ligand has certain rights to terminate the agreement following a cure period, should we fail to perform our obligations under the agreement. In addition, Ligand may terminate the agreement immediately if we fail to pay milestones or royalties due under the agreement or if we become subject to bankruptcy or similar events. We have the right to terminate the license upon 90 days written notice to Ligand. Unless earlier terminated, the agreement will continue in effect until the expiration of our obligation to pay royalties. Such obligation expires, on a country-by-country basis, ten years following the expiration date of the last valid claim of a licensed patent to expire in such country, unless there has never been a valid claim of a licensed product in the country of sale, in which case such obligation expires ten years after the first sale of the licensed product in such country. The last issued patent licensed under the agreement to expire in the United States, assuming no patent term extensions under Hatch-Waxman are granted and assuming no licensed patent applications issue in the future with a later expiration date, will be U.S. Pat. No. 7,635,773, which expires in 2029.

Upon entering the license agreement, we paid to Ligand a license fee of $300,000. In January 2011, we made a milestone payment under the agreement of $150,000. In addition, we have agreed to purchase our requirements of Captisol from Ligand for use in a delafloxacin product, with pricing established pursuant to a tiered pricing schedule. We may be required to pay to Ligand an aggregate of $4.1 million upon the achievement of specified development and regulatory approval milestones. We are also obligated to pay royalties in the single digits on net sales of licensed products. Through March 31, 2012, we have made payments under the license agreement totaling $450,000.

Cemcomco License Agreement

On November 29, 2001, we entered into a license agreement with Cemcomco, a software company owned by one of our founders, Dr. William L. Jorgensen. Under the terms of the license agreement, we obtained an exclusive, worldwide, royalty-free, irrevocable, perpetual license to Cemcomco's computational chemistry Analog software and code. The license grants us the right to install Analog on any computers we own or operate; use, copy, modify, and display Analog; create derivative works of Analog; and create and own improvements of Analog. Cemcomco has also agreed to provide the source code for Analog to us. We have agreed not to distribute or transfer any portion of Analog or any derivative works based upon Analog to third parties without prior written authorization from Cemcomco, except in connection with a change of control transaction. Through March 31, 2012, we have made payments under the agreement totaling $50,010.

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Medical Research Council License Agreement

On March 21, 2005, we entered into an exclusive license agreement with the Medical Research Council, or MRC, under which we acquired rights to certain patent applications and other intellectual property related to the high resolution X-ray crystal structure of the 30S ribosome from *Thermus thermophilus*. We are obligated to meet certain diligence requirements including maintaining accurate records containing all data necessary for the calculation of amounts we must pay to the MRC, preparing statements showing all monies due to the MRC on a product-by-product and country-by-country basis and providing the MRC with a written summary annual report of our progress toward the development and commercialization of the licensed products. We also have the right to grant sublicenses to third parties. We are solely responsible for any prosecution, maintenance, enforcement and defense of the licensed patent rights.

We and the MRC have the right to terminate the license agreement upon 30 days written notice if the other party commits a material breach of the agreement or an insolvency event occurs with respect to the other party, and the MRC may terminate the agreement if we challenge the protection of the licensed patent rights and know how. Unless earlier terminated, the term of the agreement continues until the expiration of the last to expire claim of the licensed patent rights on a country-by-country basis. The last issued patents licensed under the agreement to expire in the United States, assuming no patent term extensions under Hatch-Waxman are granted, will be U.S. Pat. No. 7,606,670 and U.S. Pat. No. 7,079,956, which both expire in 2022.

Upon entering into the license agreement, we paid the MRC a license fee of $10,000. Under the license agreement, we may be required to pay the MRC an aggregate of $610,000 upon the achievement of specified development and regulatory approval milestones for a pharmaceutical product and $100,000 for a diagnostic product. In accordance with the license agreement, the MRC is also entitled to receive royalty payments in the single digits on net sales of any licensed products.

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. We believe the key competitive factors that will affect the development and commercial success of our product candidates are efficacy, coverage of drug resistant strains of bacteria, safety and tolerability profile, reliability, convenience of dosing, price and reimbursement, and susceptibility to drug resistance.

Our most advanced product candidate, delafloxacin, is being developed as a broad spectrum antibiotic with MRSA coverage for first line use in the hospital setting. In this treatment setting, if approved, delafloxacin would compete with a number of currently-marketed antibiotics, including Tygacil and Teflaro, and antibiotics currently in Phase 3 development, including omadocycline/PTK-0796, a tetracycline under development by Paratek Pharmaceuticals, Inc. Given its favorable safety profile, potential for a convenient IV-to-oral switch and potency against Gram-positive infections, including MRSA, we believe that delafloxacin would also compete with currently marketed antibiotics used for serious, Gram-positive infections. These include vancomycin, a generic drug that is manufactured by a variety of companies, Zyvox, Cubicin and telavancin, marketed as Vibativ. In addition, a number of Gram-positive anti-infective product candidates currently in Phase 3 development could also compete with delafloxacin if they are approved, including dalbavancin (under development by

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Durata Therapeutics, Inc.), oritavancin (under development by The Medicines Company), tedizolid (under development by Trius Therapeutics, Inc.) and Taksta (under development by Cempra, Inc.).

Our second product candidate, radezolid, represents a differentiated oxazolidinone with broader coverage and an improved safety profile with the potential for widespread use as a treatment for MRSA and other Gram-positive infections in vulnerable populations or requiring long-term therapy. If approved, we believe that radezolid would compete with a number antibiotics targeting serious Gram-positive infections, including MRSA. These include currently marketed antibiotics such as vancomycin, Zyvox, Cubicin and Vibativ, as well as antibiotics currently in Phase 3 development such as dalbavancin, oritavancin, tedizolid and Taksta. We also expect that our product candidates, if approved, would compete with future generic versions of currently marketed antibiotics.

We believe that our product candidates offer key potential advantages over these competitive products that could enable our product candidates, if approved, to capture meaningful market share from our competitors. However, 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 competitors may be more successful than us in obtaining FDA approval for drugs and achieving widespread market acceptance. Our 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.

Recent Changes to the Regulatory Landscape

The analytic approach of 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, (referred to as an efficacy-slip), and a desire to bring what they perceive to be greater statistical rigor to their analyses. The impact of these forces 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 March 2009, the FDA published a draft guidance entitled "Guidance for Industry Community-Acquired Bacterial Pneumonia: Developing Drugs for Treatment" and in August 2010, it published a draft guidance entitled "Guidance for Industry Acute Bacterial Skin and Skin Structure Infections: Developing Drugs for Treatment", or the 2010 Guidance. The purpose of these guidances was to address many of the uncertainties regarding what the FDA expected from sponsors and clinical trials for the indications of ABSSSI and CABP. The FDA asked sponsors to include additional measurements in their evaluation of efficacy that the FDA believes are more objective and less susceptible to interpretation by investigators. Non-inferiority comparisons of drugs are the standards for antibiotics, and non-inferiority margins are the margins used in the statistical analysis comparing two treatment arms in a study. These are the statistical margins or rules used to distinguish the degree of potential difference between two antibiotics in a study. In September 2010, one month after issuing the 2010 Guidance, the FDA approved Teflaro, the first antibiotic NDA reviewed pursuant to these new endpoints and non-inferiority margins. Since the approval of Teflaro, the FDA has entered into agreements regarding several Special Protocol Assessments, or SPAs, which include provisions consistent with the 2010 Guidance.

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We incorporated these changes from the 2010 Guidance into the design of the Phase 2b study of delafloxacin for ABSSSI from which we recently received results. After considerable discussion with the FDA, the clinical trial required physical and laboratory measurements of the extent and severity of the skin infections which are relatively independent of the traditional physicians' global assessment of clinical outcome. The validity of the measurements was assessed by analyzing the statistical variability of these measures from time point to time point in the early treatment period. The frequency of the measurements permitted use of statistical tools such as Kaplan-Meier analysis, which have not been previously used in evaluating the treatment of ABSSSI. When applied to the data from the delafloxacin arm of the Phase 2b study, and also the comparator arms (vancomycin and Zyvox), enhanced efficacy estimations are possible that permit a much better calculation of Phase 3 study sizes for a given non-inferiority margin, which we believe materially reduces Phase 3 efficacy risk. The release of the 2010 Guidance and the subsequent approval of Teflaro for ABSSSI and CABP have established FDA expectations for non-inferiority margins in these indications, removing a major uncertainty in antibiotic development.

Government Regulation and Product Approval

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

United States Government Regulation

NDA Approval Processes

In the United States, the FDA regulates drugs under the Federal Food, Drug and Cosmetic Act, or the FDCA, and implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with applicable federal, state, local and foreign statues and regulation require the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval, may subject an applicant to administrative or judicial sanctions, any of which could have a material adverse effect on us. These sanctions could include:

- refusal to approve pending applications;
- withdrawal of an approval;
- imposition of a clinical hold;
- warning letters;
- product seizures or recalls;
- total or partial suspension of production or distribution; or
- injunctions, fines, 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 conducted according to Good Laboratory Practices, or GLPs, or other applicable regulations;

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- submission to the FDA of an IND, which must become effective before human clinical trials may begin;
- performance of adequate and well-controlled human clinical trials to establish the safety and efficacy of the proposed drug for its intended use, conducted in accordance with Good Clinical Practices, or GCPs, which are ethical and scientific quality standards and FDA requirements for conducting, recording and reporting clinical trials to assure that the rights, safety and well-being of trial participants are protected;
- submission to the FDA of an NDA;
- 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 regulations, or cGMP, requirements to assure that the facilities, methods and controls are adequate to preserve the drug's safety, identity, strength, quality and purity; and
- FDA review and approval of the NDA.

Once a pharmaceutical candidate is identified for development, it enters the preclinical testing stage. Preclinical tests include laboratory evaluations of product chemistry, toxicity and formulation, as well as animal studies. An IND sponsor must submit the results of the preclinical tests, together with manufacturing information and analytical data, to the FDA as part of the IND. Some preclinical or nonclinical testing may continue even after the IND is submitted. In addition to including the results of the preclinical studies, the IND will also include a protocol detailing, among other things, the objectives of the clinical trial, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated if the first phase lends itself to an efficacy determination. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, places the IND on clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials can begin. A clinical hold may occur at any time during the life of an IND, and may affect one or more specific studies or all studies conducted under the IND.

All clinical trials must be conducted under the supervision of one or more qualified investigators in accordance with GCPs. They must be conducted under protocols detailing the objectives of the trial, dosing procedures, subject selection and exclusion criteria and the safety and effectiveness criteria to be evaluated. Each protocol and any amendments must be submitted to the FDA as part of the IND, and progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently in other situations, including the occurrence of serious adverse events. An institutional review board, or IRB, at each institution participating in the clinical trial must review and approve the protocol and any amendments before a clinical trial commences or continues at that institution, approve the information regarding the trial and the consent form that must be provided to each trial subject or his legal representative, and monitor the study until completed and otherwise comply with IRB regulations.

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

- *Phase 1.* The drug is initially introduced into healthy human subjects and tested for safety, dosage tolerance, absorption, metabolism, distribution and elimination. In the case of some products for severe or life-threatening diseases, such as cancer, especially when the product may be inherently too toxic to ethically administer to healthy volunteers, the initial human testing is often conducted in patients.

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- *Phase 2.* Clinical trials are initiated in a limited patient population intended 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.* Clinical trials are undertaken to further evaluate dosage, clinical efficacy and safety in an expanded patient population at geographically dispersed clinical study sites. These studies are intended to establish the overall risk-benefit ratio of the product and provide an adequate basis for regulatory approval and product labeling.
- Phase 1, Phase 2, and Phase 3 testing may not be completed successfully within any specified period, if at all. The FDA or the sponsor may suspend a clinical trial at any time for a variety of reasons, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients.

During the development of a new drug, sponsors are given opportunities to meet with the FDA at certain points. These points may be prior to submission of an IND, at the end of Phase 2, and before an NDA is submitted. Meetings at other times may be requested. These meetings can provide an opportunity for the sponsor to share information about the data gathered to date, for the FDA to provide advice, and for the sponsor and FDA to reach agreement on the next phase of development. Sponsors typically use the end of Phase 2 meeting to discuss their Phase 2 clinical results and present their plans for the pivotal Phase 3 clinical trial that they believe will support approval of the new drug. If this type of discussion occurred, a sponsor may be able to request a Special Protocol Assessment, or SPA, the purpose of which is to reach agreement with the FDA on the design of the Phase 3 clinical trial protocol design and analysis that will form the primary basis of an efficacy claim.

According to a FDA guidance for industry on the SPA process, a sponsor which meets the prerequisites may make a specific request for a special protocol assessment and provide information regarding the design and size of the proposed clinical trial. The FDA is supposed to evaluate the protocol within 45 days of the request to assess whether the proposed trial is adequate, and that evaluation may result in discussions and a request for additional information. A SPA request must be made before the proposed trial begins, and all open issues must be resolved before the trial begins. If a written agreement is reached, it will be documented and made part of the record. The agreement will be binding on the FDA and may not be changed by the sponsor or the FDA after the trial begins except with the written agreement of the sponsor and the FDA or if the FDA determines that a substantial scientific issue essential to determining the safety or efficacy of the drug was identified after the testing began.

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

The results of product development, preclinical studies and clinical trials, along with descriptions of the manufacturing process, analytical tests conducted on the chemistry of the drug, proposed labeling and other relevant information are submitted to the FDA as part of an

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NDA requesting approval to market the product. The submission of an NDA is subject to the payment of user fees, but a waiver of such fees may be obtained under specified circumstances. The FDA reviews all NDAs submitted to ensure that they are sufficiently complete for substantive review before it accepts them for filing. It may request additional information rather than accept a NDA for filing. In this event, the NDA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing.

Once the submission is accepted for filing, the FDA begins an in-depth review. NDAs receive either standard or priority review. A drug representing a significant improvement in treatment, prevention or diagnosis of disease may receive priority review. The FDA may refuse to approve an NDA if the applicable regulatory criteria are not satisfied or may require additional clinical or other data. Even if such data are submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval. The FDA reviews an NDA to determine, among other things, whether a product is safe and effective for its intended use and whether its manufacturing complies with cGMP requirements to assure and preserve the product's safety, identity, strength, quality and purity. The FDA may refer the NDA to an advisory committee for review and recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendations. Before approving an NDA, the FDA will inspect the facility or facilities where the product is manufactured and tested.

The FDA may require, as a condition of approval, restricted distribution and use, enhanced labeling, special packaging or labeling, expedited reporting of certain adverse events, pre-approval of promotional materials, restrictions on direct-to-consumer advertising or commitments to conduct additional research post-approval. The FDA will issue a complete response letter if the agency decides not to approve the NDA in its present form. The complete response letter usually describes all of the specific deficiencies in the NDA identified by the FDA. If a complete response letter is issued, the applicant may either resubmit the NDA, addressing all of the deficiencies identified in the letter, or withdraw the application.

Expedited Review and Approval

The FDA has various programs, including Fast Track, priority review, and accelerated approval, which are intended to expedite or simplify the process for reviewing drugs, and/or provide for approval on the basis of surrogate endpoints. Even if a drug qualifies for one or more of these programs, the FDA may later decide that the drug no longer meets the conditions for qualification or that the time period for FDA review or approval will not be shortened. Generally, drugs that may be eligible for these programs are those for serious or life-threatening conditions, those with the potential to address unmet medical needs, and those that offer meaningful benefits over existing treatments. For example, Fast Track is a process designed to facilitate the development, and expedite the review of drugs to treat serious diseases and fill an unmet medical need. Priority review is designed to give drugs that offer major advances in treatment or provide a treatment where no adequate therapy exists an initial review within six months as compared to a standard review time of 10 months. Although Fast Track and priority review do not affect the standards for approval, the FDA will attempt to facilitate early and frequent meetings with a sponsor of a Fast Track designated drug and expedite review of the application for a drug designated for priority review. Accelerated approval provides an earlier approval of drugs to treat serious diseases, and that fill an unmet medical need based on a surrogate endpoint, which is a laboratory measurement or physical sign used as an indirect or substitute measurement representing a clinically meaningful outcome. As a condition of approval, the FDA may require that a sponsor of a drug receiving accelerated approval perform post-marketing clinical trials.

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Patent Term Restoration and Marketing Exclusivity

Depending upon the timing, duration and specifics of FDA approval of the use of our drugs, some of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. The patent term restoration period is generally one-half the time between the effective date of an IND, and the submission date of an NDA, plus the time between the submission date of an NDA and the approval of that application. Only one patent applicable to an approved drug is eligible for the extension and the extension must be applied for prior to expiration of the patent. The USPTO, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future, we intend to apply for restorations of patent term for some of our currently owned or licensed patents to add patent life beyond their current expiration date, depending on the expected length of clinical trials and other factors involved in the submission of the relevant NDA.

Market exclusivity provisions under the FDCA also can delay the submission or the approval of certain applications. The FDCA provides a five-year period of non-patent marketing 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 action of the drug substance. 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 for another version of such drug where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement. The FDCA also provides three years of marketing exclusivity for an NDA, 505(b)(2) NDA or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example, for new indications, dosages, or strengths of an existing drug. This three-year exclusivity covers only the conditions associated with the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the original active agent. 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.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan drug designation to drugs intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States, or more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making available in the United States a drug for this type of disease or condition will be recovered from sales in the United States for that drug. Orphan drug designation must be requested before submitting an NDA. After the FDA grants orphan drug designation, the identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

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If a product that has orphan drug designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications to market the same drug for the same indication, except in very limited circumstances, for seven years. Orphan drug exclusivity, however, also could block the approval of one of our products for seven years if a competitor obtains approval of the same drug as defined by the FDA or if our drug candidate is determined to be contained within the competitor's product for the same indication or disease.

Pediatric Exclusivity

Section 505A of the FDCA, as amended by the FDA Amendments Act of 2007, permits certain drugs to obtain an additional six months of exclusivity, if the sponsor submits information requested in writing by the FDA, or a Written Request, relating to the use of the drug in children. The FDA may not issue a Written Request for studies on unapproved or approved indications or where it determines that information relating to the use of a drug in a pediatric population, or part of the pediatric population, may not produce health benefits in that population.

We have not requested or received a Written Request for such pediatric studies, although we may ask the FDA to issue a Written Request for such studies in the future. To receive the six-month pediatric market exclusivity, we would have to receive a Written Request from the FDA, conduct the requested studies in accordance with a written agreement with the FDA or, if there is no written agreement, in accordance with commonly accepted scientific principles, and submit reports of the studies. The FDA will accept the reports upon its determination that the studies were conducted in accordance with and are responsive to the original Written Request or commonly accepted scientific principles, as appropriate, and that the reports comply with the FDA's filing requirements. The FDA may not issue a Written Request for such studies or accept the reports of the studies.

Post-approval Requirements

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product may result in restrictions on the product or even complete withdrawal of the product from the market. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further FDA review and approval. In addition, the FDA may require testing and surveillance programs to monitor the effect of approved products that have been commercialized, and the FDA has the power to prevent or limit further marketing of a product based on the results of these post-marketing programs.

Any drug products manufactured or distributed by us pursuant to FDA approvals are subject to continuing regulation by the FDA, including, among other things:

- record-keeping requirements;
- reporting of adverse experiences with the drug;
- providing the FDA with updated safety and efficacy information;
- drug sampling and distribution requirements;
- notifying the FDA and gaining its approval of specified manufacturing or labeling changes;

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- complying with certain electronic records and signature requirements; and
- complying with FDA promotion and advertising requirements.

Drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and some state agencies for compliance with cGMP requirements and other laws.

We rely, and expect to continue to rely, on third parties for the production of clinical and commercial quantities of our products. Future FDA and state inspections may identify compliance issues at the facilities of our contract manufacturers that may disrupt production or distribution, or require substantial resources to correct.

From time to time, legislation is drafted, introduced and passed in Congress that could significantly change the statutory provisions governing the approval, manufacturing and marketing of products regulated by the FDA. In addition, FDA regulations and guidance are often revised or reinterpreted by the agency in ways that may significantly affect our business and our products. It is impossible to predict whether legislative changes will be enacted, or FDA regulations, guidance or interpretations changed or what the impact of such changes, if any, may be.

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 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.

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As in the United States, we may apply for designation of a product as an orphan drug for the treatment of a specific indication in the European Union before the application for marketing authorization is made. Orphan drugs in Europe enjoy economic and marketing benefits, including up to 10 years of market exclusivity for the approved indication unless another applicant can show that its product is safer, more effective or otherwise clinically superior to the orphan-designated product.

Reimbursement

Sales of our products will depend, in part, on the extent to which our products will be covered by third-party payors, such as government health programs, commercial insurance and managed healthcare organizations. These third-party payors are increasingly reducing reimbursements 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 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.

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA, established the Medicare Part D program to provide a voluntary prescription drug benefit to Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities which will provide coverage of outpatient prescription drugs. Unlike Medicare Part A and B, Part D coverage is not standardized. Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, though not necessarily all the drugs in each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. Government payment for some of the costs of prescription drugs may increase demand for products for which we receive marketing approval. However, any negotiated prices for our products covered by a Part D prescription drug plan will likely be lower than the prices we might otherwise obtain. Moreover, while the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment that results from the MMA may result in a similar reduction in payments from non-governmental payors.

The American Recovery and Reinvestment Act of 2009 provides funding for the federal government to compare the effectiveness of different treatments for the same illness. A plan for the research will be developed by the Department of Health and Human Services, the Agency for Healthcare Research and Quality and the National Institutes for Health, and periodic reports on the status of the research and related expenditures will be made to Congress. Although the results of the comparative effectiveness studies are not intended to mandate coverage policies for public or private payors, it is not clear what effect, if any, the research will have on the sales of our product candidates, if any such product or the condition that it is intended to treat is the subject of a study. It is also possible that comparative effectiveness research demonstrating benefits in a competitor's product could adversely affect the sales of our product candidates. If

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third-party payors do not consider our products to be cost-effective compared to other available therapies, they may not cover our products after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our products on a profitable basis.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act of 2010, known collectively as ACA, enacted in March 2010, is expected to have a significant impact on the health care industry. ACA is expected to expand coverage for the uninsured while at the same time containing overall healthcare costs. With regard to pharmaceutical products, among other things, ACA is expected to expand and increase industry rebates for drugs covered under Medicaid programs and make changes to the coverage requirements under the Medicare Part D program. We cannot predict the impact of ACA on pharmaceutical companies as many of the ACA reforms require the promulgation of detailed regulations implementing the statutory provisions which has not yet occurred. In addition, the current legal challenges to ACA, as well as congressional efforts to repeal ACA, add to the uncertainty of the legislative changes enacted as part of ACA.

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.

Legal Proceedings

We are not currently a party to any material legal proceedings.

Facilities

Our headquarters are located in New Haven, Connecticut, where we occupy approximately 27,600 square feet of office and laboratory space. The term of the lease expires August 31, 2015. We have two options to extend the lease, each for an additional three years, provided that we provide notice to the landlord at least nine months prior to the expiration of the term of the lease.

Employees

As of March 31, 2012, we had 43 full-time employees, 33 of whom were primarily engaged in research and development activities. A total of 22 employees have an M.D. or Ph.D. degree. None of our employees are represented by a labor union and we consider our employee relations to be good.

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MANAGEMENT

Executive Officers and Directors

Our executive officers and directors and their respective ages and positions as of March 31, 2012 are as follows:

Name	Age	Position
Executive Officers		
Mark Leuchtenberger (1)	55	President, Chief Executive Officer and Director
Robert A. Conerly	52	Chief Financial Officer and Vice President, Finance
Erin M. Duffy, Ph.D.	43	Chief Scientific Officer
Scott J. Hopkins, M.D.	60	Chief Medical Officer
Jarrod Longcor	39	Vice President, Corporate Development
Anthony Sabatelli, Ph.D., J.D.	54	Vice President, Intellectual Property and Authorized House Counsel
Colleen Wilson	35	Director, Human Resources
Non-Employee Directors		
George M. Milne, Jr., Ph.D. (1)(2)(4)	68	Chairman of the Board
C. Boyd Clarke (1)(2)	63	Director
Cecilia Gonzalo (1)(3)	37	Director
Jonathan S. Leff (1)(4)	43	Director
Harry H. Penner Jr., J.D., L.L.M. (1)(2)(3)(4)	66	Director

(1) See "Certain Relationships and Related Person Transactions — Agreements with Stockholders" for a discussion of arrangements among our stockholders pursuant to which this director was selected.
(2) Member of audit committee.
(3) Member of compensation committee.
(4) Member of nominating and governance committee.

Executive Officers

Mark Leuchtenberger has been our President, Chief Executive Officer and a member of our board of directors since March 2010, bringing experience in commercial operations, business development and preparing biopharmaceutical companies for product approval and commercialization. Prior to joining us, he served as President and Chief Executive Officer of Targanta Therapeutics Corporation, a biopharmaceutical company, from September 2006 until August 2009, following Targanta's acquisition. As President and Chief Executive Officer at Targanta, he led its initial public offering in 2007 and its acquisition in 2009. From March 2002 to August 2006, Mr. Leuchtenberger served as the President and Chief Executive Officer of Therion Biologics Corporation, a privately-held cancer vaccine company. Prior to Therion, Mr. Leuchtenberger was a senior officer at Biogen Idec Inc., where he led the Avonex development and launch in the United States and subsequently managed North American and international commercial operations. Mr. Leuchtenberger received his M.B.A. from the Yale School of Management and his B.A. from Wake Forest University. He currently serves on the Executive Committee of the Massachusetts Biotechnology Council Board of Directors and as a trustee for Beth Israel Deaconess Medical Center. He is a co-founder of Albor Biologics, Inc. and Alvos Therapeutics, Inc. We believe that Mr. Leuchtenberger possesses specific attributes that qualify him to serve as a member of our board of directors, including the perspective and experience he brings as our Chief Executive Officer, which brings historic knowledge, operational expertise and continuity to our board of directors, and his prior executive experience as chief executive officer of two previous biotechnology companies.

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Robert A. Conerly has been our Chief Financial Officer and Vice President, Finance since June 2002. Prior to joining us, Mr. Conerly served as Chief Financial Officer and Vice President of Finance of Pharmion Corporation from January 2001 to December 2001. Prior to Pharmion, Mr. Conerly spent six years at AstraZeneca PLC, both in the U.S. and Europe, in numerous financial positions. As Director of Business Performance for the then newly-merged AstraZeneca, he led senior management in the development and monitoring of performance objectives. Mr. Conerly began his professional career at Price Waterhouse where he advanced to Senior Manager and worked in Audit Advisory Services, the Entrepreneurial Services Center and the Mergers and Acquisitions Group. Mr. Conerly earned his M.B.A. and B.S. from the University of Missouri.

Erin M. Duffy, Ph.D. has been our Chief Scientific Officer since July 2011. She was previously our Vice President, Discovery Research from May 2007 to July 2011, Executive Director, Structure-Based Drug Discovery from January 2007 to May 2007, Senior Director, Structure-Based Drug Discovery from January 2005 to January 2007 and Director, Structure-Based Drug Discovery from January 2002 to January 2005. Prior to joining us in January 2002, Dr. Duffy was the Associate Director of Innovative Discovery Technologies at Achillion Pharmaceuticals, Inc. Prior to that, she was a computational chemist with Pfizer Global Research and Development. Dr. Duffy earned her Ph.D. and M.S. in chemistry from Yale University and her B.S. from Wheeling Jesuit College.

Scott J. Hopkins, M.D. has been our Chief Medical Officer since September 2008 and previously was our Vice President, Clinical Development from October 2002 to September 2008. Until October 2002, Dr. Hopkins served on our scientific advisory board and as our consultant since October 2000. Prior to joining us as an employee, Dr. Hopkins held global responsibility for the clinical development of anti-infective agents at Pfizer Inc., including development of Zithromax, Diflucan and Trovan. Dr. Hopkins earned his M.D. from the University of Virginia School of Medicine and his A.B. from Princeton University.

Jarrod Longcor has been our Vice President, Corporate Development since June 2011. From July 2009 to June 2011, Mr. Longcor was our Senior Director, Business Development and from October 2007 to July 2009, he was our Director, Business Development. Mr. Longcor has over 15 years of industry experience with 13 years of experience doing business development. Prior to joining us, Mr. Longcor served as Senior Director of Business Development at MaxCyte, Inc. from March 2006 to July 2007, where he was responsible for developing and executing a market partnering strategy and for corporate and product marketing as well as alliance management. From September 2005 to March 2006, Mr. Longcor was a business development consultant for several small biotechnology and pharmaceutical companies and from January 2004 to September 2005, he served as the Senior Director of Business Development for Advancis Pharmaceutical Corporation. Mr. Longcor received his M.B.A. from the Erivan K. Haub School of Business at St. Joseph's University, Masters of Medicine from Boston University School of Medicine and his B.S. from Dickinson College.

Anthony Sabatelli, Ph.D., J.D. has been our Vice President, Intellectual Property and Authorized House Counsel since January 2008. Currently, Dr. Sabatelli is also an adjunct professor of chemistry at the University of New Haven and from August 2010 through December 2010, Dr. Sabatelli was an adjunct professor of chemistry at Central Connecticut State University. From December 2002 through December 2007, Dr. Sabatelli was our Assistant Vice President. Dr. Sabatelli joined us in December 2002 from Merck & Co., where he was Assistant Patent Counsel from April 2000 to November 2002 and Senior Patent Attorney from May 1997 to April 2000. Prior to joining Merck, he was Patent Counsel at the Procter & Gamble Company. Dr. Sabatelli began his professional career at Procter & Gamble's Miami Valley Laboratories as a

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research and development scientist before he moved to their patent department. Dr. Sabatelli earned his Ph.D. from Yale University, his J.D. from Salmon P. Chase College of Law and his B.S. from Fairfield University.

Colleen Wilson has been our Director, Human Resources since January 2011. Prior to joining us, she was Manager, Human Resources at Infinity Pharmaceuticals, Inc. from March 2009 to January 2011, where she was responsible for recruiting new members to the leadership team and for playing an important role in organizational growth and design initiatives. From May 2007 to February 2009, Ms. Wilson was Senior Manager, Human Resources, at Targanta Therapeutics Corporation, where she played a key role in establishing the human resources function for the new company and in developing the commercial sales infrastructure. She also held human resources roles at Genzyme Corporation from September 2006 to May 2007 and Therion Biologics from November 2002 to June 2006. Ms. Wilson received her B.S. from the University of New Hampshire and is currently pursuing an M.B.A. from Babson College.

Board of Directors

George M. Milne, Jr., Ph.D. has served on our board of directors since January 2004. He has served as chairman of our board of directors since May 2010 and previously served as executive chairman of our board of directors from June 2008 to May 2010. Since January 2003, Dr. Milne has been a venture partner of Radius Ventures, LLC. From 1970 to July 2002, Dr. Milne held various management positions with Pfizer Corporation, including most recently Executive Vice President, Pfizer Global Research and Development and President, Worldwide Strategic and Operations Management. Dr. Milne was also a Senior Vice President of Pfizer Inc. and a member of the Pfizer Management Council. He was President of Central Research from 1993 to July 2002 with global responsibility for Pfizer's Human and Veterinary Medicine Research and Development. Dr. Milne received his Ph.D. in chemistry from Massachusetts Institute of Technology and his B.S. from Yale University. Dr. Milne is a director of Athersys Inc., Charles River Laboratories, Inc. and Mettler-Toledo International Inc. and also serves on the board of directors of several private companies. He was previously a director of Aspreva, Inc., Conor Medsystems, Inc. and MedImmune, Inc. We believe that Dr. Milne possesses specific attributes that qualify him to serve as a member of our board of directors, including more than 30 years experience in senior executive management roles with large, international businesses. In addition, because Dr. Milne has served on many boards of directors, we believe he has substantial experience regarding how boards can and should effectively oversee and manage companies, and a significant understanding of governance issues.

C. Boyd Clarke has served on our board of directors since July 2004 and has been the chairman of our audit committee since August 2007. Since September 2007, Mr. Clarke has been a venture advisor to ProQuest Investments, a healthcare venture capital firm. From April 2002 to June 2006, Mr. Clarke was president and chief executive officer of Neose Technologies, Inc., a publicly-traded biotechnology company focused on the development of protein therapeutics. Mr. Clarke served on the board of directors of Neose from 2002 to May 2007. From December 1999 through March 2002, Mr. Clarke was president and chief executive officer of Aviron, Inc., a biotechnology company developing vaccines, which was acquired by MedImmune, Inc., and was also chairman from January 2001 through March 2002. From 1998 through 1999, Mr. Clarke was chief executive officer and president of U.S. Bioscience, Inc., a biotechnology company focused on products to treat cancer, which was also acquired by MedImmune, Inc. Mr. Clarke served as president and chief operating officer of U.S. Bioscience, Inc. from 1996 to 1998. From 1977 to 1996, Mr. Clarke held a number of positions at Merck & Co., Inc., including being the first President of Pasteur-Merieux MSD, and most recently as vice president of Merck Vaccines. Mr. Clarke was formerly a director of the Biotechnology Industry

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Association. He is currently chairman of the board of directors of QLT Inc., publicly-traded biotechnology company. He also serves on the board of directors of NovaDigm Therapeutics, Inc., Palkion, Inc. and Ligocyte Pharmaceuticals, Inc., and as chairman of the board of Mersana Therapeutics, Inc., all of which are privately-held biotechnology companies. Mr. Clarke received his B.S. in biochemistry and his M.A. in history from the University of Calgary. We believe that Mr. Clarke possesses specific attributes that qualify him to serve as a member of our board of directors, including his experience building, investing in and growing biotechnology companies. In addition, because Mr. Clarke has served on many boards of directors, we believe he has substantial experience regarding how boards can and should effectively oversee and manage companies, and a significant understanding of governance issues.

Cecilia Gonzalo has served on our board of directors since February 2010. Ms. Gonzalo has been a partner of Warburg Pincus & Co. and a member and managing director of Warburg Pincus LLC since January 2010. She was previously a principal of Warburg Pincus LLC from January 2006 to December 2009. She joined Warburg Pincus in 2001 and focuses on healthcare investments in the pharmaceuticals, biotechnology and healthcare services sectors. Prior to joining Warburg Pincus, Ms. Gonzalo worked at Goldman Sachs in the Investment Banking Division focusing on corporate finance and mergers and acquisitions transactions in Latin America, as well as in the Principal Investment Area focusing on investments in the region. She received her B.A. cum laude in biochemical sciences from Harvard College and her M.B.A. from Harvard Business School. Ms. Gonzalo is a director of Allos Therapeutics, Inc. and Talon Therapeutics, Inc. Ms. Gonzalo was previously a director of several biopharmaceutical companies, including Prestwick Pharmaceuticals, Inc. and Eurand N.V. We believe that Ms. Gonzalo possesses specific attributes that qualify her to serve as a member of our board of directors, including experience building, investing in and growing biotechnology companies. In addition, because Ms. Gonzalo has served on several boards of directors of public and private companies, we believe she has substantial experience regarding how boards can and should effectively oversee and manage companies, and a significant understanding of governance issues.

Jonathan S. Leff has served on our board of directors since April 2003. Mr. Leff has been a partner of Warburg Pincus & Co. and a member and managing director of Warburg Pincus LLC since January 2000. Mr. Leff joined Warburg Pincus in 1996. Prior to joining Warburg Pincus, he was a consultant at Oliver, Wyman & Co. Mr. Leff received his A.B. in Government from Harvard College and his M.B.A. from the Stanford University Graduate School of Business. Mr. Leff is a director of Allos Therapeutics, Inc., InterMune, Inc., Sophiris Bio, Inc. and Talon Therapeutics, Inc. as well as several private companies. He is also a member of the boards of directors of several industry groups and non-profit organizations, including the Biotechnology Industry Organization, the National Venture Capital Association and the Spinal Muscular Atrophy Foundation, and a member of the board of visitors of Columbia University Medical Center. Mr. Leff was previously a director of Altus Pharmaceuticals Inc., Inspire Pharmaceuticals, Inc., Neurogen Corporation, Sunesis Pharmaceuticals, Inc. and ZymoGenetics, Inc. as well as several private companies. We believe that Mr. Leff possesses specific attributes that qualify him to serve as a member of our board of directors, including his experience building, investing in and growing biotechnology companies and extensive experience in finance, capital markets and investing. In addition, because Mr. Leff has served on many boards of directors, we believe he has substantial experience regarding how boards can and should effectively oversee and manage companies, and a significant understanding of governance issues.

Harry H. Penner Jr., J.D., L.L.M. has served on our board of directors since June 2001 and has been the chairman of our compensation committee since January 2009. Mr. Penner served as chairman of our board of directors from June 2001 until June 2008. Mr. Penner is chairman

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and chief executive officer of Nascent BioScience, LLC, a firm engaged in the creation and development of new biotechnology companies, since October 2001. Since August 2008, Mr. Penner has been the chief executive officer and chairman of the board of directors of New Haven Pharmaceuticals, Inc. From December 2004 to October 2007, Mr. Penner was chief executive officer and chairman of the board of directors of Marinus Pharmaceuticals, Inc., a privately-held specialty pharmaceutical company. From 1993 to 2001, Mr. Penner was president, chief executive officer and vice chairman of Neurogen Corporation. From 1985 to 1993, Mr. Penner was an executive vice president of Novo Nordisk A/S, serving from 1988 to 1993 as executive vice president for North America and president, Novo Nordisk of North America, and from 1985 to 1988 as the company's executive vice president and general counsel in Denmark. He has served as bioscience advisor to the Governor and the State of Connecticut, as co-chairman of Connecticut United for Research Excellence, and as chairman of the Connecticut Board of Governors of Higher Education and the Connecticut Technology Council. Mr. Penner serves on the board of directors of Celldex Therapeutics, Inc., New Haven Pharmaceuticals, Inc. (of which he is chairman), Prevention Pharmaceuticals, Inc. (of which he is chairman) and Affinimark Technologies, Inc. (of which he is chairman) and Marinus Pharmaceuticals, Inc. In addition to having served on the board of directors of privately held biotechnology companies, Mr. Penner served on the board of Altus Pharmaceuticals, Inc. until October 2009. Mr. Penner received his B.A. from the University of Virginia, his J.D. from Fordham University School of Law, and his L.L.M. in international law from New York University School of Law. We believe that Mr. Penner possesses specific attributes that qualify him to serve on our board of directors, including experience building, investing in and growing biotechnology companies and more than 20 years experience in senior executive management roles with large, international businesses. In addition, because Mr. Penner has served on many boards of directors, we believe he has substantial experience regarding how boards can and should effectively oversee and manage companies, and a significant understanding of governance issues.

Composition of our Board of Directors

Our board of directors currently consists of six members, five of whom are non-employee directors, and one vacancy. Our directors hold office until their successors have been elected and qualified or until the earlier of their death, resignation or removal. There are no family relationships among any of our directors or executive officers.

In accordance with our restated certificate of incorporation and restated by-laws, our board of directors will be divided into three classes with staggered three-year terms. At each annual meeting of stockholders commencing with the meeting in 2013, the successors to the directors whose terms then expire will be elected to serve until the third annual meeting following the election. At the closing of the offering made hereby, our directors will be divided among the three classes as follows:

- the Class I directors will be George M. Milne, Jr. and Harry H. Penner, Jr. and their terms will expire at the annual meeting of stockholders to be held in 2013;
- the Class II directors will be C. Boyd Clarke and Cecilia Gonzalo and their terms will expire at the annual meeting of stockholders to be held in 2014; and
- the Class III directors will be Jonathan S. Leff, Mark Leuchtenberger and the individual who fills the current vacancy, and their terms will expire at the annual meeting of stockholders to be held in 2015.

Our restated certificate of incorporation provides that the authorized number of directors comprising our board of directors shall be fixed by a majority of the total number of directors.

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Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that each class will consist of approximately one-third of the directors.

Director Independence

Under Rules 5605 and 5615 of the NASDAQ Marketplace Rules, a majority of a listed company's board of directors must be comprised of independent directors within one year of listing. In addition, NASDAQ Marketplace Rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and governance and nominating committees be independent and that audit committee members also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act. Under Rule 5605(a)(2) of the NASDAQ Marketplace Rules, a director will only qualify as an "independent director" if, in the opinion of that company's 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.

Based upon information requested from and provided by each director concerning their background, employment and affiliations, including family relationships, our board of directors has determined that none of Dr. Milne, Messrs. Clarke, Leff and Penner, and Ms. Gonzalo, representing five of our six directors, has a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under Rule 5605(a)(2) of the NASDAQ Marketplace Rules. Our board of directors also determined that Messrs. Clarke and Penner and Dr. Milne, who comprise our audit committee; Mr. Penner and Ms. Gonzalo, who comprise our compensation committee; and Dr. Milne and Messrs. Leff and Penner, who comprise our nominating and governance committee, all satisfy the independence standards for such committees established by Rule 10A-3 under the Exchange Act, the SEC and the NASDAQ Marketplace Rules, as applicable. In making such determination, the board of directors considered the relationships that each such non-employee director has with our company and all other facts and circumstances the board of directors deemed relevant in determining their independence.

Committees of the Board of Directors

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee. Each committee operates under a charter approved by our board of directors. Following the closing of this offering, copies of each committee's charter will be posted on the Investor Relations section of our website, which is located at www.rib-x.com. The composition and function of each of these committees are described below.

Audit Committee. Upon the completion of this offering, our audit committee will be comprised of Messrs. Clarke and Penner and Dr. Milne. Our board of directors has determined that Mr. Clarke is an audit committee financial expert, as defined by the rules of the SEC, and satisfies the financial sophistication requirements of applicable NASDAQ rules. Our audit committee is authorized to:

- approve and retain the independent auditors to conduct the annual audit of our financial statements;
- review the proposed scope and results of the audit;
- review and pre-approve audit and non-audit fees and services;

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- review accounting and financial controls with the independent auditors and our financial and accounting staff;
- review and approve transactions between us and our directors, officers and affiliates;
- recognize and prevent prohibited non-audit services;
- establish procedures for complaints received by us regarding accounting matters; and
- oversee internal audit functions, if any.

We believe that the composition of our audit committee meets the independence requirements of the applicable rules of the Securities and Exchange Commission and NASDAQ on the date of this prospectus.

Compensation Committee. Upon completion of this offering, our compensation committee will be comprised of Mr. Penner and Ms. Gonzalo. Our compensation committee is authorized to:

- review and recommend the compensation arrangements for management;
- establish and review general compensation policies with the objective to attract and retain superior talent, to reward individual performance and to achieve our financial goals;
- administer our stock incentive and purchase plans;
- ensure appropriate leadership development and succession planning is in place; and
- oversee the evaluation of management.

Nominating and Governance Committee. Upon completion of this offering, our nominating and governance committee will be comprised of Dr. Milne and Messrs. Leff and Penner. Our nominating and governance committee is authorized to:

- identify and nominate candidates for election to the board of directors;
- review and recommend the compensation arrangements for certain members of our board of directors;
- develop and recommend to the board of directors a set of corporate governance principles applicable to our company; and
- oversee the evaluation of our board of directors.

Compensation Committee Interlocks and Insider Participation

No member of our compensation committee has at any time been an employee of ours. None of our executive officers serves as a member of another entity's board of directors or compensation committee that has one or more executive officers serving as a member of our board of directors or compensation committee.

Code of Business Conduct and Ethics

We have adopted a code of business conduct and ethics to be effective upon completion of this offering that will apply to all of our employees, officers and directors, including those officers responsible for financial reporting. The code of business conduct and ethics will be available on our website at www.rib-x.com upon completion of this offering. We expect that any amendments to the code, or any waivers of its requirements, will be disclosed on our website.

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Limitation of Directors' and Officers' Liability and Indemnification

The Delaware General Corporation Law authorizes corporations to limit or eliminate, subject to specified conditions, the personal liability of directors to corporations and their stockholders for monetary damages for breach of their fiduciary duties. Our existing seventh amended and restated certificate of incorporation and the restated certificate of incorporation to be effective upon the completion of this offering limit the liability of our directors to the fullest extent permitted by Delaware law.

We have obtained director and officer liability insurance to cover liabilities our directors and officers may incur in connection with their services to us. Our restated certificate of incorporation and restated by-laws to be effective upon the completion of this offering also provide that we will indemnify and advance expenses to any of our directors and officers who, by reason of the fact that he or she is one of our officers or directors, is involved in a legal proceeding of any nature. We will repay certain expenses incurred by a director or officer in connection with any civil, criminal, administrative or investigative action or proceeding, including actions by us or in our name. Such indemnifiable expenses include, to the maximum extent permitted by law, attorney's fees, judgments, fines, ERISA excise taxes, penalties, settlement amounts and other expenses reasonably incurred in connection with legal proceedings. A director or officer will not receive indemnification if he or she is found not to have acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interest.

We will enter into indemnification agreements with each of our directors and certain of our officers. These agreements provide that we will, among other things, indemnify and advance expenses to our directors and officers for certain expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by any such person in any action or proceeding, including any action by us arising out of such person's services as our director or officer, or any other company or enterprise to which the person provides services at our request. We believe that these provisions and agreements are necessary to attract and retain qualified persons as directors and officers.

Such limitation of liability and indemnification does not affect the availability of equitable remedies. In addition, we have been advised that in the opinion of the SEC, indemnification for liabilities arising under the Securities Act is against public policy as expressed in the Securities Act and is therefore unenforceable.

There is no pending litigation or proceeding involving any of our directors, officers, employees or agents in which indemnification will be required or permitted. We are not aware of any threatened litigation or proceeding that may result in a claim for such indemnification.

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EXECUTIVE COMPENSATION

Compensation Discussion and Analysis

This section discusses the principles underlying our policies and decisions with respect to the compensation of our executive officers who are named in the "Summary Compensation Table", or our "named executive officers", and all material factors relevant to an analysis of these policies and decisions. Our named executive officers for the fiscal year ended December 31, 2011 were:

- Mark Leuchtenberger, our President and Chief Executive Officer;
- Robert A. Conerly, our Chief Financial Officer and Vice President, Finance;
- Scott J. Hopkins, M.D., our Chief Medical Officer;
- Erin M. Duffy, Ph.D., our Chief Scientific Officer; and
- Anthony Sabatelli, Ph.D., J.D., our Vice President, Intellectual Property and Authorized House Counsel.

Objectives of Executive Compensation Program

Our compensation committee of our board of directors has responsibility for establishing and monitoring our executive compensation program. The primary objectives of our compensation committee with respect to executive compensation are to attract, retain and motivate executive officers who make important contributions to the achievement of our business goals and success. Our compensation committee believes that the most effective executive compensation program rewards the achievement of annual, long-term and strategic goals of our company. Our executive compensation program has been designed to link short and long-term cash and equity incentives to the achievement of measurable corporate and individual performance objectives, and to align executives' incentives with stockholder value creation. To achieve these objectives, our compensation committee has maintained, and expects to further implement, compensation plans that tie a substantial portion of executive officers' overall compensation to our research, development, and operational performance.

As a privately held company, we have not historically retained compensation consultants to review our policies and procedures relating to executive compensation. Our compensation committee, with the input of management, has developed our compensation programs by utilizing publicly available compensation data and subscription compensation survey data for national and regional companies in the biopharmaceutical industry, as set forth in the Radford Life Sciences Executive Survey. Our compensation committee also reviews this data and then determines appropriate compensation based on the experience of the members of our compensation committee and including information obtained from contacts at executive search firms.

Based on our overall objectives and philosophy, our compensation committee has designed an executive compensation program that generally seeks to bring base salaries and total executive compensation in line with the compensation data obtained as described in the paragraph above, for companies with a similar number of employees. Our compensation committee then determines each component of an executive's compensation based on a number of factors, including (a) the executive's overall experience and skills (with an emphasis on particular industry experience), (b) the executive's position and responsibilities in comparison to other executives at the company and (c) the demand within our market for the executive's skills relative to other executives in our industry.

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Our compensation committee has also implemented an annual performance management program, under which annual corporate and individual goals are proposed by management and approved by our board of directors at the end of each calendar year for the following year. These corporate goals include the achievement of qualitative and quantitative operational and financial targets and pre-defined research and development milestones. Each goal is weighted as to importance by our board of directors. The individual performance of our executive officers is evaluated based on the level of achievement of corporate and individual goals including those related to their respective areas of responsibility as well as on individual professional development, including an assessment of management, communication and leadership skills. Annual salary increases, annual bonuses, and annual stock option awards granted to our executive officers are tied to the achievement of the individual and corporate goals. Our board of directors, generally based on a recommendation of our compensation committee, approves all salary increases, as well as bonuses and stock option awards, if any, for executive officers. Annual base salary increases, annual stock option awards, and annual bonuses, to the extent granted, are generally implemented during the first calendar quarter of the year.

Components of our Executive Compensation Program

The principal components of our executive compensation program are base salary, annual bonus, and long-term incentives. Our compensation committee believes that each component of executive compensation must be evaluated and determined with reference to competitive market data, individual and corporate performance, our recruiting and retention goals, internal equity and consistency, and other information we deem relevant. We believe that in the biopharmaceutical industry, stock option awards are a primary motivator in attracting and retaining executives, in addition to salary and cash incentive bonuses.

The terms of each executive officer's compensation are derived from our employment agreements entered into between us and them and annual performance reviews conducted by our compensation committee, in the case of Mr. Leuchtenberger, and by our compensation committee after obtaining Mr. Leuchtenberger's recommendations in the case of the other executive officers. Annual base salary increases, annual stock option awards and cash bonuses, if any, for Mr. Leuchtenberger are determined by our compensation committee. Mr. Leuchtenberger recommends annual base salary increases, annual stock option awards and cash bonuses, if any, for the other executive officers, which are reviewed and approved by our compensation committee.

The components of our compensation package are as follows:

Base Salary

We provide base salaries for our executives to compensate them for their services rendered during the fiscal year. Base salary ranges for named executive officers are established based on their position and scope of responsibilities, their prior experience and training, and competitive market compensation data we review for similar positions in our industry.

Our compensation committee reviews base salaries annually as part of our performance management program. Base salaries may be increased for merit reasons, based on the executive's success in meeting or exceeding individual performance objectives and an assessment of whether significant corporate and individual goals were achieved. Additionally, we may adjust base salaries throughout the year for promotions or other changes in the scope or breadth of an executive's role or responsibilities.

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Annual Bonus

A significant element of the cash compensation of our executive officers is an annual performance-based cash bonus. An executive's target bonus is generally set as a percentage of base salary to reward strong performance and retain employees in a competitive labor market. Bonuses are based on the achievement of significant company goals, including research, development, financial and operational milestones, as well as the achievement of individual goals. Currently, our Chief Executive Officer is eligible for an annual performance-based cash bonus with a target of 50% of his base salary, our Chief Financial Officer, Chief Medical Officer and Chief Scientific Officer are eligible for annual performance-based cash bonuses with a target of 30% of their base salaries and our Vice President, Intellectual Property is eligible for an annual performance-based cash bonus with a target of 15% of his base salary. Additionally, our board of directors or our compensation committee may increase or decrease an executive's bonus payment above or below the target based on its assessment of an executive's individual performance during a given year. See "—2011 Compensation Decisions and Performance Targets" below.

Long-Term Incentives.

Our equity-based long-term incentive program is designed to align executives' long-term incentives with stockholder value creation. We believe that long-term participation by our executive officers in equity-based awards is a critical factor in the achievement of long-term company goals and business objectives. Our 2001 Stock Option and Incentive Plan, which expired in September 2011, allowed, and our 2011 Equity Incentive Plan also allows, the grant to all employees, including our executive officers, of stock options as well as other types of equity awards. We typically make an initial award of stock options to new employees and annual stock option grants as part of our overall compensation program. Annual grants of options to our executive officers other than our Chief Executive Officer are recommended by the Chief Executive Officer and finalized by our compensation committee and/or our board of directors. Annual grants of options to our Chief Executive Officer are made by our compensation committee and/or our board of directors.

In the absence of a public trading market for our common stock, our board of directors has determined the fair market value of our common stock in good faith based upon consideration of a number of relevant factors including our financial condition, the likelihood of a liquidity event, the prices at which our convertible preferred stock was sold, the enterprise values of comparable companies, our cash needs, operating losses, market conditions, material risks to our business and valuations obtained from independent valuation firms. All equity awards to our employees, consultants and directors were granted at no less than the fair market value of our common stock as determined in good faith by our board of directors on the date of grant of each award. See also our discussion of stock-based compensation under "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies and Significant Judgments and Estimates."

Initial stock option awards. We typically make an initial award of stock options to new executives in connection with the commencement of their employment. These grants generally have an exercise price equal to the fair market value of our common stock on the grant date and vest 25% on the first anniversary of the date of hire and in equal monthly increments thereafter for the next three years. The initial stock option awards are intended to provide the executive with incentive to build value in the organization over an extended period of time and to maintain competitive levels of total compensation. The size of the initial stock option award is determined based on numerous factors, including the executive's skills and experience, the executive's responsibilities with us, internal equity and an analysis of the practices of national and regional companies in the biopharmaceutical industry similar in size to us.

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Annual stock option awards. Our practice has been to make annual stock option awards as part of our overall performance management program. In 2011, however, no grants were made to any of our named executive officers pursuant to this element of our compensation practice. We intend that the annual aggregate value of these awards will be set near competitive median levels for companies represented in the compensation data we review. As is the case when the amounts of base salary and initial equity awards are determined, a review of all components of the executive's compensation is conducted when determining annual equity awards to ensure that an executive's total compensation conforms to our overall philosophy and objectives.

Management Bonus Plan. In April 2012, our board of directors approved an amended management bonus plan that has been designed to incentivize our executives and other key employees to increase the value and attractiveness of our company in connection with specified events. This plan provides for potential payments or grants of restricted stock units in the event of a sale, initial public offering or reverse merger transaction involving us in which either the proceeds of an initial public offering or our valuation in a sale or reverse merger exceeds $52.5 million, which we refer to as the triggering event valuation. Our compensation committee shall determine the eligible individuals who are to receive a payment or grants of restricted stock units under the plan upon the consummation of the sale, initial public offering or reverse merger event, which shall equal, in the aggregate, 10% of the triggering event valuation in excess of $52.5 million.

In the event of a sale, the form of the payment shall be cash, securities, other consideration or any combination of those forms, in order to parallel the type of consideration received by us or by our shareholders in the sale. In the event of an initial public offering or reverse merger, the form of the payment shall be grants of restricted stock units that upon vesting will require us to issue shares of our common stock or shares of the resulting or acquiring company in a reverse merger. The number of shares subject to each grant of restricted stock units will be calculated by dividing the bonus amount by the triggering event per share valuation and rounding down to the nearest whole share. Any restricted stock units will vest as follows: (i) 50% of each grant of restricted stock units will vest on the first anniversary of the triggering event and (ii) the remainder of each grant of restricted stock units will vest pro rata on a quarterly basis over the next three years, provided the participant remains employed by us on the applicable vesting dates. In addition, each restricted stock unit will vest in full upon a merger, reorganization or other consolidation of us, including the sale of substantially all of our assets, in which we are not the surviving entity and in which the persons holding our outstanding equity immediately prior to the transaction own less than 50% of the surviving entity's total voting power immediately after the transaction, subject to the participant's continuous employment by us through the date of such merger, reorganization or other consolidation of us. In addition, in the case of a reverse merger in which our triggering event valuation is less than the enterprise value of the constituent entities to the reverse merger other than us, the vesting of the restricted stock units would be subject to full acceleration if the participant's employment with us is terminated by us other than for cause, or by the participant for good reason, prior to the first anniversary of the reverse merger. Our named executive officers may be among the people who receive a cash bonus or grants of restricted stock units under this plan. Each eligible individual's bonus amount shall be equal to the amount, if any, by which the individual's target bonus amount, as determined by our compensation committee, exceeds the value of the options to purchase shares of our common stock held by such individual as of the date of the sale, initial public offering or reverse merger event. This plan will terminate on June 30, 2012.

We do not currently have any securities ownership requirements for our named executive officers.

Other Compensation

We maintain broad-based benefits and perquisites that are provided to all eligible employees, including health insurance, life and disability insurance, dental insurance and paid vacation.

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2011 Compensation Decisions and Performance Targets

In 2011, the target amount for the performance-based cash bonus for our Chief Executive Officer, Mr. Leuchtenberger, was 50% of his base salary, the target amount for our Chief Financial Officer, Chief Medical Officer and Chief Scientific Officer was 30% of their base salaries, and the target amount for our Vice President, Intellectual Property was 15% of his base salary. In early 2012, the specific awards for 2011 based on these target amounts were determined by our compensation committee based on the achievement of the performance metrics described below.

During 2011, upon the recommendation of our compensation committee, our board of directors decided, consistent with past practices, that the annual cash bonus for Mr. Leuchtenberger would be based entirely on the achievement of corporate objectives. Our compensation committee approved a set of corporate and individual objectives recommended by Mr. Leuchtenberger and assigned weights ranging from 5% to 30% for the achievement of each objective. These objectives were then communicated to each named executive officer. The primary factor in establishing the weights was their level of importance to our business, with the expectation that a majority of the goals were achievable with appropriate and diligent effort under the leadership of Mr. Leuchtenberger and our executive team but that achievement of all objectives would represent extraordinary performance on their part.

The corporate goals for performance during 2011, and their relative weighting, were as follows:

- Delafloxacin Program: Execute a Phase 2 trial reporting successful top line results, develop and successfully test an oral formulation and maintain the timeline to Phase 3 initiation (30% weighting);
- Radezolid Program: Complete both a long-term safety study and an IV formulation study (5% weighting);
- RX-04 Program: Complete partnership agreement and studies to identify multiple candidates for toxicology studies (30% weighting);
- RX-05 Program: Achieve proof of concept (10% weighting); and
- Financial Planning: Develop and implement a successful financial plan and prepare us for an initial public offering and associated outreach activities (25% weighting).

In early 2012, our compensation committee evaluated the achievement during 2011 of the corporate performance goals with Mr. Leuchtenberger. While each corporate objective was initially assigned a weight for purposes of determining the amount of Mr. Leuchtenberger's bonus, our compensation committee, in its discretion, evaluated the achievement of the objectives in the context of our overall business and determined that we achieved 89% of our stated corporate objectives. This determination was based on our achievement of 90% of our goals for the delafloxacin program, 100% of our goals for the radezolid program, 90% of our goals for the RX-04 program, 100% of our goals for the RX-05 program, and 80% of our financial planning goals and was calculated by taking the weighted average of these percentages using the weightings listed above. Our compensation committee approved Mr. Leuchtenberger's award for 2011 at $186,900, or 89% of his target amount.

Our 2011 cash incentive bonus program for our other named executive officers, excluding our Chief Executive Officer, was based 50% upon the achievement of the corporate goals described above and 50% upon the achievement of individual goals. The individual goals were set early in 2011 upon the recommendation of our Chief Executive Officer and with the approval of our compensation committee. In February 2012, our compensation committee determined the specific awards for 2011 based on the individual levels of achievement.

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Individual goals were tailored to each named executive officer's role within the organization, other than our Chief Executive Officer, based upon achievement of departmental objectives relating to, among other things, research and development accomplishments, establishing corporate infrastructure and achieving budgetary targets. The individual goals were also designed to focus on each such named executive officer's contribution to the corporate objectives described above. Each of Drs. Hopkins and Duffy are in a key scientific position with us, and their individual goals are comprised of highly detailed research, preclinical and clinical objectives. We are not disclosing specifics of their individual goals or goal by goal levels of achievement, because we believe that such disclosure might allow our competitors to predict certain business strategies and cause us competitive harm. Because we are not disclosing these target objectives, we are stating our assessment of how likely it was for these targets to be achieved by each of Drs. Hopkins and Duffy at the time the targets were established. Although achievement of our target individual objectives involved future performance and, therefore, was subject to uncertainties at the time the objectives were set, our compensation committee believes it established target objectives that were achievable with an appropriate amount of dedication and hard work and, therefore, it was more likely than not that each executive officer would earn a cash incentive bonus award based on his or her individual goals.

The specific targets for Mr. Conerly, our Chief Financial Officer, included his contributions toward developing and implementing a successful financial plan and preparing the company for an initial public offering. In addition, Mr. Conerly played a key role in outreach and business development initiatives. Four key individual goals, with multiple sub-goals, were established for Mr. Conerly for 2011, weighted between 5% and 80% each. Goals toward preparing the company for an initial public offering or other liquidity event were weighted 80% and goals toward developing and implementing a successful financial plan were weighted 20%. Our compensation committee determined that Mr. Conerly's individual goals were achieved in full except with respect to budgeting and forecasting where they were partially achieved. Based on this determination by our compensation committee and the weighting described above, Mr. Conerly achieved 85% of his individual goals for 2011. Our compensation committee approved Mr. Conerly's award for 2011 at $63,566, or 87% of his target amount, which is the average of the company performance factor and the individual factor.

The specific targets for Dr. Hopkins, our Chief Medical Officer, included his contributions toward completion of activities for specified clinical trials including execution of a Phase 2 trial for delafloxacin and initial planning for a Phase 3 trial for delafloxacin. In addition, Dr. Hopkins played a key role in both studies executed for the radezolid program. Dr. Hopkins also played a key role in outreach activities. Five key individual goals were established, with multiple sub-goals, for Dr. Hopkins for 2011, weighted between 5% and 60% each. Goals toward completion of activities for our discovery programs were weighted 85% and goals toward business development and other outreach activities were weighted 15%. Our compensation committee determined that Dr. Hopkins's individual goals were achieved in full except with respect to the development of product candidates in the RX-04 program, which were partially achieved. Based on this determination by our compensation committee and the weighting described above, Dr. Hopkins achieved 83.75% of his individual goals for 2011. Our compensation committee approved Dr. Hopkins's award for 2011 at $76,020, or 86.38% of his target amount, which is the average of the company performance factor and the individual factor.

The specific targets for Dr. Duffy, our Chief Scientific Officer, included her contributions to progress in our research activities, assistance with business development activities and other outreach activities. Three key individual goals, with multiple sub-goals, were established for Dr. Duffy for 2011, weighted between 15% and 65% each. Goals toward completion of activities for our discovery programs were weighted 85% and goals toward business development and

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other outreach activities were weighted 15%. Our compensation committee determined that Dr. Duffy's individual goals were achieved in full except with respect to the timing of planned research activities in the RX-04 program, which were partially achieved. Based on this determination by our compensation committee and the weighting described above, Dr. Duffy achieved 95% of her individual goals for 2011. Our compensation committee approved Dr. Duffy's award for 2011 at $69,000, or 92% of her target amount, which is the average of the company performance factor and the individual factor.

The specific targets for Dr. Sabatelli, our Vice President, Intellectual Property, included his contributions toward developing and defending our patent portfolio and other intellectual property. Five key individual goals, with multiple sub-goals, were established for Dr. Sabatelli for 2011, weighted between 10% and 45% each. Goals toward developing and defending our patent portfolio and other intellectual property were weighted 55% and goals toward preparing us for a liquidity event and other financial planning were weighted 45%. Our compensation committee determined that Dr. Sabatelli's individual goals, which were focused on the development and defense of our patent portfolio and on other contract and transactional matters, were mostly achieved. Based on this determination by our compensation committee and the weighting described above, Dr. Sabatelli achieved 80.5% of his individual goals for 2011. Our compensation committee approved Dr. Sabatelli's award for 2011 at $27,459, or 84.75% of his target amount, which is the average of the company performance factor and the individual factor.

The following chart summarizes the total cash incentive payment and corporate and individual performance weightings used to calculate the total cash incentive payment to each named executive officer for performance during fiscal year 2011:

Named Executive Officer	Target Bonus (as % of Salary)	Target Bonus ($)	Company Performance Factor	Weighting	Individual Factor	Weighting	Total Bonus Payment ($)	Total Bonus Payment (as % of Target)
Mark Leuchtenberger	50%	210,000	89%	100%	—	—	186,900	89%
Robert A. Conerly	30%	73,064	89%	50%	85%	50%	63,566	87%
Scott J. Hopkins, M.D.	30%	88,012	89%	50%	83.75%	50%	76,020	86.38%
Erin M. Duffy, Ph.D.	30%	75,000	89%	50%	95%	50%	69,000	92%
Anthony Sabatelli, Ph.D., J.D.	15%	32,400	89%	50%	80.5%	50%	27,459	84.75%

In 2011, we did not grant any equity compensation to our named executive officers. Our compensation committee decided not to make annual equity grants to our named executive officers in 2011 due to uncertainty surrounding the timing and likelihood for either an initial public offering or a sale of the company.

2012 Compensation Decisions

In February 2012, our compensation committee approved the following changes to base salary for our named executive officers in connection with its annual review of base salaries as part of our performance management program. These changes to base salary were made effective as of January 1, 2012.

Named Executive Officer	2011 Base Salary ($)	2012 Base Salary ($)
Mark Leuchtenberger	420,000	436,800
Robert A. Conerly	243,548	255,725
Scott J. Hopkins, M.D.	293,372	300,706
Erin M. Duffy, Ph.D.	250,000	262,500
Anthony Sabatelli, Ph.D., J.D.	216,000	223,560

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Termination Based Compensation

Upon termination of employment without cause or a resignation for good reason, our executives are entitled to receive severance payments. In determining whether to approve and setting the terms of such severance arrangements, our compensation committee recognizes that executives, especially highly ranked executives, often face challenges securing new employment following termination. Severance for termination without cause or a resignation for good reason for our named executive officers, other than our Chief Executive Officer, is six months of base salary. In addition, each named executive officer is entitled to reimbursement of premiums for medical insurance coverage under COBRA for six months after the date of termination or until he or she is eligible to be covered under a medical insurance plan by a subsequent employer.

Our Chief Executive Officer's employment agreement provides for severance of 12 months of base salary and reimbursement of COBRA premiums if his employment is terminated without cause or he resigns for good reason; provided that the payment period shall be extended from 12 months to 18 months if Mr. Leuchtenberger's termination occurs at a time when he has been employed by us for at least two years. In addition, each of our named executive officers shall, if the executive's employment is terminated within six months of the effective date of a change in control involving us, be entitled to the pro rata portion of the executive's annual bonus for the year in which the termination of employment occurs. Mr. Leuchtenberger's employment agreement also provides that all of his unvested options will immediately vest and become exercisable upon the effective date of a change in control. We believe that our named executive officers' severance packages are in line with severance packages offered to senior executive officers of the companies of similar size to us represented in the Radford compensation survey. See "—Potential Payments upon Termination or Change in Control," below.

Tax Considerations

Deductibility of Executive Compensation

As a private company, in making our compensation decisions, we have not considered Section 162(m) of the Internal Revenue Code, or the Code, which disallows a tax deduction to any publicly-held corporation for any remuneration in excess of $1 million paid in any taxable year to its chief executive officer and each of its other named executive officers (other than its chief financial officer) unless an exception applies. We expect our compensation arrangements put in place prior to our initial public offering and for several years thereafter will be exempt under Section 162(m) of the Code.

Once our exemption period expires, we expect that our compensation committee will adopt a policy that, where reasonably practicable, we will seek to qualify the variable compensation paid to our executive officers for the "performance-based compensation" exemption from the deductibility limit. Our compensation committee may, in its judgment, authorize compensation payments that do not comply with an exemption from the deductibility limit when it believes that such payments are appropriate to attract and retain executive talent.

Taxation of "Parachute" Payments and Deferred Compensation

Sections 280G and 4999 of the Code provide that executive officers and directors who hold significant equity interests and certain other service providers may be subject to an excise tax if they receive payments or benefits in connection with a change of control of our company that exceeds certain prescribed limits, and that our company (or a successor) may forfeit a deduction on the amounts subject to this additional tax. We do not currently provide any executive, including any named executive officer, with a "gross-up" or other reimbursement payment for any tax liability that he or she might owe as a result of the application of Sections 280G or 4999.

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Compensation Risk Consideration

Our compensation committee believes that our compensation programs are designed with an appropriate balance of risk and reward in relation to our overall business strategy and do not encourage excessive or unnecessary risk-taking behavior.

In making this determination, we considered our pay mix, our base salaries and the attributes of our variable compensation programs, including our annual bonus plan and our equity programs, and our alignment with market pay levels and compensation program designs.

Our compensation committee believes that the design of our executive compensation programs as outlined in the "Compensation Discussion and Analysis" above places emphasis on long-term incentives and competitive base salaries. Our compensation committee believes that this mix of incentives appropriately balances risk and aligns the executive officers' motivations for our long-term success, including stock price performance.

Summary Compensation Table

The following table shows the compensation paid or accrued during the fiscal years ended December 31, 2010 and December 31, 2011 to our current Chief Executive Officer, our current Chief Financial Officer, and our three most highly compensated executive officers, other than our Chief Executive Officer and our Chief Financial Officer, who were employed by us as of December 31, 2011.

Name & Principal Position	Year	Salary ($)	Non-Equity Incentive Plan Compensation ($)	Option Awards ($)(1)	All Other Compensation ($)	Total
Mark Leuchtenberger	2011	420,000	186,900	N/A	46,756 (2)	653,656
President & CEO	2010	310,769 (3)	138,082 (4)	639,917	89,539 (5)	1,178,307
Robert A. Conerly	2011	243,548	63,566	N/A	N/A	307,114
Chief Financial Officer	2010	231,950	63,500	N/A	N/A	295,450
Scott J. Hopkins, M.D.	2011	293,372	76,020	N/A	N/A	369,392
Chief Medical Officer	2010	287,620	74,430	N/A	N/A	362,050
Erin M. Duffy, Ph.D.	2011	234,693 (6)	69,000	N/A	N/A	303,693
Chief Scientific Officer	2010	211,183	56,860	N/A	N/A	268,043
Anthony Sabatelli, Ph.D., J.D.	2011	216,000	27,459	N/A	N/A	243,459
Vice President, Intellectual Property	2010	211,819	14,200	N/A	N/A	226,019

(1) These amounts represent the aggregate grant date fair value for option awards granted to our named executive officers, computed in accordance with FASB ASC Topic 718. See Note 11 to our audited financial statements for the year ended December 31, 2011 included elsewhere in this prospectus for details as to the assumptions used to calculate the fair value of the option awards. See also our discussion of stock-based compensation under "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies and Significant Judgments and Estimates."

(2) This reflects rent and living expenses in New Haven of $24,827 and reimbursement of $6,874 in expenses for travel between our location in New Haven, Connecticut and Mr. Leuchtenberger's home in Massachusetts and a tax gross up on those rent, living and travel expenses of $15,055.

(3) This amount represents the pro-rated amount of his annual salary of $400,000, based on his March 23, 2010 start date with us.

(4) Mr. Leuchtenberger's 2010 bonus was pro-rated based on his March 23, 2010 start date.

(5) This reflects a $50,000 signing bonus paid upon hire, rent and living expenses in New Haven of $22,177, a tax gross-up on those rent and living expenses of $12,434 and reimbursement of $4,925 in expenses for travel between our location in New Haven, Connecticut and Mr. Leuchtenberger's home in Massachusetts.

(6) This amount represents 6.5 months of base salary based on an annualized base salary of $221,742 and 5.5 months of base salary based on an annualized base salary of $250,000 due to Dr. Duffy's promotion to Chief Scientific Officer in July 2011.

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Grants of Plan-Based Awards in 2011

The following table shows information regarding target amounts for grants of non-equity awards for the fiscal year ended December 31, 2011 with respect to each of our named executive officers. We did not grant any equity awards to our named executive officers during the 2011 fiscal year.

Name	Grant Date	Estimated Future Payouts Under Non-Equity Incentive Plan Awards Target ($)	All Other Option Awards: Number of Securities Underlying Options (#)	Exercise Price of Option Awards ($/sh)	Grant Date Fair Value of Option Awards
Mark Leuchtenberger	N/A	$ 210,000	N/A	N/A	N/A
Robert A. Conerly	N/A	$ 73,064	N/A	N/A	N/A
Scott J. Hopkins, M.D.	N/A	$ 88,012	N/A	N/A	N/A
Erin M. Duffy, Ph.D.	N/A	$ 75,000	N/A	N/A	N/A
Anthony Sabatelli, Ph.D., J.D.	N/A	$ 32,400	N/A	N/A	N/A

Narrative Disclosure to Summary Compensation Table and Grants of Plan-Based Awards Table

Mark Leuchtenberger. We entered into an employment agreement with Mr. Leuchtenberger in March 2010. The agreement provides for a starting salary of $400,000 and a potential bonus of up to $200,000. The agreement also provided that our board of directors would grant him an option to purchase 13,339,196 shares of common stock and a signing bonus of $50,000. The most recent adjustment in February 2012 increased Mr. Leuchtenberger's annual salary to $436,800 with a bonus potential of 50% of his base salary, or $218,400, effective January 1, 2012. In early 2012, our compensation committee approved Mr. Leuchtenberger's bonus award for 2011 at $186,900, or 89% of his target amount. In addition, as part of his employment agreement, Mr. Leuchtenberger is entitled to reimbursement for reasonable expenses associated with maintaining a temporary home in Connecticut and for travel to and from his permanent home in Massachusetts. These expenses do not exceed $2,000 per month. If Mr. Leuchtenberger's employment is terminated without cause by us or due to his death or disability, or he terminates his employment for good reason, he will receive the following severance benefits following his employment termination: (a) base salary for a period of 12 months; provided that the payment period shall be extended from 12 months to 18 months if Mr. Leuchtenberger's termination occurs at a time when he has been employed by the company for at least two years; (b) that portion of any bonus, on a pro rated basis, that our board of directors, in its discretion, otherwise would have awarded to him as of such date; and (c) reimbursement of Mr. Leuchtenberger or his dependents for the cost of COBRA premiums, less the employee portion thereof, during the 12 or 18 month severance period. In addition, in the event that Mr. Leuchtenberger's employment is terminated for any reason at any time within the two years following a change of control, he would become vested in 100% of his then unvested options. As a condition of employment, Mr. Leuchtenberger has entered into a non-competition, non-solicitation and non-disclosure agreement pursuant to which he has agreed not to compete with us or to solicit customers or employees of ours for a period of 12 months after the termination of his employment.

Robert A. Conerly. We provided Mr. Conerly an offer letter regarding the terms of his employment with us in May 2002. We also entered into a severance agreement with Mr. Conerly dated as of December 1, 2011. Mr. Conerly currently receives a salary of $255,725 and a potential bonus of up to 30% of his base salary, or $76,717.50. In early 2012, our compensation committee approved Mr. Conerly's bonus award for 2011 at $63,566, or 87% of his target

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amount. Our board of directors adjusts Mr. Conerly's salary and bonus potential from time to time. If we terminate Mr. Conerly's employment without cause or if Mr. Conerly resigns for good reason, he is entitled to six months of his base salary at the rate in effect at the time of his termination paid bi-monthly in accordance with our normal payroll practices. In the event that such termination is within six months after a change of control, Mr. Conerly will also be entitled to the portion of his bonus earned up until termination. In addition, he is entitled to reimbursement of his premiums for medical insurance coverage under COBRA for six months after the date of termination or until he is eligible to be covered under a medical insurance plan by a subsequent employer. As a condition of employment, Mr. Conerly has entered into a non-competition, non-solicitation and non-disclosure agreement pursuant to which he has agreed not to compete with us or to solicit customers or employees of ours for a period of one year after the termination of his employment.

Scott J. Hopkins, M.D. Dr. Hopkins currently receives a salary of $300,706 with a bonus potential of 30% of his base salary, or $90,211.80. In early 2012, our compensation committee approved Dr. Hopkins's bonus award for 2011 at $76,020, or 86.38% of his target amount. Our board of directors adjusts Dr. Hopkins's salary and bonus potential from time to time. In addition, we entered into a severance agreement with Dr. Hopkins dated as of December 1, 2011. If we terminate Dr. Hopkins's employment without cause or if Dr. Hopkins resigns for good reason, he is entitled to six months of his base salary at the rate in effect at the time of his termination paid bi-monthly in accordance with our normal payroll practices. In the event that such termination is within six months after a change of control, Dr. Hopkins will also be entitled to the portion of his bonus earned up until termination. In addition, he is entitled to reimbursement of his premiums for medical insurance coverage under COBRA for six months after the date of termination or until he is eligible to be covered under a medical insurance plan by a subsequent employer. As a condition of employment, Dr. Hopkins has entered into a non-competition, non-solicitation and non-disclosure agreement pursuant to which he has agreed not to compete with us or to solicit customers or employees of ours for a period of one year after the termination of his employment.

Erin M. Duffy, Ph.D. We provided Dr. Duffy an offer letter regarding the terms of her employment with us in January 2002. We also entered into a severance agreement with Dr. Duffy dated as of December 1, 2011. Dr. Duffy currently receives a salary of $262,500 and a potential bonus of 30% of her base salary, or $78,750. In early 2012, our compensation committee approved Dr. Duffy's bonus award for 2011 at $69,000, or 92% of her target amount. Our board of directors adjusts Dr. Duffy's salary and bonus potential from time to time. The most recent salary adjustment in July 2011 included a promotion to Chief Scientific Officer. If we terminate Dr. Duffy's employment without cause or if Dr. Duffy resigns for good reason, she is entitled to six months of her base salary at the rate in effect at the time of her termination paid bi-monthly in accordance with our normal payroll practices. In the event that such termination is within six months after a change of control, Dr. Duffy will also be entitled to the portion of her bonus earned up until termination. In addition, she is entitled to reimbursement of her premiums for medical insurance coverage under COBRA for six months after the date of termination or until she is eligible to be covered under a medical insurance plan by a subsequent employer. As a condition of employment, Dr. Duffy has entered into a non-competition, non-solicitation and non-disclosure agreement pursuant to which she has agreed not to compete with us or to solicit customers or employees of ours for a period of one year after the termination of her employment.

Anthony Sabatelli, Ph.D., J.D. We provided Dr. Sabatelli an offer letter regarding the terms of his employment with us in October 2002. We also entered into a severance agreement with Dr. Sabatelli dated as of December 1, 2011. Dr. Sabatelli currently receives a salary of $223,560 and a potential bonus of 15% of his base salary, or $33,534. In early 2012, our compensation

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committee approved Dr. Sabatelli's bonus award for 2011 at $27,459, or 84.75% of his target amount. Our board of directors adjusts Dr. Sabatelli's salary and bonus potential from time to time. If we terminate Dr. Sabatelli's employment without cause or if Dr. Sabatelli resigns for good reason, he is entitled to six months of his base salary at the rate in effect at the time of his termination paid bi-monthly in accordance with our normal payroll practices. In the event that such termination is within six months after a change of control, Dr. Sabatelli will also be entitled to the portion of his bonus earned up until termination. In addition, he is entitled to reimbursement of his premiums for medical insurance coverage under COBRA for six months after the date of termination or until he is eligible to be covered under a medical insurance plan by a subsequent employer. As a condition of employment, Dr. Sabatelli has entered into a non-competition, non-solicitation and non-disclosure agreement pursuant to which he has agreed not to compete with us or to solicit customers or employees of ours for a period of one year after the termination of his employment.

Recent Developments

In April 2012, we entered into a letter agreement with Matthew A. Wikler, M.D. in which Dr. Wikler agreed to assume the position of Chief Development Officer on or around April 30, 2012. Dr. Wikler's employment will be on an at-will basis. Under the letter agreement, Dr. Wikler will be paid an initial annual base salary of $325,000 and a signing bonus of $60,000. Dr. Wikler will also be eligible for an annual bonus with a target of 30% of his annual base salary, or $97,500. In addition, Dr. Wikler will be entitled to receive a stock option on the effective date of the offering made hereby, or during the third quarter of 2012 if the offering has not taken place by June 30, 2012, and such option will represent one percent of our outstanding capital stock on a fully diluted basis. Dr. Wikler is also entitled to paid vacation time consistent with our senior executive level vacation policy, group medical and dental insurance and other benefits, and reimbursement of transportation and relocation expenses from his home in California. We have also entered into a severance agreement with Dr. Wikler in which we agreed to pay Dr. Wikler severance benefits in the event that we terminate his employment other than for "cause" or "disability" as those terms are defined in the severance agreement, or Dr. Wikler terminates his employment for "good reason," as defined in the severance agreement. Such severance payments include cash payment of six months of his annual base salary on a payroll basis and up to six months of COBRA premiums. In addition, if Dr. Wikler's employment is terminated without "cause" or he resigns for "good reason" within six months of a "change of control," as defined in the severance agreement, Dr. Wikler will be entitled to the pro-rata portion of his annual bonus for the year in which his employment is terminated. As a condition of employment, Dr. Wikler has entered into a noncompetition, nondisclosure and developments agreement pursuant to which he has agreed not to compete with us (i) in areas related to antimicrobials or in areas related to specific chemical approaches or series in which we engage for one year if he resigns for any reason other than "good reason" and for six months if his employment is terminated by us or he resigns for "good reason," and (ii) in areas of business unrelated to antimicrobials for one year following termination of his employment. Dr. Wikler has also agreed not to solicit customers or employees of ours for a period of one year after the termination of his employment.

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Outstanding Equity Awards at Fiscal Year-End

The following table shows grants of stock options outstanding on the last day of the fiscal year ended December 31, 2011 to each of our named executive officers.

Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price ($)	Option Expiration Date (1)
Mark Leuchtenberger	5,835,898	7,503,298	$ 0.07	3/18/2020
Robert A. Conerly	125,000	0	$ 0.10	7/22/2012
	125,000	0	$ 0.10	7/22/2012
	13,970	0	$ 0.10	3/17/2013
	13,975	0	$ 0.10	3/17/2013
	155,000	0	$ 0.10	1/8/2014
	155,000	0	$ 0.20	1/20/2015
	175,000	0	$ 0.25	1/26/2016
	290,853	0	$ 0.25	1/3/2017
	149,721	13,612	$ 0.25	4/21/2018
	119,096	44,237	$ 0.14	5/14/2019
Scott J. Hopkins, M.D.	35,000	0	$ 0.10	1/20/2012
	385,000	0	$ 0.10	10/17/2012
	250,000	0	$ 0.10	1/8/2014
	200,000	0	$ 0.20	1/20/2015
	250,000	0	$ 0.25	1/26/2016
	415,504	0	$ 0.25	1/3/2017
	213,888	19,445	$ 0.25	4/21/2018
	157,985	58,681	$ 0.14	5/14/2019
Erin M. Duffy, Ph.D.	62,500	0	$ 0.10	1/20/2012
	62,500	0	$ 0.10	1/20/2012
	12,261	0	$ 0.10	3/17/2013
	70,000	0	$ 0.10	1/8/2014
	70,000	0	$ 0.20	1/20/2015
	70,000	0	$ 0.25	1/26/2016
	125,000	0	$ 0.25	1/3/2017
	211,000	0	$ 0.25	5/17/2017
	77,916	7,084	$ 0.25	4/21/2018
	131,250	48,750	$ 0.14	5/14/2019
Anthony Sabatelli, Ph.D., J.D.	35,000	0	$ 0.20	1/20/2015
	75,000	0	$ 0.25	1/26/2016
	130,000	0	$ 0.25	1/3/2017
	64,166	5,834	$ 0.25	4/21/2018
	51,041	18,959	$ 0.14	5/14/2019

(1) Unless otherwise indicated, each option to purchase our common stock vests as to 25% of the shares on the first anniversary of the grant date of such option and thereafter 2.083% of the shares vest in equal monthly installments over the subsequent 36 months. Each of these options has a ten year term from the date of grant.

Option Exercises and Stock Vested

During the fiscal year ended December 31, 2011, none of our named executive officers exercised any options.

Pension Benefits

We do not have any qualified or non-qualified defined benefit plans.

Nonqualified Defined Contribution Plan

We do not have any nonqualified defined contribution plans.

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Potential Payments upon Termination or Change in Control

Upon termination of employment without cause or a resignation for good reason, each as defined below, our executives are entitled to receive severance payments. Severance for termination without cause or termination for good reason, each as defined below, for executive officers, other than our Chief Executive Officer, is six months of base salary. In addition, each named executive officer is entitled to reimbursement of premiums for medical insurance coverage under COBRA until the earlier of six months after the date of termination or until he or she is eligible to be covered under a medical insurance plan by a subsequent employer. Our Chief Executive Officer's employment agreement provides for a severance payment of 12 months of base salary if his employment is terminated without cause; provided that the payment period shall be extended from 12 months to 18 months if Mr. Leuchtenberger's termination occurs at a time when he has been employed by us for at least two years.

The table below summarizes the potential payments and benefits to each of our named executive officers assuming a termination without cause or resignation for good reason had occurred as of December 31, 2011.

Name	Severance Payments (1)	Bonus Payments	Post-Termination Benefits (2)	Total Benefits
Mark Leuchtenberger	$ 420,000	$186,900	$ 15,412	$622,312
Robert A. Conerly	$ 121,774	N/A	$ 9,183	$130,957
Scott J. Hopkins, M.D.	$ 146,686	N/A	$ 7,987	$154,673
Erin M. Duffy, Ph.D.	$ 125,000	N/A	$ 3,718	$128,718
Anthony Sabatelli, Ph.D., J.D.	$ 108,000	N/A	$ 3,365	$111,365

(1) In November 2011, our compensation committee approved severance arrangements for our named executive officers other than Mr. Leuchtenberger, whose severance arrangements are set forth in his employment agreement. The severance arrangements as approved in November 2011 provide for the payment of six months of base salary and reimbursement of premiums for medical insurance coverage under COBRA for six months after the date of termination or until the executive is eligible to be covered under a medical insurance plan by a subsequent employer.

(2) Represents premiums paid by us for continuation of the executive's medical, dental and vision insurance coverage.

The table below summarizes the potential payments and benefits to each of our named executive officers assuming a change in control had occurred at December 31, 2011.

Name	Severance Payments	Bonus Payments	Value of Additional Vested Option Awards (1)	Post-Termination Benefits (2)	Total Benefits
Mark Leuchtenberger	$420,000	$186,900	$ 0 (3)	$ 15,412	$622,312
Robert A. Conerly	$121,774	$ 63,566	N/A	$ 9,183	$194,523
Scott J. Hopkins, M.D.	$146,686	$ 76,020	N/A	$ 7,987	$230,693
Erin M. Duffy, Ph.D.	$125,000	$ 69,000	N/A	$ 3,718	$197,718
Anthony Sabatelli, Ph.D., J.D.	$108,000	$ 27,459	N/A	$ 3,365	$138,824

(1) Each of our named executive officers shall, if the executive's employment is terminated within six months of the effective date of a change in control, be entitled to the pro rata portion of the executive's annual bonus for the year in which the termination of employment occurs. In addition, Mr. Leuchtenberger's employment agreement provides that all of his unvested options will immediately vest and become exercisable upon the effective date of a change in control.

(2) Represents premiums paid by us for continuation of the executive's medical, dental and vision insurance coverage.

(3) This represents the intrinsic value of the number of option shares that would vest, assuming a change of control termination at December 31, 2011.

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For purposes of severance payments, "good reason" is defined as an executive resigning after one of the following conditions has come into existence without the executive's consent:

- a reduction of the executive's base salary;
- a material adverse change in the executive's primary responsibilities or duties;
- a geographical relocation of our corporate headquarters, or the executive's primary business location, to a location that is 35 miles or more from the present location, or 50 miles in the case of the Chief Executive Officer; or
- any material breach by us of the employment agreement.

The executive must provide us with written notice within 90 days after a good reason condition comes into existence, and we have 30 days to remedy the condition after receipt of the notice.

For purposes of severance payments, "cause" is defined as a termination by us because the executive:

- willfully refused or failed to follow directions communicated to him or her by our board of directors or the individual to whom he or she reports;
- willfully engaged in conduct which causes material injury to us, monetarily or otherwise;
- acted with material dishonesty or materially breached any fiduciary duty owed to us;
- was convicted of, pleaded guilty to or confessed to an act of fraud, misappropriation or embezzlement or to any felony;
- used illegal substances at any time; or
- materially breached his or her employment agreement or employee noncompetition, nondisclosure and developments agreement, or our policies regarding confidentiality or insider trading.

In addition, with regard to Mr. Leuchtenberger's employment agreement, we must notify him in writing of the matters constituting cause under the first three bullets and the sixth bullet above, and he must have failed to cure such acts or omissions, if curable, within thirty days of receiving that notice.

For purposes of Mr. Leuchtenberger's employment agreement, a "change in control" means:

- the acquisition of shares of our common stock constituting more than 85% of the total fair market value or total voting power of our common stock, unless the person or group making the acquisition already owns 50% of our common stock, or
- the acquisition of at least 85% of our assets over a 12-month period.

A change in control shall not include any change for reasons of bankruptcy or insolvency, or any debt or equity financing approved by our board of directors in which an investor or investors receive debt or equity securities from us or from an affiliate of ours.

For purposes of our other named executive officers, a "change in control" means:

- any "person" or "group" (as such terms are used in Section 13(d) and 14(d) of the Exchange Act) is or becomes the beneficial owner of our securities representing 50% or more of the total voting power of our then-outstanding voting securities, pursuant to a transaction which our board of directors does not approve,
- we undergo a merger, reorganization or other consolidation, including the sale of substantially all of our assets, in which we are not the surviving entity and in which the persons holding our outstanding equity immediately prior to such merger, reorganization or consolidation own less than 50% of the surviving entity's voting power immediately after the transaction, or
- a change in the composition of our board of directors, as a result of which fewer than a majority of the directors are incumbent directors. Incumbent directors shall mean

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directors who either (A) are directors of ours as of November 11, 2011, or (B) are elected, or nominated for election, to our board of directors with the affirmative votes of at least a majority of the incumbent directors at the time of such election or nomination, but shall not include an individual whose election or nomination is in connection with an actual or threatened proxy contest relating to the election of members to our board of directors.

Director Compensation

The following table shows the total compensation paid or accrued during the fiscal year ended December 31, 2011 to each of our directors, other than Mr. Leuchtenberger, who does not receive compensation for his service as a director.

Name	Fees Earned or Paid in Cash ($)	Stock Awards ($)	Option Awards ($)	Non-Equity Incentive Plan Compensation ($)	Change in Pension Value and Nonqualified Deferred Compensation Earnings	All Other Compensation ($)	Total ($)
George M. Milne, Jr., Ph.D. (1)	$50,000	N/A	N/A	N/A	N/A	N/A	$50,000
C. Boyd Clarke (2)	$50,000	N/A	N/A	N/A	N/A	N/A	$50,000
Harry H. Penner Jr., J.D., L.L.M. (3)	$50,000	N/A	N/A	N/A	N/A	N/A	$50,000
Cecilia Gonzalo (4)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Jonathan S. Leff (4)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(1) As of December 31, 2011, Dr. Milne held 187,500 options to purchase shares of our common stock, all of which were vested.

(2) As of December 31, 2011, Mr. Clarke held 225,000 options to purchase shares of our common stock, all of which were vested.

(3) As of December 31, 2011, Mr. Penner held 407,500 options to purchase shares of our common stock, all of which were vested.

(4) As representatives of Warburg Pincus on our board of directors, neither Ms. Gonzalo nor Mr. Leff currently receives compensation for their service as a director. However, Mr. Leff has previously been granted options to purchase shares of our common stock as compensation for his service as a director. As of December 31, 2011, Mr. Leff held 155,000 options to purchase shares of our common stock, all of which were vested.

Director Compensation Policy

During 2011, each of Dr. Milne, Mr. Clarke and Mr. Penner received $50,000 as compensation for their service on the board of directors. In April 2012, our board of directors approved a non-employee director compensation policy to be effective upon the consummation of this offering that provides for an annual payment of $50,000 to each non-employee director as compensation for their service on the board of directors. We expect to amend this non-employee director compensation policy following the completion of this offering.

In April 2012, our board of directors approved an amended Non-Employee Director Bonus Plan that has been designed to incentivize our board of directors to increase the value and attractiveness of our company in connection with specified events. This plan provides for potential payments or grants of restricted stock units to our non-employee directors in the event of a sale, initial public offering or reverse merger transaction involving us in which either the proceeds of an initial public offering or our valuation in a sale or reverse merger exceeds $52.5 million, which we refer to as the triggering event valuation. Our compensation committee shall determine the eligible individuals who are to receive a payment or option grants under the plan, which shall equal, in the aggregate, 0.05% of the triggering event valuation in excess of $52.5 million.

In the event of a sale, the form of the payment shall be cash, securities, other consideration or any combination of those forms, in order to parallel the type of consideration received by us or by

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our shareholders in the sale. In the event of an initial public offering or reverse merger, the form of the payment shall be grants of restricted stock units that upon vesting will require us to issue shares of our common stock or shares of the resulting or acquiring company in a reverse merger. The number of shares subject to each grant of restricted stock units will be calculated by dividing the bonus amount by the triggering event per share valuation and rounding down to the nearest whole share. Any restricted stock units will vest as follows: (i) 50% of each grant of restricted stock units shall vest on the first anniversary of the triggering event and (ii) the remainder of each grant of restricted stock units will vest pro rata on a quarterly basis over the next three years, provided the participant remains a member of our board of directors on the applicable vesting dates. In addition, each restricted stock unit will vest in full upon a merger, reorganization or other consolidation of us, including the sale of substantially all of our assets, in which we are not the surviving entity and in which the persons holding our outstanding equity immediately prior to the transaction own less than 50% of the surviving entity's total voting power immediately after the transaction, subject to the participant's continuous service as a member of our board of directors through the date of such merger, reorganization or other consolidation of us. In addition, in the case of a reverse merger in which our triggering event valuation is less than the enterprise value of the constituent entities to the reverse merger other than us, the vesting of the restricted stock units would be subject to full acceleration if the participant ceases to be a member of our board of directors for any reason other than removal for cause provided such resignation occurs prior to the first anniversary of the reverse merger. This plan will terminate on June 30, 2012.

We currently have no other formal arrangements under which our directors receive compensation for service to our board of directors or its committees.

2001 Stock Option and Incentive Plan

Our 2001 Stock Option and Incentive Plan, or the 2001 Stock Plan, was adopted by our board of directors and our stockholders in September 2001. The 2001 Stock Plan terminated by its terms in September 2011. As a result of such termination, no additional awards may be granted under the 2001 Stock Plan, but equity awards previously granted under the 2001 Stock Plan will remain outstanding and continue to be governed by the terms of the 2001 Stock Plan. As of March 31, 2012, the only outstanding awards under the 2001 Stock Plan were options to purchase 21,869,572 shares of our common stock. The 2001 Stock Plan is administered by our board of directors and our compensation committee.

If we are acquired, our board of directors will provide that outstanding options under this plan shall be continued or assumed by the successor or acquiring company by substituting either (a) the consideration payable with respect to the outstanding shares of common stock in connection with the acquisition, (b) shares of stock of the successor or acquiring company or (c) such other securities as our board of directors deems appropriate, so long as the fair market value of such securities does not materially differ from the fair market value of our common stock immediately preceding the acquisition. In addition, our board of directors may provide that outstanding options shall be immediately exercisable in full and (1) exercised within a specified number of days or the options will terminate or (2) terminated in exchange for a cash payment equal to the value of the option at the time we are acquired. Our board of directors may also provide that, to the extent the options have been accelerated, the shares of common stock underlying such options shall be restricted stock subject to forfeiture and repurchase by the company upon termination of the optionee's employment or other relationship based on a vesting schedule equivalent to the vesting schedule of the related option.

2011 Equity Incentive Plan

In November 2011, our board of directors approved the 2011 Equity Incentive Plan. The 2011 Equity Incentive Plan will expire in November 2021. Under our 2011 Equity Incentive Plan,

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we may grant incentive stock options, non-qualified stock options, restricted and unrestricted stock awards and other stock based awards.

At the time that our board of directors approved the 2011 Equity Incentive Plan, a total of 20,039,392 shares of common stock plus up to 22,800,870 shares of common stock that are represented by awards granted under the 2001 Stock Plan that forfeit, expire or are cancelled, were reserved under the 2011 Equity Incentive Plan. These numbers are subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization. Generally, shares that are forfeited or canceled from awards under the 2011 Equity Incentive Plan also will be available for future awards. Grants of restricted stock units to be issued pursuant to the Management Bonus Plan and the Non-Employee Director Bonus Plan will be issued under the 2011 Equity Incentive Plan. As of March 31, 2012, options to purchase 150,000 shares of common stock were outstanding under the 2011 Equity Incentive Plan.

Our board of directors may amend or discontinue the 2011 Equity Incentive Plan at any time and may amend or cancel any outstanding award. No such amendment may adversely affect the rights under any outstanding award without the holder's consent.

Upon completion of this offering, the 2011 Equity Incentive Plan will be administered by our compensation committee. Our compensation committee will have full power and authority to determine the terms of awards granted pursuant to this plan, including:

- which employees, directors and consultants shall be granted options and other awards;
- the number of shares of our common stock subject to options and other awards subject to a maximum of 10,000,000 with respect to which a participant may be granted options and other stock awards in any fiscal year;
- the exercise price of each option, which generally shall not be less than fair market value on the date of grant;
- the schedule upon which options become exercisable;
- the termination or cancellation provisions applicable to options;
- the terms and conditions of other awards, including conditions for repurchase, termination or cancellation, issue price and repurchase price; and
- all other terms and conditions upon which each award may be granted in accordance with our plan.

In addition, our board of directors or any committee to which our board of directors delegates authority may, with the consent of the affected plan participants, reprice or otherwise amend outstanding awards consistent with the terms of our plan.

If we are acquired, our compensation committee will provide that outstanding options under this plan shall be: (1) assumed by the successor or acquiring company; (2) exercised within a specified number of days or the options will terminate; or (3) terminated in exchange for a payment equal to the consideration payable upon consummation of the transaction to a holder of the number of shares of common stock into which such option would have been exercisable less the aggregate exercise price of such option. With respect to outstanding stock grants, our compensation committee shall provide that outstanding awards shall be assumed or substituted by the successor corporation or terminated in exchange for a payment equal to the consideration payable upon consummation of the transaction to a holder of the number of shares of common stock comprising such stock grant to the extent such stock grant is no longer subject to any forfeiture or repurchase rights (unless such forfeiture or repurchase rights are waived). In addition, restrictions applicable to an award will lapse, in whole or in part, prior to or upon the transaction.

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CERTAIN RELATIONSHIPS AND RELATED PERSON TRANSACTIONS

In addition to the director and executive officer compensation arrangements discussed above in "Executive Compensation," since January 1, 2009, we have engaged in the following transactions, in which the amount involved exceeded $120,000 and in which any director, executive officer or holder of more than 5% of our voting securities, whom we refer to as our principal stockholders, or affiliates or immediate family members of our directors, executive officers and principal stockholders had or will have a material interest. We believe that all of these transactions were on terms as favorable as could have been obtained from unrelated third parties.

Some of our directors are affiliated with our principal stockholders as indicated in the table below:

Director	Affiliation with Principal Stockholder
Cecilia Gonzalo	Ms. Gonzalo is a partner of Warburg Pincus & Co., the ultimate general partner of WP VIII Finance, L.P. and Warburg Pincus Private Equity VIII, L.P.; she is also a managing director and member of Warburg Pincus LLC, which is the manager of WP VIII Finance, L.P. and Warburg Pincus Private Equity VIII, L.P.; Warburg Pincus Private Equity VIII, L.P. is the indirect majority owner of WP VIII Finance, L.P.
Jonathan S. Leff	Mr. Leff is a partner of Warburg Pincus & Co., the ultimate general partner of WP VIII Finance, L.P. and Warburg Pincus Private Equity VIII, L.P.; he is also a managing director and member of Warburg Pincus LLC, which is the manager of WP VIII Finance, L.P. and Warburg Pincus Private Equity VIII, L.P.; Warburg Pincus Private Equity VIII, L.P. is the indirect majority owner of WP VIII Finance, L.P.

Convertible Notes and Warrants Issued in 2009

In January 2009, we entered into a subordinated convertible promissory note purchase agreement with investors pursuant to which, on January 8, 2009 and December 11, 2009, we issued $25.0 million and $10.0 million, respectively, in aggregate principal amount of subordinated convertible promissory notes. Certain of these subordinated convertible promissory notes were purchased by certain of our principal stockholders and by one of our directors in the following amounts and on the following dates:

Name of Beneficial Owner	Date of Issuance of Debt	Original Principal Amount of Debt
MedImmune Ventures, Inc.	(1)	$ 2,755,279
Entities affiliated with Oxford Bioscience Partners	(2)	4,819,952
S.R. One, Limited	(3)	2,524,762
Entities affiliated with Warburg Pincus	(4)	18,493,593
C. Boyd Clarke (5)	(6)	70,000

(1) Consists of a subordinated convertible promissory note dated January 8, 2009 in the original principal amount of $1,968,057 and a subordinated convertible promissory note dated December 11, 2009 in the original principal amount of $787,223.

(2) Consists of subordinated convertible promissory notes issued to: Oxford Bioscience Partners IV, L.P. dated January 8, 2009 in the original principal amount of $3,408,623, Oxford Bioscience Partners IV, L.P. dated

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December 11, 2009 in the original principal amount of $1,363,449, mRNA Fund II, LP dated January 8, 2009 in the original principal amount of $34,200 and mRNA Fund II, LP dated December 11, 2009 in the original principal amount of $13,680.

(3) Consists of a subordinated convertible promissory note dated January 8, 2009 in the original principal amount of $1,803,402 and a subordinated convertible promissory note dated December 11, 2009 in the original principal amount of $721,361.

(4) Consists of subordinated convertible promissory notes issued to: WP VIII Finance, L.P. dated January 8, 2009 in the original principal amount of $13,209,709 and Warburg Pincus Private Equity VIII, L.P. dated December 11, 2009 in the original principal amount of $5,283,884.

(5) C. Boyd Clarke is a director of the company.

(6) Consists of a subordinated convertible promissory note dated January 8, 2009 in the original principal amount of $50,000.00 and a subordinated convertible promissory note dated December 11, 2009 in the original principal amount of $20,000.

The subordinated convertible promissory notes accrue interest at the rate of 10% per year and mature as of the later of (i) January 8, 2014 and (ii) the 91st day following the earlier of January 10, 2016 or the date of conversion in full of the senior convertible demand promissory notes (further described below). Assuming an initial public offering price of $ per share, which is the mid-point of the price range on the cover page of this prospectus, and that the closing occurs on , 2012, the $35.0 million in aggregate principal amount of the outstanding subordinated convertible promissory notes plus all accrued but unpaid interest thereon will convert into approximately shares of common stock.

In connection with the subordinated convertible promissory note financing, we issued warrants to purchase 16,965,586 shares of our common stock. The warrants are exercisable at a price of $0.25 per share. The warrants remain exercisable for 10 years from the date of issuance. Certain of these warrants were purchased by certain of our principal stockholders and by one of our directors in the following amounts and on the following dates:

Name of Beneficial Owner	Date of Issuance of Warrants	Warrants to Purchase Common Stock
MedImmune Ventures, Inc.	(1)	1,335,569
Entities affiliated with Oxford Bioscience Partners	(2)	2,336,380
S.R. One, Limited	(3)	1,223,831
Entities affiliated with Warburg Pincus	(4)	8,964,417
C. Boyd Clarke (5)	(6)	33,932

(1) Consists of warrants dated January 8, 2009 to purchase 953,978 shares of common stock and warrants dated December 11, 2009 to purchase 381,591 shares of common stock.

(2) Consists of warrants issued to: Oxford Bioscience Partners IV, L.P. dated January 8, 2009 to purchase 1,652,265 shares of common stock, Oxford Bioscience Partners IV, L.P. dated December 11, 2009 to purchase 660,906 shares of common stock, mRNA Fund II, LP dated January 8, 2009 to purchase 16,578 shares of common stock and mRNA Fund II, LP dated December 11, 2009 to purchase 6,631 shares of common stock.

(3) Consists of warrants dated January 8, 2009 to purchase 874,165 shares of common stock and warrants dated December 11, 2009 to purchase 349,666 shares of common stock.

(4) Consists of warrants issued to: WP VIII Finance, L.P. dated January 8, 2009 to purchase 6,403,155 shares of common stock and Warburg Pincus Private Equity VIII, L.P. dated December 11, 2009 to purchase 2,561,262 shares of common stock.

(5) C. Boyd Clarke is a director of the company.

(6) Consists of warrants dated January 8, 2009 to purchase 24,237 shares of common stock and warrants dated December 11, 2009 to purchase 9,695 shares of common stock.

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The subordinated convertible promissory notes and warrants were issued in a private placement in accordance with Section 4(2) of the Securities Act and the shares of common stock issued upon the automatic conversion of the subordinated convertible promissory notes and upon the exercise of the warrants will be restricted securities. The holders of the subordinated convertible promissory notes and the warrants will be entitled to the registration rights provided in the third amended and restated registration rights agreement, as amended, with regard to the shares of common stock issued upon the automatic conversion of the subordinated convertible promissory notes and the exercise of the warrants.

Convertible Notes and Warrants Issued in 2010

In May 2010, we entered into a senior subordinated convertible demand promissory note purchase agreement with investors pursuant to which we issued senior subordinated convertible demand promissory notes having an aggregate principal amount of $5.5 million issued on May 28, 2010 and June 2, 2010, $5.4 million issued on August 25, 2010, and $4.1 million issued on November 19, 2010. Certain of these senior subordinated convertible demand promissory notes were purchased by certain of our principal stockholders and by one of our directors in the following amounts and on the following dates:

Name of Beneficial Owner	Date of Issuance of Debt	Original Principal Amount of Debt
CHP II, L.P.	(1)	$ 50,000
Entities affiliated with Oxford Bioscience Partners	(2)	1,000,000
S.R. One, Limited	(3)	963,669
Entities affiliated with Warburg Pincus	(4)	10,722,541
C. Boyd Clarke (5)	(6)	30,000

(1) Consists of a senior subordinated convertible demand promissory note dated May 28, 2010 in the original principal amount of $18,333, a senior subordinated convertible demand promissory note dated August 25, 2010 in the original principal amount of $18,000 and a senior subordinated convertible demand promissory note dated November 19, 2010 in the original principal amount of $13,667.

(2) Consists of senior subordinated convertible demand promissory notes issued to: Oxford Bioscience Partners IV, L.P. dated May 28, 2010 in the original principal amount of $363,024, Oxford Bioscience Partners IV, L.P. dated August 25, 2010 in the original principal amount of $356,424, Oxford Bioscience Partners IV, L.P. dated November 19, 2010 in the original principal amount of $ $270,618, mRNA Fund II, LP dated May 28, 2010 in the original principal amount of $3,642, mRNA Fund II, LP dated August 25, 2010 in the original principal amount of $3,576 and mRNA Fund II, LP dated November 19, 2010 in the original principal amount of $2,715.

(3) Consists of a senior subordinated convertible demand promissory note dated May 28, 2010 in the original principal amount of $353,345, a senior subordinated convertible demand promissory note dated August 25, 2010 in the original principal amount of $346,921 and a senior subordinated convertible demand promissory note dated November 19, 2010 in the original principal amount of $263,403.

(4) Consists of a senior subordinated convertible demand promissory notes issued to: WP VIII Finance, L.P. dated May 28, 2010 in the original principal amount of $3,931,598, WP VIII Finance, L.P. dated August 25, 2010 in the original principal amount of $3,860,115 and WP VIII Finance, L.P. dated November 19, 2010 in the original principal amount of $2,930,828.

(5) C. Boyd Clarke is a director of the company.

(6) Consists of a senior subordinated convertible demand promissory note dated May 28, 2010 in the original principal amount of $11,000, a senior subordinated convertible demand promissory note dated August 25, 2010 in the original principal amount of $10,800 and a senior subordinated convertible demand promissory note dated November 19, 2010 in the original principal amount of $8,200.

The senior subordinated convertible demand promissory notes accrue interest at the rate of 10% per year and mature as of the later of (i) May 28, 2015 and (ii) the 91st day following the earlier of January 10, 2016 or the date of conversion in full of the senior convertible demand promissory notes (further described below). Assuming an initial public offering price of $

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per share, which is the mid-point of the price range on the cover page of this prospectus, and that the closing occurs on , 2012, the $15.0 million in aggregate principal amount of the outstanding senior subordinated convertible demand promissory notes plus all accrued but unpaid interest thereon will convert into approximately shares of common stock.

In connection with the senior subordinated convertible demand promissory note financing, we issued warrants to purchase 7,270,967 shares of our common stock. The warrants are exercisable at a price of $0.07 per share. The warrants remain exercisable for 10 years from the date of issuance. Certain of these warrants were purchased by certain of our principal stockholders and by one of our directors in the following amounts and on the following dates:

Name of Beneficial Owner	Date of Issuance of Warrants	Warrants to Purchase Common Stock
CHP II, L.P.	(1)	24,237
Entities affiliated with Oxford Bioscience Partners	(2)	484,732
S.R. One, Limited	(3)	467,120
Entities affiliated with Warburg Pincus	(4)	5,197,548
C. Boyd Clarke (5)	(6)	14,542

(1) Consists of warrants dated May 28, 2010 to purchase 8,887 shares of common stock, warrants dated August 25, 2010 to purchase 8,725 shares of common stock and warrants dated November 19, 2010 to purchase 6,625 shares of common stock.

(2) Consists of warrants issued to: Oxford Bioscience Partners IV, L.P. dated May 28, 2010 to purchase 175,969 shares of common stock, Oxford Bioscience Partners IV, L.P. dated August 25, 2010 to purchase 172,770 shares of common stock, Oxford Bioscience Partners IV, L.P. dated November 19, 2010 to purchase 131,177 shares of common stock, mRNA Fund II, LP dated May 28, 2010 to purchase 1,766 shares of common stock, mRNA Fund II, LP dated August 25, 2010 to purchase 1,734 shares of common stock and mRNA Fund II, LP dated November 19, 2010 to purchase 1,316 shares of common stock.

(3) Consists of warrants dated May 28, 2010 to purchase 171,277 shares of common stock, warrants dated August 25, 2010 to purchase 168,163 shares of common stock and warrants dated November 19, 2010 to purchase 127,680 shares of common stock.

(4) Consists of warrants issued to: WP VIII Finance, L.P. dated May 28, 2010 to purchase 1,905,768 shares of common stock, WP VIII Finance, L.P. dated August 25, 2010 to purchase 1,871,117 shares of common stock and WP VIII Finance, L.P. dated November 19, 2010 to purchase 1,420,663 shares of common stock.

(5) C. Boyd Clarke is a director of the company.

(6) Consists of warrants dated May 28, 2010 to purchase 5,332 shares of common stock, warrants dated August 25, 2010 to purchase 5,235 shares of common stock and warrants dated November 19, 2010 to purchase 3,975 shares of common stock.

The senior subordinated convertible demand promissory notes and warrants were issued in a private placement in accordance with Section 4(2) of the Securities Act and the shares of common stock issued upon the automatic conversion of the subordinated convertible promissory notes and upon the exercise of the warrants will be restricted securities. The holders of the senior subordinated convertible demand promissory notes and the warrants will be entitled to the registration rights provided in the third amended and restated registration rights agreement, as amended, with regard to the shares of common stock issued upon the automatic conversion of the senior subordinated convertible promissory notes and the exercise of the warrants.

Convertible Notes and Warrants Issued in 2011

In January 2011, we entered into a senior convertible demand promissory note purchase agreement with investors pursuant to which we issued senior convertible demand promissory notes having an aggregate principal amount of $5.8 million issued on January 12, 2011,

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January 18, 2011, January 20, 2011 and February 3, 2011, $4.7 million on March 23, 2011, $4.0 million on June 2, 2011 and $6.5 million on December 28, 2011. Certain of these senior convertible demand promissory notes were purchased by certain of our principal stockholders and by one of our directors in the following amounts and on the following dates:

Name of Beneficial Owner	Date of Issuance of Debt	Original Principal Amount of Debt
CHP II, L.P.	(1)	$ 80,000
Entities affiliated with Saints Capital and Oxford Bioscience Partners	(2)	740,622
Entities affiliated with Saints Capital	(3)	1,773,328
S.R. One, Limited	(4)	811,357
Entities affiliated with Warburg Pincus	(5)	15,407,818
C. Boyd Clarke (6)	(7)	40,000

(1) Consists of a senior convertible demand promissory note dated January 12, 2011 in the original principal amount of $22,000, a senior convertible demand promissory note dated March 23, 2011 in the original principal amount of $18,000, a senior convertible demand promissory note dated June 2, 2011 in the original principal amount of $15,214 and a senior convertible demand promissory note dated December 28, 2011 in the original principal amount of $24,786.

(2) Consists of a senior convertible demand promissory note issued to OBP IV-Holdings LLC dated June 2, 2011 in the original principal amount of $281,703 and a senior convertible demand promissory note issued to OBP IV-Holdings LLC dated December 28, 2011 in the original principal amount of $458,919.

(3) Consists of senior convertible demand promissory notes issued to: Saints Capital VI, L.P. dated January 18, 2011 in the original principal amount of $407,341, Saints Capital VI, L.P. dated February 3, 2011 in the original principal amount of $283,995, Saints Capital VI, L.P. dated March 23, 2011 in the original principal amount of $333,280, Saints Capital VI, L.P. dated March 23, 2011 in the original principal amount of $232,360, Saints Capital Granite, L.P. dated June 2, 2011 in the original principal amount of $196,400 and Saints Capital Granite, L.P. dated December 28, 2011 in the original principal amount of $319,952.

(4) Consists of a senior convertible demand promissory note dated January 12, 2011 in the original principal amount of $223,124, a senior convertible demand promissory note dated March 23, 2011 in the original principal amount of $182,555, a senior convertible demand promissory note dated June 2, 2011 in the original principal amount of $154,304 and a senior convertible demand promissory note dated December 28, 2011 in the original principal amount of $251,374.

(5) Consists of senior convertible demand promissory notes issued to: WP VIII Finance, L.P. dated January 12, 2011 in the original principal amount of $4,237,149, WP VIII Finance, L.P. dated March 23, 2011 in the original principal amount of $3,466,759, WP VIII Finance, L.P. dated June 2, 2011 in the original principal amount of $2,930,260 and WP VIII Finance, L.P. dated December 28, 2011 in the original principal amount of $4,773,650.

(6) C. Boyd Clarke is a director of the company.

(7) Consists of a senior convertible demand promissory note dated January 12, 2011 in the original principal amount of $11,000, a senior convertible demand promissory note dated March 23, 2011 in the original principal amount of $9,000, a senior convertible demand promissory note dated June 2, 2011 in the original principal amount of $7,607 and a senior convertible demand promissory note dated December 28, 2011 in the original principal amount of $12,393.

The senior convertible demand promissory notes accrue interest at the rate of 10% per year and mature five years from the date of issuance. Assuming an initial public offering price of $ per share, which is the mid-point of the price range on the cover page of this prospectus, and that the closing occurs on , 2012, the $21.0 million in aggregate principal amount of the outstanding senior convertible demand promissory notes plus all accrued but unpaid interest thereon will convert into approximately shares of common stock.

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In connection with the senior convertible demand promissory note financing, we issued warrants to purchase 10,195,205 shares of our common stock. The warrants are exercisable at a price of $0.07 per share. The warrants remain exercisable for 10 years from the date of issuance. Certain of these warrants were purchased by certain of our principal stockholders and by one of our directors in the following amounts and on the following dates:

Name of Beneficial Owner	Date of Issuance of Warrants	Warrants to Purchase Common Stock
CHP II, L.P.	(1)	38,778
Entities affiliated with Saints Capital and Oxford Bioscience Partners	(2)	359,002
Entities affiliated with Saints Capital	(3)	859,588
S.R. One, Limited	(4)	393,290
Entities affiliated with Warburg Pincus	(5)	7,468,647
C. Boyd Clarke (6)	(7)	19,390

(1) Consists of warrants dated January 12, 2011 to purchase 10,664 shares of common stock, warrants dated March 23, 2011 to purchase 8,724 shares of common stock, warrants dated June 2, 2011 to purchase 7,375 shares of common stock and warrants dated December 28, 2011 to purchase 12,015 shares of common stock.

(2) Consists of warrants issued to OBP IV-Holdings LLC dated June 2, 2011 to purchase 136,550 shares of common stock and warrants issued to OBP IV-Holdings LLC dated December 28, 2011 to purchase 222,452 shares of common stock.

(3) Consists of warrants issued to: Saints Capital VI, L.P. dated January 18, 2011 to purchase 197,451 shares of common stock, Saints Capital VI, L.P. dated February 3, 2011 to purchase 137,661 shares of common stock, Saints Capital VI, L.P. dated March 23, 2011 to purchase 112,632 shares of common stock, Saints Capital VI, L.P. dated March 23, 2011 to purchase 161,552 shares of common stock, Saints Capital Granite, L.P. dated June 2, 2011 to purchase 95,201 shares of common stock and Saints Capital Granite, L.P. dated December 28, 2011 to purchase 155,091 shares of common stock.

(4) Consists of warrants dated January 12, 2011 to purchase 108,156 shares of common stock, warrants dated March 23, 2011 to purchase 88,490 shares of common stock, warrants dated June 2, 2011 to purchase 74,795 shares of common stock and warrants dated December 28, 2011 to purchase 121,849 shares of common stock.

(5) Consists of warrants issued to: WP VIII Finance, L.P. dated January 12, 2011 to purchase 2,053,878 shares of common stock, WP VIII Finance, L.P. dated March 23, 2011 to purchase 1,680,445 shares of common stock, WP VIII Finance, L.P. dated June 2, 2011 to purchase 1,420,388 shares of common stock and WP VIII Finance, L.P. dated December 28, 2011 to purchase 2,313,936 shares of common stock.

(6) C. Boyd Clarke is a director of the company.

(7) Consists of warrants dated January 12, 2011 to purchase 5,333 shares of common stock, warrants dated March 23, 2011 to purchase 4,363 shares of common stock, warrants dated June 2, 2011 to purchase 3,687 shares of common stock and warrants dated December 28, 2011 to purchase 6,007 shares of common stock.

The senior convertible demand promissory notes and warrants were issued in a private placement in accordance with Section 4(2) of the Securities Act and the shares of common stock issued upon the automatic conversion of the senior convertible demand promissory notes and upon the exercise of the warrants will be restricted securities. The holders of the senior convertible demand promissory notes and the warrants will be entitled to the registration rights provided in the third amended and restated registration rights agreement, as amended, with regard to the shares of common stock issued upon the automatic conversion of the senior convertible promissory notes and the exercise of the warrants.

Reimbursement of Financing Expenses

In connection with our note financings described above under “— Convertible Notes and Warrants Issued in 2009,” “— Convertible Notes and Warrants Issued in 2010” and “— Convertible Notes and Warrants Issued in 2011,” as of February 29, 2012 we have

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reimbursed purchasers affiliated with Warburg Pincus an aggregate of $932,388 for expenses incurred by them in connection with such note financings. In addition, as of February 29, 2012 we have also reimbursed purchasers affiliated with Warburg Pincus an additional $22,426 for expenses incurred by them in connection with this offering.

Agreements with Stockholders

In connection with our note financings described above under "— Convertible Notes and Warrants Issued in 2009," "— Convertible Notes and Warrants Issued in 2010" and "— Convertible Notes and Warrants Issued in 2011," we entered into various stockholder agreements with the holders of our common stock, convertible preferred stock and convertible notes relating to voting rights, information rights and registration rights, among other things.

Our fourth amended and restated securityholders agreement dated January 10, 2011 requires the stockholders party thereto to vote to elect to our board of directors, for so long as our promissory notes remain outstanding and following an election by a majority in principal amount of our convertible notes, voting together as a single class, to elect to reduce the size of our board of directors to seven members, which election was deemed to have been made by the terms of our fourth amended and restated securityholders agreement: (i) a majority of our directors to be individuals designated by a majority in principal amount of our convertible notes, currently Cecilia Gonzalo, Jonathan S. Leff and C. Boyd Clarke, (ii) one individual who is our chief executive officer, currently Mark Leuchtenberger, and (iii) two individuals with relevant industry experience jointly designated by the other directors, currently George M. Milne, Jr., Ph.D. and Harry H. Penner Jr., J.D., L.L.M. In addition, following the conversion of our convertible preferred stock to common stock and the conversion of the senior convertible demand promissory notes, senior subordinated convertible demand promissory notes and subordinated convertible promissory notes (which we refer to collectively as the convertible notes) upon the consummation of the offering made hereby, pursuant to the fourth amended and restated securityholders agreement dated January 10, 2011, we are required to nominate and use our best efforts to elect to our board of directors up to three individuals designated by WP VIII Finance, L.P., a principal stockholder. More specifically, for so long as WP VIII Finance, L.P. owns beneficially at least 40% of the shares of common stock issuable upon conversion of the series B convertible preferred stock initially purchased by it, we are required to nominate and use our best efforts to elect two individuals to our board of directors designated by WP VIII Finance, L.P. For so long as WP VIII Finance, L.P. owns beneficially at least 20% but less than 40% of such shares of common stock, we are required to nominate and use our best efforts to elect to our board of directors one individual designated by WP VIII Finance, L.P. In addition, for so long as WP VIII Finance, L.P. owns beneficially at least 40% of the shares of common stock issuable upon conversion of the senior convertible demand promissory notes, senior subordinated convertible demand promissory notes and subordinated convertible promissory notes initially purchased by WP VIII Finance, L.P., we are required to nominate and use our best efforts to elect to our board of directors one additional individual designated by WP VIII Finance, L.P.

Following the expiration of the lock-up period described below in "Shares Eligible for Future Sale—Lock-up Agreements," pursuant to the third amended and restated registration rights agreement dated June 8, 2006, as amended, the holders of (i) shares of common stock, which include shares of common stock issuable upon conversion of all of our outstanding convertible preferred stock, shares of our common stock issuable upon conversion of our senior convertible demand promissory notes, senior subordinated convertible demand promissory notes and subordinated convertible promissory notes upon completion of

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the offering made hereby, shares of common stock issuable in satisfaction of accrued but unpaid dividends on convertible preferred stock held by our convertible preferred stockholders, (ii) shares of common stock issuable pursuant to the exercise of warrants and (iii) shares of convertible preferred stock issuable pursuant to the exercise of warrants (which shall be exercisable for an equivalent number of shares of common stock upon consummation of the offering made hereby) or their transferees, are entitled to registration rights with respect to the shares of common stock held by them. These shares include substantially all of the shares held by our principal stockholders and their affiliates; the outstanding shares of our convertible preferred stock held by our chief scientific officer, Erin M. Duffy, Ph.D., and her husband William L. Jorgensen, Ph.D., and our directors C. Boyd Clarke and Harry H. Penner Jr., J.D., L.L.M; and the shares of common stock issuable upon conversion of senior convertible demand promissory notes, senior subordinated convertible demand promissory notes and subordinated convertible promissory notes held by our director C. Boyd Clarke.

These stockholder agreements will terminate upon the completion of this offering, except for our obligation to nominate and use our best efforts to elect to our board of directors up to three individuals designated by WP VIII Finance, L.P., and the registration rights granted under our third amended and restated registration rights agreement as more fully described in “Description of Capital Stock—Registration Rights.”

Indemnification Agreements

We will enter into indemnification agreements with each of our directors and certain of our officers. The indemnification agreements and our restated certificate of incorporation and restated by-laws require us to indemnify our directors and officers to the fullest extent permitted by Delaware law. See “Management—Limitation of Directors’ and Officers’ Liability and Indemnification.”

Policy for Approval of Related Person Transactions

Pursuant to the written charter of our audit committee that will be in effect upon completion of this offering, the audit committee is responsible for reviewing and approving, prior to our entry into any such transaction, all transactions in which we are a participant and in which any parties related to us, including our executive officers, our directors, beneficial owners of more than 5% of our securities, immediate family members of the foregoing persons and any other persons whom our board of directors determines may be considered related parties under Item 404 of Regulation S-K, has or will have a direct or indirect material interest.

In reviewing and approving such transactions, the audit committee shall obtain, or shall direct our management to obtain on its behalf, all information that the committee believes to be relevant and important to a review of the transaction prior to its approval. Following receipt of the necessary information, a discussion shall be held of the relevant factors if deemed to be necessary by the committee prior to approval. If a discussion is not deemed to be necessary, approval may be given by written consent of the committee. This approval authority may also be delegated to the chair of the audit committee in some circumstances. No related party transaction shall be entered into prior to the completion of these procedures.

The audit committee or its chair, as the case may be, shall approve only those related party transactions that are determined to be in, or not inconsistent with, the best interests of us and our stockholders, taking into account all available facts and circumstances as the committee or the chair determines in good faith to be necessary in accordance with principles of Delaware

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law generally applicable to directors of a Delaware corporation. These facts and circumstances will typically include, but not be limited to, the benefits of the transaction to us; the impact on a director's independence in the event the related party is a director, an immediate family member of a director or an entity in which a director is a partner, stockholder or executive officer; the availability of other sources for comparable products or services; the terms of the transaction; and the terms of comparable transactions that would be available to unrelated third parties or to employees generally. No member of the audit committee shall participate in any review, consideration or approval of any related party transaction with respect to which the member or any of his or her immediate family members has an interest.

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PRINCIPAL STOCKHOLDERS

The following table and accompanying footnotes present information about the beneficial ownership of our common stock as of March 31, 2012, as adjusted to reflect the shares offered by this prospectus, by:

- each existing stockholder who we know to beneficially own 5% or more of our common stock, which we call our principal stockholders;
- each of our directors;
- each of our named executive officers; and
- all of our current directors and executive officers as a group.

Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to securities. Shares of common stock that may be acquired by an individual or group within 60 days following March 31, 2012 pursuant to the exercise of options or warrants are deemed to be outstanding for the purpose of computing the percentage ownership of such individual or group, but are not deemed to be outstanding for the purpose of computing the percentage ownership of any other person shown in the table. Under these rules, more than one person may be deemed to be a beneficial owner of the same securities and a person may be deemed to be a beneficial owner of securities as to which such person has no economic interest.

The percentage of shares beneficially owned before the offering is based on 210,052,436 shares of our common stock outstanding as of March 31, 2012, which gives effect to the conversion of all shares of our convertible preferred stock outstanding at March 31, 2012 on a 1-for-1 basis into an aggregate of 199,799,907 shares of our common stock effective immediately prior to the completion of this offering, but does not give effect to (i) shares of common stock to be issued upon the consummation of this offering to holders of our convertible preferred stock as payment of accrued but unpaid dividends accrued through an assumed closing date of the offering made hereby of , 2012; (ii) the automatic conversion, as described below, of $35.0 million aggregate principal amount outstanding as of March 31, 2012 and all accrued but unpaid interest on the subordinated convertible promissory notes due upon the closing of the offering made hereby into an aggregate of shares of our common stock; (iii) the automatic conversion, as described below, of $15.0 million aggregate principal amount outstanding as of March 31, 2012 and all accrued but unpaid interest on the senior subordinated convertible demand promissory notes due upon the closing of the offering made hereby into an aggregate of shares of our common stock; or (iv) the automatic conversion, as described below, of $21.0 million aggregate principal amount outstanding as of March 31, 2012 and all accrued but unpaid interest on the senior convertible demand promissory notes due upon the closing of the offering made hereby into an aggregate of shares of our common stock; all of the above assuming an initial public offering price of $ per share, the mid-point of the price range set forth on the cover page of this prospectus, and that the closing occurs on , 2012. This information will be adjusted when a price range is determined.

The percentage of shares beneficially owned after the offering is based on shares of our common stock to be outstanding after the offering and gives effect to (i) shares of common stock to be issued upon the consummation of this offering to holders of our convertible preferred stock as payment of accrued but unpaid dividends accrued through an assumed closing date of the offering made hereby of , 2012; (ii) the automatic conversion, as described below, of $35.0 million aggregate principal amount outstanding as of

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March 31, 2012 and all accrued but unpaid interest on the subordinated convertible promissory notes due upon the closing of the offering made hereby into an aggregate of shares of our common stock; (iii) the automatic conversion, as described below, of $15.0 million aggregate principal amount outstanding as of March 31, 2012 and all accrued but unpaid interest on the senior subordinated convertible demand promissory notes due upon the closing of the offering made hereby into an aggregate of shares of our common stock; (iv) the automatic conversion, as described below, of $21.0 million aggregate principal amount outstanding as of March 31, 2012 and all accrued but unpaid interest on the senior convertible demand promissory notes due upon the closing of the offering made hereby into an aggregate of shares of our common stock; and (v) restricted stock units granted in connection with this offering pursuant to the terms of our Management Bonus Plan and our Non-Employee Director Bonus Plan, to the extent that they will be vested within 60 days, all of the above assuming an initial public offering price of $ per share, the mid-point of the price range set forth on the cover page of this prospectus, and that the closing occurs on , 2012. This information will be adjusted when a price range is determined.

The amount of shares ultimately issuable upon the automatic conversion of the outstanding amount, including accrued interest, on the subordinated convertible promissory notes, senior subordinated convertible demand promissory notes, and senior convertible demand promissory notes, which we refer to here as the convertible notes, in connection with this offering will be determined by the initial public offering price of shares of our common stock in this offering, subject to the limitations of value specified in the respective convertible notes. As a result of these valuation mechanisms, the amount of ownership dilution to our existing stockholders and dilution in net tangible book value that will be experienced by purchasers of our common stock in this offering may vary widely depending on the ultimate public offering price per share of our common stock in this offering.

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Except as indicated in footnotes to this table, we believe that the stockholders named in this table have sole voting and investment power with respect to all shares of common stock shown to be beneficially owned by them, based on information provided to us by such stockholders. Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Rib-X Pharmaceuticals, Inc., 300 George Street, Suite 301, New Haven, Connecticut 06511.

	Prior to this Offering		After this Offering Assuming the Underwriters' Option is not Exercised		After this Offering Assuming the Underwriters' Option is Exercised in Full	
	Shares of Common Stock	Percentage of Common Stock	Shares of Common Stock	Percentage of Common Stock	Shares of Common Stock	Percentage of Common Stock
Principal Stockholders:						
CHP II, L.P. (1)	11,373,405	5.4%				
MedImmune Ventures, Inc. (2)	12,645,958	6.0%				
Entities affiliated with Oxford Bioscience Partners (3)	29,908,028	14.0%				
Entities affiliated with Saints Capital (4)	50,141,523	23.2%				
S.R. One, Limited (5)	15,896,668	7.5%				
Entities affiliated with Warburg Pincus (6)	107,546,217	46.4%				
Directors and Executive Officers:						
Mark Leuchtenberger (7)	7,225,397	3.3%				
Robert A. Conerly (8)	1,936,058	*				
Erin M. Duffy, Ph.D. (9)	1,246,347	*				
Scott J. Hopkins, M.D. (10)	2,497,289	1.2%				
Anthony Sabatelli, Ph.D., J.D. (11)	666,618	*				
George M. Milne, Jr., Ph.D. (12)	387,500	*				
C. Boyd Clarke (13)	604,441	*				
Cecilia Gonzalo (6)(14)	107,546,217	46.4%				
Jonathan S. Leff (6)(15)	107,701,217	46.5%				
Harry H. Penner Jr., J.D., L.L.M. (16)	900,315	*				
All current executive officers and directors as a group (12 persons) (17)	123,455,181	50.5%				

* Indicates beneficial ownership of less than 1%.

(1) Prior to this offering, consists of 11,310,390 shares and warrants to purchase 63,015 shares of common stock that are immediately exercisable held by CHP II, L.P. ("CHP"). The shares beneficially owned after the offering also include shares of common stock issuable to CHP as a holder of convertible preferred stock as payment of accrued but unpaid dividends accrued through an assumed closing date of , 2012 and shares of common stock issuable to CHP upon the automatic conversion at the closing of this offering of the $80,000 aggregate principal amount of senior convertible demand promissory notes and $50,000 aggregate principal amount of senior subordinated convertible demand promissory notes held by CHP, plus all accrued but unpaid interest, as described above, assuming an initial public offering price of $ per share, which is the mid-point of the price range on the cover page of this prospectus, and that the closing occurs on , 2012. CHP is advised and managed by its general partner, CHP II Management, LLC ("CHP II Management"). The managing members of CHP II Management are John K. Clarke, Brandon H. Hull and John J. Park. Each of Messrs. Clarke, Hull and Park and CHP II Management share voting and investment control over the securities held by CHP. Each of Messrs. Clarke, Hull and Park disclaim beneficial ownership of such securities except to the extent of his pecuniary interest therein. The address for CHP is c/o Cardinal Partners, 230 Nassau Street, Princeton, New Jersey 08542.

(2) Prior to this offering, consists of 11,310,389 shares and warrants to purchase 1,335,569 shares of common stock that are immediately exercisable held by MedImmune Ventures, Inc. ("MVI"). The shares beneficially owned after the offering also include shares of common stock issuable to MVI as a holder of convertible preferred stock as payment of accrued but unpaid dividends accrued through an assumed closing date of , 2012 and shares of common stock issuable to MVI upon the automatic conversion at the closing of this offering of the $2,755,279 aggregate principal amount of subordinated convertible promissory notes held by MVI, plus all accrued but unpaid interest, as described above, assuming an initial public offering price of $ per share, which is the mid-point of the price range on the cover page of this prospectus, and that the closing occurs on , 2012. The address for MVI is One MedImmune Way, Gaithersburg, Maryland 20878.

(3) Prior to this offering, consists of 26,106,970 shares and warrants to purchase 3,503,984 shares of common stock that are immediately exercisable held by OBP IV-Holdings LLC ("OBP IV") and 261,941 shares and warrants to purchase 35,133 shares of common stock that are immediately exercisable held by mRNA II-Holdings LLC ("mRNA II"). The shares beneficially owned after

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the offering also include shares of common stock issuable to OBP IV and mRNA II as holders of convertible preferred stock as payment of accrued but unpaid dividends accrued through an assumed closing date of , 2012 and shares of common stock issuable to OBP IV and mRNA II upon the automatic conversion at the closing of this offering of the $1,466,579 aggregate principal amount of senior convertible demand promissory notes, $990,066 aggregate principal amount of senior subordinated convertible demand promissory notes and $4,772,072 aggregate principal amount of subordinated convertible promissory notes held by OBP IV and $14,664 aggregate principal amount of senior convertible demand promissory notes, $9,934 aggregate principal amount of senior subordinated convertible demand promissory notes and $47,880 aggregate principal amount of subordinated convertible promissory notes held by mRNA II, plus all accrued but unpaid interest, as described above, assuming an initial public offering price of $ per share, which is the mid-point of the price range on the cover page of this prospectus, and that the closing occurs on , 2012. Oxford Bioscience Partners IV L.P. ("OBP LP") is a member of OBP IV; mRNA Fund II L.P. ("mRNA LP") is a member of mRNA II; Saints Capital Granite, L.P. ("Saints LP") is a member of both OBP IV and mRNA II; OBP Management IV L.P. ("OBP Management IV") is the sole general partner of each of OBP LP and mRNA LP; Saints Capital Granite, LLC ("Saints LLC") is the sole general partner of Saints LP; Jonathan Fleming and Alan Walton are individual general partners of OBP Management IV; and Scott Halsted, David P. Quinlivan and Kenneth B. Sawyer are managing members of Saints LLC. Each of Mr. Fleming, Dr. Walton, OBP Management IV, OBP LP, Mr. Halsted, Mr. Quinlivan, Mr. Sawyer, Saints LLC and Saints LP share voting and investment control over the securities held by OBP IV. Each of Mr. Fleming, Dr. Walton, OBP Management IV, mRNA LP, Mr. Halsted, Mr. Quinlivan, Mr. Sawyer, Saints LLC and Saints LP share voting and investment control over the securities held by mRNA II. Each of Mr. Fleming, Dr. Watson, and Messrs. Halsted, Quinlivan and Sawyer disclaims beneficial ownership of the securities held by OBP IV and mRNA II except to the extent of his pecuniary interest therein, if any. The address for OBP IV and mRNA II is c/o Saints Capital, 475 Sansome Street, Suite 1850, San Francisco, California 94111.

(4) Prior to this offering, consists of the securities held by OBP IV and mRNA II described in footnote 3 above, plus 17,580,644 shares and warrants to purchase 2,652,851 shares of common stock that are immediately exercisable held by Saints LP. The shares beneficially owned after the offering also include shares of common stock issuable to Saints LP as a holder of convertible preferred stock as payment of accrued but unpaid dividends accrued through an assumed closing date of , 2012 and shares of common stock issuable to Saints LP upon the automatic conversion at the closing of this offering of the $1,032,707 aggregate principal amount of senior convertible demand promissory notes, $1,226,571 aggregate principal amount of senior subordinated convertible demand promissory notes and $3,213,552 aggregate principal amount of subordinated convertible promissory notes held by Saints LP, plus all accrued but unpaid interest, as described above, assuming an initial public offering price of $ per share, which is the mid-point of the price range on the cover page of this prospectus, and that the closing occurs on , 2012. As described in footnote 3 above, Saints LLC is the sole general partner of Saints LP, and Scott Halsted, David P. Quinlivan and Kenneth B. Sawyer are the managing members of Saints LLC. Each of Messrs. Halsted, Quinlivan and Sawyer and Saints LLC share voting and investment control over the shares held by Saints LP, OBP IV and mRNA II. Each of Messrs. Halsted, Quinlivan and Sawyer disclaims beneficial ownership of such securities except to the extent of his pecuniary interest therein. The address for Saints LP, OBP IV and mRNA II is c/o Saints Capital, 475 Sansome Street, Suite 1850, San Francisco, California 94111.

(5) Prior to this offering, consists of 13,812,427 shares and warrants to purchase 2,084,241 shares of common stock that are immediately exercisable held by S.R. One, Limited ("SRO"). The shares beneficially owned after the offering also include shares of common stock issuable to SRO as a holder of convertible preferred stock as payment of accrued but unpaid dividends accrued through an assumed closing date of , 2012 and shares of common stock issuable to SRO upon the automatic conversion at the closing of this offering of the $811,357 aggregate principal amount of senior convertible demand promissory notes, $963,669 aggregate principal amount of senior subordinated convertible demand promissory notes and $2,524,762 aggregate principal amount of subordinated convertible promissory notes held by SRO, plus all accrued but unpaid interest, as described above, assuming an initial public offering price of $ per share, which is the mid-point of the price range on the cover page of this prospectus, and that the closing occurs on , 2012. SRO, a wholly-owned subsidiary of GlaxoSmithKline plc, exercises voting and investment control over the securities. The address for SRO is 161 Washington Street, Suite 500, Conshohocken, Pennsylvania 19428.

(6) Prior to this offering, consists of 85,915,605 shares and warrants to purchase 12,666,195 shares of common stock that are immediately exercisable held by WP VIII Finance, L.P., a Delaware limited partnership ("WPVIII Finance"), and warrants to purchase 8,964,417 shares of common stock that are immediately exercisable held by Warburg Pincus Private Equity VIII, L.P., a Delaware limited partnership ("WP VIII"). The shares beneficially owned after the offering also include shares of common stock issuable to WPVIII Finance as a holder of convertible preferred stock as payment of accrued but unpaid dividends accrued through an assumed closing date of , 2012 and shares of common stock issuable to WPVIII Finance and WP VIII upon the automatic conversion at the closing of this offering of the $15,407,818 aggregate principal amount of senior convertible demand promissory notes and $10,722,541 aggregate principal amount of senior subordinated convertible demand promissory notes held by

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WPVIII Finance and $18,493,593 aggregate principal amount of subordinated convertible promissory notes held by WP VIII, plus all accrued but unpaid interest, as described above, assuming an initial public offering price of $ per share, which is the mid-point of the price range on the cover page of this prospectus, and that the closing occurs on , 2012. WPVIII Finance is, indirectly, majority owned by WP VIII. WPVIII GP, L.P., a Delaware limited partnership ("WPVIII GP"), is the general partner of WPVIII Finance. WP VIII is the general partner of WPVIII GP. Warburg Pincus Partners LLC, a New York limited liability company ("WP Partners"), is the general partner of WP VIII, and a direct subsidiary of Warburg Pincus & Co., a New York general partnership ("WP"). WP is the managing member of WP Partners. Warburg Pincus LLC, a New York limited liability company ("WP LLC"), is the manager of WPVIII Finance and WP VIII. Our directors Jonathan S. Leff and Cecilia Gonzalo are each partners of WP and managing directors and members of WP LLC. Charles R. Kaye and Joseph P. Landy are the managing general partners of WP and the managing members and co-presidents of WP LLC and may be deemed to control the affiliates of Warburg Pincus. Each of Messrs. Kaye, Landy and Leff and Ms. Gonzalo share voting and investment control over the securities held by WPVIII Finance and WP VIII. Each of Messrs. Kaye, Landy and Leff and Ms. Gonzalo disclaims beneficial ownership of such securities except to the extent of his or her pecuniary interest therein. The address for WPVIII Finance and WP VIII is c/o Warburg Pincus LLC, 450 Lexington Avenue, New York, New York 10017.

(7) Consists of shares issuable upon the exercise of options exercisable within 60 days of March 31, 2012.

(8) Consists of 582,817 shares and 1,353,241 shares issuable upon the exercise of options exercisable within 60 days of March 31, 2012.

(9) Prior to this offering, consists of 1,400 shares held by Dr. Duffy, 318,750 shares held by Dr. Duffy's husband, William L. Jorgensen, Ph.D., 102,936 shares held jointly by Dr. Duffy and Dr. Jorgensen, 793,261 shares issuable upon the exercise of options held by Dr. Duffy exercisable within 60 days of March 31, 2012 and 30,000 shares issuable upon the exercise of options held by Dr. Jorgensen exercisable within 60 days of March 31, 2012. The shares beneficially owned after the offering also include shares of common stock issuable to Dr. Duffy and Dr. Jorgensen as holders of convertible preferred stock as payment of accrued but unpaid dividends accrued through an assumed closing date of , 2012.

(10) Consists of 582,897 shares and 1,914,392 shares issuable upon the exercise of options exercisable within 60 days of March 31, 2012.

(11) Consists of 298,285 shares and 368,333 shares issuable upon the exercise of options exercisable within 60 days of March 31, 2012.

(12) Consists of 200,000 shares and 187,500 shares issuable upon the exercise of options exercisable within 60 days of March 31, 2012 held by Dr. Milne, but excludes 4,847,310 shares and warrants to purchase 215,037 shares of common stock that are immediately exercisable held by Radius Venture Partners II, L.P. ("Radius II"), for which Dr. Milne is a venture partner, as well as shares of common stock issuable upon the automatic conversion at the closing of this offering of the $205,258 aggregate principal amount of senior convertible demand promissory notes and $238,362 aggregate principal amount of senior subordinated convertible demand promissory notes held by Radius II because Dr. Milne does not beneficially own the securities held by Radius II.

(13) Prior to this offering, consists of 311,577 shares, warrants to purchase 67,864 shares of common stock that are immediately exercisable and 225,000 shares issuable upon the exercise of options exercisable within 60 days of March 31, 2012. The shares beneficially owned after the offering also include shares of common stock issuable to Mr. Clarke as a holder of convertible preferred stock as payment of accrued but unpaid dividends accrued through an assumed closing date of , 2012 and shares of common stock issuable upon the automatic conversion at the closing of this offering of the $40,000 aggregate principal amount of senior convertible demand promissory notes, $30,000 aggregate principal amount of senior subordinated convertible demand promissory notes and $70,000 aggregate principal amount of subordinated convertible promissory notes, plus all accrued but unpaid interest, as described above, assuming an initial public offering price of $ per share, which is the mid-point of the price range on the cover page of this prospectus, and that the closing occurs on , 2012.

(14) Reflects securities beneficially owned by WPVIII Finance and WP VIII as set forth in footnote 6, for which Ms. Gonzalo may be deemed to share voting and investment control over shares held by WP VIII Finance and WP VIII. Ms. Gonzalo disclaims beneficial ownership of such shares except to the extent of her pecuniary interest therein, if any.

(15) Reflects 155,000 shares issuable upon the exercise of options exercisable within 60 days of March 31, 2012 held by Mr. Leff and securities beneficially owned by WPVIII Finance and WP VIII as set forth in footnote 6, for which Mr. Leff may be deemed to share voting and investment control over shares held by WP VIII Finance and WP VIII. Mr. Leff disclaims beneficial ownership of such shares held by WPVIII Finance and WP VIII except to the extent of his pecuniary interest therein, if any.

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(16) Prior to this offering, consists of 582,815 shares and 317,500 shares issuable upon the exercise of options exercisable within 60 days of March 31, 2012. The shares beneficially owned after the offering also include shares of common stock issuable to Mr. Penner as a holder of convertible preferred stock as payment of accrued but unpaid dividends accrued through an assumed closing date of , 2012.

(17) See footnotes 7 through 16. Also includes shares beneficially owned by our current executive officers who are not named executive officers as follows: 227,499 shares issuable upon the exercise of options exercisable within 60 days of March 31, 2012 held by Jarrod Longcor and 62,500 shares issuable upon the exercise of options exercisable within 60 days of March 31, 2012 held by Colleen Wilson.

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DESCRIPTION OF CAPITAL STOCK

The following is a summary of our capital stock and provisions of our restated certificate of incorporation and restated by-laws, as they will be in effect upon the closing of this offering. For more detailed information, please see our restated certificate of incorporation and restated by-laws, which are filed with the SEC as exhibits to the registration statement of which this prospectus forms a part. The descriptions of our common stock and convertible preferred stock reflect changes to our capital structure that will occur upon the closing of the offering made hereby.

Upon the closing of the offering made hereby, our authorized capital stock will consist of shares of our common stock, par value $0.001 per share, and shares of convertible preferred stock, par value $0.001 per share.

As of March 31, 2012, after giving effect to the conversion of all outstanding shares of our convertible preferred stock into shares of our common stock upon completion of this offering, as described above in “Capitalization,” but excluding any shares issued in satisfaction of any accrued but unpaid dividends on the convertible preferred stock and excluding the effect of the conversion of the senior convertible demand promissory notes, senior subordinated convertible demand promissory notes and subordinated convertible promissory notes into shares of our common stock upon completion of this offering, we would have had 210,052,436 shares of common stock outstanding held of record by 114 stockholders. Immediately following the completion of this offering made hereby, we will have shares of common stock outstanding (and shares of common stock outstanding if the underwriters exercise their option to purchase additional shares in full) and no shares of convertible preferred stock outstanding.

During 2009, 2010 and 2011, we borrowed $35.0 million, $15.0 million and $21.0 million, respectively, through multiple issuances of convertible notes payable and warrants for the purchase of our common stock, which we refer to as the 2009 Financing, 2010 Financing and 2011 Financing, respectively. We refer to the convertible notes issued in the 2009 Financing, 2010 Financing and 2011 Financing as the 2009 Notes, 2010 Notes and 2011 Notes, respectively. The 2009 Financing, 2010 Financing and 2011 Financing have significant conversion rights, in particular the conversion feature of the 2011 Financing which also amended, effective January 2011, the conversion rights of the 2009 and 2010 Financings. Such conversion rights provide that in the event of an IPO prior to maturity the outstanding principal and accrued but unpaid interest on the 2009 Notes, 2010 Notes and 2011 Notes will automatically convert into shares of common stock immediately prior to the closing of this offering, assuming an initial public offering price per share of $, the mid-point of the price range set forth on the cover page of this prospectus, and that the closing occurs on , 2012. It is currently anticipated that after issuing such number of shares of common stock to effect the conversion of the 2009 Notes, 2010 Notes and 2011 Notes, that we will effect a reverse stock split that would materially impact both the number of common stock and common stock equivalents outstanding, as well as the exercise price of such options and other common stock equivalents.

Common Stock

As of March 31, 2012, we had issued and outstanding 10,252,529 shares of common stock, held by 74 stockholders of record, and there were outstanding options to purchase 22,019,572 shares of common stock and outstanding warrants to purchase 45,698,760 shares of common stock. Holders of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders, and do not have cumulative voting rights.

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Subject to preferences that may be applicable to any outstanding shares of convertible preferred stock, holders of common stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by our board of directors out of funds legally available for dividend payments. All outstanding shares of common stock are fully paid and nonassessable, and the shares of common stock to be issued upon completion of this offering will be fully paid and nonassessable. The holders of common stock have no preferences or rights of conversion, exchange, pre-emption or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. In the event of any liquidation, dissolution or winding-up of our affairs, holders of common stock will be entitled to share ratably in our assets that are remaining after payment or provision for payment of all of our debts and obligations and after liquidation payments to holders of outstanding shares of convertible preferred stock, if any.

Preferred Stock

As of March 31, 2012, we had issued and outstanding 3,635,482 shares of Series A-1 convertible preferred stock held by six stockholders of record, 8,482,793 shares of Series A-1(A) convertible preferred stock held by eight stockholders of record, 3,887,804 shares of Series A-L convertible preferred stock held by 26 stockholders of record, 70,230,451 shares of Series B convertible preferred stock held by 31 stockholders of record, 32,370,940 shares of Series B-1 convertible preferred stock held by eight stockholders of record, 52,724,761 shares of Series C convertible preferred stock held by eight stockholders of record and 28,467,676 shares of Series C-1 convertible preferred stock held by six stockholders of record, and there were outstanding warrants to purchase 969,462 shares of Series C convertible preferred stock. The holders of our convertible preferred stock are entitled to a cumulative dividend at the rate of 8.0% per year. Upon completion of this offering, all of our outstanding shares of convertible preferred stock will convert into shares of common stock. We will also issue shares of common stock upon the closing of the offering made hereby in satisfaction of accrued but unpaid dividends on our convertible preferred stock, assuming that the closing occurs on , 2012.

If we issue convertible preferred stock after the closing of the offering made hereby, such convertible preferred stock would have priority over common stock with respect to dividends and other distributions, including the distribution of assets upon liquidation. Our board of directors has the authority, without further stockholder authorization, to issue from time to time up to shares of convertible preferred stock in one or more series and to fix the terms, limitations, voting rights, relative rights and preferences and variations of each series. Although we have no present plans to issue any other shares of convertible preferred stock, the issuance of shares of convertible preferred stock, or the issuance of rights to purchase such shares, could decrease the amount of earnings and assets available for distribution to the holders of common stock, could adversely affect the rights and powers, including voting rights, of the common stock, and could have the effect of delaying, deterring or preventing a change of control of us or an unsolicited acquisition proposal.

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Warrants

As of March 31, 2012, we had warrants outstanding for the number of shares of our common and convertible preferred stock at the exercise prices and expiration dates set forth below. Warrants entitle the holder to purchase shares of our common or convertible preferred stock, as applicable, at the specified exercise price at any time prior to the expiration date. Except as noted in the footnotes to the table below, all of the warrants are exercisable for shares of common stock:

Expiration Date	Number of Shares	Weighted-Average Exercise Price
June 2012 (1)(2)(3)	500,000	$ 0.6189
September 27, 2012 (1)(2)(3)	52,717	0.6189
September 28, 2017 (1)(3)(4)(5)(6)	969,462	0.6189
January 8, 2019 (1)(2)(3)(7)	12,118,276	0.2500
December 11, 2019 (1)(2)(3)(7)	4,847,310	0.2500
May 28, 2020 (1)(2)(3)(7)	2,610,890	0.0700
June 2, 2020 (1)(2)(3)(7)	55,130	0.0700
August 25, 2020 (1)(2)(3)(7)	2,617,548	0.0700
November 19, 2020 (1)(2)(3)(7)	1,987,399	0.0700
January 12, 2021 (1)(2)(3)(7)	2,454,278	0.0700
January 18, 2021 (1)(2)(3)(7)	197,451	0.0700
January 20, 2021 (1)(2)(3)(7)	14,293	0.0700
February 3, 2021 (1)(2)(3)(7)	137,661	0.0700
March 23, 2021 (1)(2)(3)(7)	2,293,920	0.0700
June 2, 2021 (1)(2)(3)(7)	1,938,923	0.0700
December 28, 2021 (1)(2)(3)(7)	3,158,679	0.0700
February 17, 2019 (2)(3)(7)	10,714,285	0.0700
Total:	46,668,222	

(1) Each of these warrants contains anti-dilution provisions providing for adjustments to the exercise price upon the issuance of shares of our common stock for no consideration or at a price less than the exercise price, excluding shares of our common stock issuable upon exercise of options, warrants, conversion of convertible securities and certain issuances approved by a majority of our board of directors and, for certain of these warrants, the holders of a majority in principal amount of our senior convertible demand promissory notes. These antidilution rights terminate upon the offering.

(2) Each of these warrants has net exercise provisions under which the holder may, in lieu of payment of the exercise price in cash, surrender the warrant and receive a net amount of shares of our common stock based on the fair market value of the underlying shares of our common stock at the time of exercise of the warrant, after deduction of the aggregate exercise price.

(3) The shares underlying each of these warrants are entitled to certain registration rights set forth in our registration rights agreement. See "— Registration Rights" below for a description of these registration rights.

(4) These warrants are exercisable for the purchase of shares of our Series C convertible preferred stock. Upon completion of this offering, these warrants will be exercisable for an equivalent number of shares of our common stock at the same exercise price.

(5) Each of these warrants provides that immediately before its expiration, if the fair market value of one share of Series C convertible preferred stock (or following this offering, one share of common stock) is greater than the exercise price, the warrant will be automatically exercised pursuant to the net exercise provision.

(6) Each of these warrants has net exercise provisions under which the holder may, in lieu of payment of the exercise price in cash, surrender the warrant and receive a net amount of shares of our Series C convertible preferred stock (or following this offering, shares of common stock) based on the fair market value of the underlying shares of our common stock at the time of exercise of the warrant, after deduction of the aggregate exercise price.

(7) Each of these warrants provides that immediately before its expiration, if the fair market value of one share of common stock is greater than the exercise price, the warrant will be automatically exercised pursuant to the net exercise provision.

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Voting Rights

Following the conversion of our convertible preferred stock to common stock and the conversion of the convertible notes upon the consummation of the offering made hereby, pursuant to the fourth amended and restated securityholders agreement dated January 10, 2011, we are required to nominate and use our best efforts to elect to our board of directors up to three individuals designated by WP VIII Finance, L.P., a principal stockholder. More specifically, for so long as WP VIII Finance, L.P. owns beneficially at least 40% of the shares of common stock issuable upon conversion of the Series B convertible preferred stock initially purchased by it, we are required to nominate and use our best efforts to elect to our board of directors two individuals designated by WP VIII Finance, L.P. For so long as WP VIII Finance, L.P. owns beneficially at least 20% but less than 40% of such shares of common stock, we are required to nominate and use our best efforts to elect to our board of directors one individual designated by WP VIII Finance, L.P. In addition, for so long as WP VIII Finance, L.P. owns beneficially at least 40% of the shares of common stock issuable upon conversion of the convertible notes initially purchased by WP VIII Finance, L.P., we are required to nominate and use our best efforts to elect to our board of directors one additional individual designated by WP VIII Finance, L.P. Our board of directors, which currently consists of six directors and one vacancy, has the power to set the number of directors on our board from time to time.

Registration Rights

Following the expiration of the lock-up period described below in “Shares Eligible for Future Sale — Lock-up Agreements,” the holders of shares of common stock, which includes shares of common stock issuable upon conversion of all of our outstanding convertible preferred stock, shares of our common stock issuable upon conversion of our convertible notes upon completion of the offering made hereby and shares of common stock issuable in satisfaction of accrued but unpaid dividends on convertible preferred stock held by our convertible preferred stockholders, shares of common stock issuable pursuant to the exercise of warrants and shares of Series C convertible preferred stock issuable pursuant to the exercise of warrants (which will be issuable for an equivalent number of shares of common stock following the offering made hereby) or their transferees, are entitled to certain registration rights with respect to these securities as set forth in an agreement between us and the holders of these securities.

We are generally required to pay all expenses incurred in connection with registrations effected in connection with the following rights, excluding underwriting discounts and commissions, and fees and expenses of counsel to the registering security holders. All registration rights described below shall terminate at the earlier of (1) the fifth anniversary of the date of effectiveness of the registration statement for the offering made hereby, (2) such shares have been registered under the Securities Act and disposed of in accordance with such registration, (3) such shares have been sold under Rule 144 promulgated under the Securities Act, (4) such shares are eligible to be sold or distributed pursuant to Rule 144(k) promulgated under the Securities Act, or (5) such shares have ceased to be outstanding.

Demand rights. At any time on or after 180 days following the effective date of the registration statement filed in connection with this offering, subject to specified limitations, the holders representing (i) at least 40% of the registrable shares outstanding (excluding registered shares issued upon conversion of our Series C convertible preferred stock) or (ii) at least 40% of the registrable shares outstanding and issued upon conversion of our Series C convertible preferred stock, may require that we register all or a portion of these securities for sale under the Securities Act, which we refer to as a demand registration, if the aggregate value of such securities is at least $1,000,000. We may be required to effect up to two registrations that are

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declared or ordered effective proposed by holders of at least 40% of the registrable shares outstanding (excluding registrable shares issued upon conversion of our series C convertible preferred stock) and up to two registrations that are declared or ordered effective proposed by holders of at least 40% of the registrable shares outstanding and issued upon conversion of our Series C convertible preferred stock. Stockholders with these registration rights who are not part of an initial registration demand are entitled to notice and are entitled to include their registrable shares in the registration. Under certain circumstances, our board of directors may suspend our obligations to register registrable shares.

Piggyback rights. If we propose to register any of our securities under the Securities Act, other than in connection with (i) a registration relating solely to our employee benefit plans, (ii) a registration relating solely to a business combination or merger involving us, the holders of these registrable shares are entitled to notice of such registration and are entitled to include their shares of common stock in the registration. Under certain circumstances, the underwriters, if any, may limit the number of shares included in any such registration. In addition, in certain circumstances, our board of directors may suspend our obligations to register registrable shares.

Form S-3 rights. If we become eligible to file registration statements on Form S-3, subject to specified limitations, the holders of these registrable shares may require us to register all or a portion of their registrable shares on Form S-3, if the anticipated aggregate value of such securities is at least $500,000. Such requests for registration shall not be considered a demand registration pursuant to the "Demand rights" section above. We are not required to (i) effect more than two such registrations in any 12-month period or (ii) effect such registration within 180 days of the effective date of any demand registration as described in the "Demand rights" section above. Stockholders with these registration rights who are not part of an initial registration demand are entitled to notice and are entitled to include their registrable shares in the registration. Under certain circumstances, our board of directors may suspend our obligations to register registrable shares.

Anti-Takeover Effects of Delaware Law and Our Restated Certificate of Incorporation and Restated By-Laws

The provisions of Delaware law, our restated certificate of incorporation to be filed upon completion of this offering and our restated by-laws to be effective upon completion of this offering discussed below could discourage or make it more difficult to accomplish a proxy contest or other change in our management or the acquisition of control by a holder of a substantial amount of our voting stock. It is possible that these provisions could make it more difficult to accomplish, or could deter, transactions that stockholders may otherwise consider to be in their best interests or in our best interests. These provisions are intended to enhance the likelihood of continuity and stability in the composition of our board of directors and in the policies formulated by the board of directors and to discourage certain types of transactions that may involve an actual or threatened change of our control. These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. Such provisions also may have the effect of preventing changes in our management.

Delaware Statutory Business Combinations Provision

We are subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law. Section 203 prohibits a publicly-held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the

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business combination is, or the transaction in which the person became an interested stockholder was, approved in a prescribed manner or another prescribed exception applies. For purposes of Section 203, a "business combination" is defined broadly to include a merger, asset sale or other transaction resulting in a financial benefit to the interested stockholder, and, subject to certain exceptions, an "interested stockholder" is a person who, together with his or her affiliates and associates, owns, or within three years prior, did own, 15% or more of the corporation's voting stock.

Classified Board of Directors; Removal of Directors for Cause

Our restated certificate of incorporation and restated by-laws to be effective upon completion of this offering provide that upon completion of this offering, our board of directors will be divided into three classes, with the term of office of the first class to expire at the first annual meeting of stockholders following the initial classification of directors, the term of office of the second class to expire at the second annual meeting of stockholders following the initial classification of directors, and the term of office of the third class to expire at the third annual meeting of stockholders following the initial classification of directors. At each annual meeting of stockholders, directors elected to succeed those directors whose terms expire will be elected for a three-year term of office. All directors elected to our classified board of directors will serve until the election and qualification of their respective successors or their earlier resignation or removal. The board of directors is authorized to create new directorships and to fill such positions so created and is permitted to specify the class to which any such new position is assigned. The person filling such position would serve for the term applicable to that class. The board of directors, or its remaining members, even if less than a quorum, is also empowered to fill vacancies on the board of directors occurring for any reason for the remainder of the term of the class of directors in which the vacancy occurred. Members of the board of directors may only be removed for cause and only by the affirmative vote of a majority of our outstanding voting stock. These provisions are likely to increase the time required for stockholders to change the composition of the board of directors. For example, at least two annual meetings will be necessary for stockholders to effect a change in a majority of the members of the board of directors.

Advance Notice Provisions for Stockholder Proposals and Stockholder Nominations of Directors

Our restated by-laws provide that, for nominations to the board of directors or for other business to be properly brought by a stockholder before a meeting of stockholders, the stockholder must first have given timely notice of the proposal in writing to our Secretary. For an annual meeting, a stockholder's notice generally must be delivered not less than 45 days nor more than 75 days prior to the anniversary of the mailing date of the proxy statement for the previous year's annual meeting. For a special meeting, the notice must generally be delivered not earlier than the 90th day prior to the meeting and not later than the later of (1) the 60th day prior to the meeting or (2) the 10th day following the day on which public announcement of the meeting is first made. Detailed requirements as to the form of the notice and information required in the notice are specified in the restated by-laws. If it is determined that business was not properly brought before a meeting in accordance with our bylaw provisions, such business will not be conducted at the meeting.

Special Meetings of Stockholders

Special meetings of the stockholders may be called only by our board of directors pursuant to a resolution adopted by a majority of the total number of directors, unless and for so long as WP VIII Finance, L.P. and Warburg Pincus Private Equity VIII, L.P. hold at least 50% of our

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outstanding capital stock on a fully diluted basis, in which case special meetings of the stockholders may be called by the affirmative vote of the holders of a majority of our outstanding voting stock.

No Stockholder Action by Written Consent

For so long as WP VIII Finance, L.P. and Warburg Pincus Private Equity VIII, L.P. hold at least 50% of our outstanding capital stock on a fully diluted basis, our restated certificate of incorporation and restated by-laws permit our stockholders to act by written consent. If and when WP VIII Finance, L.P. and Warburg Pincus Private Equity VIII, L.P. hold less than 50% of our outstanding capital stock on a fully diluted basis, any action to be effected by our stockholders must be effected at a duly called annual or special meeting of the stockholders.

Super Majority Stockholder Vote Required for Certain Actions

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 by-laws, unless the corporation's certificate of incorporation or by-laws, as the case may be, requires a greater percentage. Our restated certificate of incorporation requires the affirmative vote of the holders of at least 75% of our outstanding voting stock to amend or repeal any of the provisions discussed in this section of this prospectus entitled "Anti-Takeover Effects of Delaware Law and Our Restated Certificate of Incorporation and Restated By-Laws," other than with regards to special meetings of stockholders and stockholder action by written consent. This 75% stockholder vote would be in addition to any separate class vote that might in the future be required pursuant to the terms of any convertible preferred stock that might then be outstanding. In addition, except as described below, a 75% vote is also required for any amendment to, or repeal of, our restated by-laws by the stockholders. Our restated by-laws may also be amended or repealed by a simple majority vote of the board of directors. Notwithstanding the foregoing, if and for so long as WP VIII Finance, L.P. and Warburg Pincus Private Equity VIII, L.P. hold at least 50% of our outstanding capital stock on a fully diluted basis, our restated by-laws may be amended or repealed by a vote of at least 50% of our outstanding voting stock.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

Stock Market Listing

We have applied to list our common stock on the NASDAQ Global Market under the symbol "RIBX."

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DESCRIPTION OF CERTAIN INDEBTEDNESS

Set out below is a description of our secured loans:

Secured Loans

In February 2012, we entered into a Loan and Security Agreement, or loan agreement, with Oxford Finance LLC and borrowed an aggregate principal amount of $15.0 million under the loan agreement. Interest on the secured loans made under the loan agreement accrues at the rate of 9.1% per annum. We are required to make monthly payments of interest only commencing on April 1, 2012 and monthly payments of principal and interest commencing on January 1, 2013. In addition, we are required to pay a $75,000 facility fee at the inception of the secured loans, lender's expenses, and, in the event of prepayment of the term loans, a prepayment fee. In addition, upon repayment of the total amount borrowed, we will be required to pay an amount equal to 4.5% of the total amount borrowed. The loan agreement contains standard restrictive covenants that impose significant operating and financial restrictions on our operations and also contains events of default customary for loan agreements of this type, including, among other things, nonpayment of principal or interest when due and the occurrence of a material adverse change, as defined in the loan agreement. The secured loans will mature on June 1, 2015.

The secured promissory notes evidencing the secured loans are secured by a first priority security interest in substantially all of our assets, excluding our intellectual property. In connection with the loan agreement, we entered into a negative pledge arrangement in which we have agreed not to encumber our intellectual property. We also granted to the lender a right to purchase up to $750,000 of equity securities or securities convertible into equity securities in certain future private placements for as long as the secured loans remain outstanding.

The secured promissory notes are senior to our outstanding senior convertible demand promissory notes, senior subordinated convertible demand promissory notes and subordinated convertible promissory notes pursuant to a subordination agreement with our existing noteholders.

In connection with the issuance of the secured promissory notes, we also issued warrants to purchase 10,714,285 shares of our common stock. These warrants have a seven-year term and are immediately exercisable at an exercise price of $0.07 per share. These warrants also have certain "piggyback" registration rights under our third amended and restated registration rights agreement, as amended. See "Description of Capital Stock – Registration Rights" for a description of these registration rights.

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SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our common stock, and a liquid public trading market for our common stock may not develop or be sustained after this offering. If a public market does develop, future sales of significant amounts of our common stock, including shares issued upon exercise of outstanding options or warrants, 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. We have applied to list our common stock on the NASDAQ Global Market under the symbol "RIBX."

Upon the closing of the offering made hereby, we will have outstanding an aggregate of shares of common stock, assuming no exercise by the underwriters of their over-allotment option and no exercise of outstanding options and warrants. Of these shares, all of the shares of our common stock sold in this offering will be freely tradable without restriction or further registration under the Securities Act, except for any shares of our common stock 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.

The remaining shares of common stock will be "restricted securities," as that term is defined in Rule 144 under the Securities Act. These restricted securities are eligible for public sale only if they are registered under the Securities Act or if they qualify for an exemption from registration under the Securities Act. One such safe-harbor exemption is Rule 144, which is summarized below.

Subject to the lock-up agreements described below and the provisions of Rule 144 under the Securities Act, these restricted securities will be available for sale in the public market as follows:

Date Available for Sale	Shares Eligible for Sale	Comment
Date of prospectus		Shares sold in the offering and shares that can be sold under Rule 144 that are not subject to a lock-up
90 days after date of prospectus		Shares that are not subject to a lock-up and can be sold under Rule 144
180 days* after date of prospectus		Lock-up released; shares can be sold under Rule 144

* 180 days corresponds to the lock-up period described below in "—Lock-up Agreements." This lock-up period may be extended or shortened under certain circumstances as described in that section. However, Deutsche Bank Securities Inc., may in its sole discretion, at any time without prior notice, release all or any portion of the shares from the restrictions in any of these agreements.

Rule 144

Affiliate Resales of Shares

Affiliates of ours must generally comply with Rule 144 if they wish to sell in the public market any shares of our common stock, whether or not those shares are "restricted securities." "Restricted securities" are any securities acquired from us or one of our affiliates in a transaction not involving a public offering. All shares of our common stock issued prior to the

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closing of the offering made hereby, and the shares of common stock issuable upon the conversion of our convertible preferred stock and our convertible notes or upon exercise of our warrants, are considered to be restricted securities. The shares of our common stock sold in this offering are not considered to be restricted securities.

In general, subject to the lock-up agreements described below, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, a person who is an affiliate of ours, or who was an affiliate of ours at any time during the three months immediately before a sale can sell restricted shares of our common stock in compliance with the following requirements of Rule 144.

Holding period: If the shares are restricted securities, an affiliate must have beneficially owned the shares of our common stock for at least six months.

Manner of sale: An affiliate must sell its shares in "broker's transactions" or certain "riskless principal transactions" or to market makers, each within the meaning of Rule 144.

Limitation on number of shares sold: An affiliate is only allowed to sell within any three-month period an aggregate number of shares of our common stock that does not exceed the greater of:

- one percent of the number of the total number of shares of our common stock then outstanding, which will equal approximately shares immediately after this offering; and
- the average weekly trading volume in our common stock on the stock exchange where our common stock is traded during the four calendar weeks preceding either (i) to the extent that the seller is required to file a notice on Form 144 with respect to such sale, the date of filing such notice, (ii) date of receipt of the order to execute the transaction by the broker or (iii) the date of execution of the transaction with the market maker.

Current public information: An affiliate may only resell its restricted securities to the extent that adequate current public information, as defined in Rule 144, is available about us, which, in our case, means that we have been subject to the reporting requirements of Section 13 or 15(d) of the Exchange Act for a period of at least 90 days prior to the date of the sale and we have filed all reports with the SEC required by those sections during the preceding twelve months (or such shorter period that we have been subject to these filing requirements).

Notice on Form 144: If the number of shares of our common stock being sold by an affiliate under Rule 144 during any three-month period exceeds 5,000 shares or has an aggregate sale price in excess of $50,000, then the seller must file a notice on Form 144 with the SEC and the stock exchange on which our common stock is traded concurrently with either the placing of a sale order with the broker or the execution directly with a market maker.

Non-Affiliate Resales of Restricted Shares

Any person or entity who is not an affiliate of ours and who has not been an affiliate of ours at any time during the three months preceding a sale is only required to comply with Rule 144 in connection with sales of restricted shares of our common stock. Subject to the lock-up agreements described below, those persons may sell shares of our common stock that they have beneficially owned for at least one year without any restrictions under Rule 144 immediately following the effective date of the registration statement of which this prospectus is a part.

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Further, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, a person who is not an affiliate of ours at the time such person sells shares of our common stock, and has not been an affiliate of ours at any time during the three months preceding such sale, and who has beneficially owned such shares of our common stock, as applicable, for at least six months but less than a year, is entitled to sell such shares so long as there is adequate current public information, as defined in Rule 144, available about us.

Resales of restricted shares of our common stock by non-affiliates are not subject to the manner of sale, volume limitation or notice filing provisions of Rule 144, described above.

Rule 701

In general, under Rule 701, any of our employees, directors, officers, consultants or advisors who purchases shares from us in connection with a compensatory stock or option plan or other written agreement before the effective date of this offering is entitled to resell such shares 90 days after the effective date of this offering in reliance on Rule 144, without having to comply with the holding period requirements or other restrictions contained in Rule 701.

The Securities and Exchange Commission has indicated that Rule 701 will apply to typical stock options granted by an issuer before it becomes subject to the reporting requirements of the Securities Exchange Act, along with the shares acquired upon exercise of such options, including exercises after the date of this prospectus. Securities issued in reliance on Rule 701 are restricted securities and, subject to the contractual restrictions described above, beginning 90 days after the date of this prospectus, may be sold by persons other than “affiliates,” as defined in Rule 144, subject only to the manner of sale provisions of Rule 144 and by “affiliates” under Rule 144 without compliance with its one-year minimum holding period requirement.

Lock-up Agreements

Each of our officers and directors, and substantially all of our stockholders and holders of options and warrants to purchase our stock, have agreed with the underwriters, subject to certain exceptions, not to offer, sell, pledge, contract to sell (including any short sale), grant any option to purchase or otherwise dispose of any shares of our common stock (including shares of our common stock which such holder beneficially owns on the date the holder enters into the lock-up agreement, shares which may be issued upon exercise of stock options or warrants or any other security convertible into or exchangeable for common stock), or enter into any “hedging transaction” relating to our common stock for a period 180 days after the date of this prospectus, as modified as described below, except with the prior written consent of Deutsche Bank Securities Inc. on behalf of the underwriters. “Hedging transactions” include any short sale (whether or not against the box) or any purchase, sale or grant of any right (including any put or call option) with respect to any security (other than a broad-based market basket or index) that includes, relates to or derives any significant part of its value from our common stock. Our officers and directors also agreed that the lock-up will also apply to any company-directed shares, if any, of our common stock that such officer or director may purchase in this offering.

The 180-day restricted period will be automatically extended under the following circumstances:

- if, during the last 17 days of the 180-day restricted period, we release earnings results or announce material news or a material event, then the restrictions described in the preceding paragraph will continue to apply until the expiration of the 18-day period beginning on the date of the release of the earnings results or the announcement of the material news or material event, as applicable; or

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- if, prior to the expiration of the 180-day restricted period, we announce that we will release earnings results during the 16-day period following the last day of the 180-day restricted period, then the restrictions described in the preceding paragraph will continue to apply until the expiration of the 18-day period beginning on the date of the release of the earnings results or the announcement of the material news or material event, as applicable.

Deutsche Bank Securities Inc. currently does not anticipate shortening or waiving any of the lock-up agreements and does not have any pre-established conditions for such modifications or waivers. Deutsche Bank Securities Inc. may, however, release for sale in the public market all or any portion of the shares subject to the lock-up agreement.

Stock Options

As of March 31, 2012, we had outstanding options to purchase 22,019,572 shares of our common stock at a weighted-average exercise price of $0.11 per share, of which options to purchase 14,478,662 were exercisable as of March 31, 2012. Following this offering, we intend to file a registration statement on Form S-8 under the Securities Act covering all shares of common stock subject to outstanding options or issuable pursuant to our 2001 stock option plan and 2011 equity incentive plan. See “Executive Compensation—2001 Stock Option and Incentive Plan” and “Executive Compensation—2011 Equity Incentive Plan” for additional information regarding these plans.

Subject to Rule 144 volume limitations applicable to affiliates, shares registered under any registration statements will be available for sale in the open market, except to the extent that the shares are subject to vesting restrictions with us or the contractual restrictions described below.

Warrants

As of March 31, 2012, we had outstanding warrants to purchase an aggregate of 45,698,760 shares of our common stock and 969,462 shares of our convertible preferred stock (which shall be exercisable for an equivalent number of shares of common stock upon consummation of the offering made hereby) at a weighted-average exercise price of $0.15 per share. Any shares purchased pursuant to these warrants will be “restricted shares” and may be sold in the public market only if they are registered under the Securities Act or qualify for an exemption from such registration.

Registration Rights

Upon expiration of the lock-up period described above in “—Lock-up Agreements,” the holders of shares of common stock and shares of common stock issuable pursuant to the exercise of warrants, or their transferees, will be entitled to various rights with respect to the registration of these shares under the Securities Act. See “Description of Capital Stock — Registration Rights.” Registration of these shares under the Securities Act would result in these shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of the registration, except for shares held by affiliates.

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MATERIAL U.S. FEDERAL TAX CONSIDERATIONS FOR NON-U.S. HOLDERS

The following is a general discussion of material U.S. federal income and estate tax considerations relating to ownership and disposition of our common stock by a non-U.S. holder. For purposes of this discussion, the term "non-U.S. holder" means a beneficial owner of our common stock that is not, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, or other entity treated as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States or of any political subdivision of the United States;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust, if a U.S. court is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have authority to control all substantial decisions of the trust or if the trust has a valid election to be treated as a U.S. person under applicable U.S. Treasury Regulations.

An individual may be treated as a resident instead of a nonresident of the United States in any calendar year for U.S. federal income tax purposes if the individual was present in the United States for at least 31 days in that calendar year and for an aggregate of at least 183 days during the three-year period ending with the current calendar year. For purposes of this calculation, all of the days present in the current year, one-third of the days present in the immediately preceding year and one-sixth of the days present in the second preceding year are counted. Residents are taxed for U.S. federal income tax purposes as if they were U.S. citizens.

This discussion is based on current provisions of 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 and 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. In addition, the Internal Revenue Service, or the IRS, could challenge one or more of the tax consequences described in this prospectus.

We assume in this discussion that each 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 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 state, local or non-U.S. taxes, or U.S. federal taxes other than income and estate 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;

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- 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 their common stock through partnerships or other entities which are transparent for U.S. federal income tax purposes. A partner in a partnership or other transparent entity that will hold our common stock should consult his, her or its own tax advisor regarding the tax consequences of the ownership and disposition of our common stock through a partnership or other transparent entity, as applicable.

Prospective investors should consult their own tax advisors regarding the U.S. federal, state, local and non-U.S. income and other tax considerations of acquiring, holding and disposing of our common stock.

Dividends

If we pay distributions on our common stock, those distributions 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 under the heading "Gain on Disposition of Common Stock."

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.

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. To obtain this exemption, a non-US holder must provide us with a properly executed original and unexpired IRS Form W-8ECI properly certifying such exemption. However, such U.S. effectively connected income, net of specified deductions and credits, is taxed at the same graduated U.S. federal income tax rates applicable to U.S. 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 own tax advisors regarding their entitlement to benefits under a relevant income tax treaty.

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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 an appropriate claim with the IRS.

Gain on Disposition of Common Stock

A non-U.S. holder generally will not be subject to U.S. federal income tax on gain recognized on a disposition of our common stock unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business in the United States, and, if an applicable income tax treaty so provides, the gain is attributable to a permanent establishment maintained by the non-U.S. holder in the United States; in these cases, the non-U.S. holder will be taxed on a net income basis at the regular graduated rates and in the manner applicable to U.S. persons, and, if the non-U.S. holder is a foreign corporation, an additional branch profits tax at a rate of 30%, or a lower rate as may be specified by an applicable income tax treaty, may also apply;
- the non-U.S. holder is an individual present in the United States for 183 days or more in the taxable year of the 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) on the net gain derived from the disposition; or
- we are or have been, at any time during the five-year period preceding such 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 held no more than five percent of our outstanding common stock, directly or indirectly, during the shorter of the five-year period ending on the date of the disposition or the period that the non-U.S. holder held our common stock. Generally, a corporation is a "U.S. real property holding corporation" 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. We believe that we are not currently, and we do not anticipate becoming, a "U.S. real property holding corporation" for U.S. federal income tax purposes.

Information Reporting and Backup Withholding Tax

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 U.S. person (as defined in the Code) in order to avoid backup withholding at the applicable rate, currently 28% through December 31, 2012, and thereafter set to increase to 31%, with respect to dividends on our common stock. Generally, a holder will comply with such procedures if it provides a properly executed IRS Form W-8BEN or otherwise meets documentary evidence requirements for establishing that it is a non-U.S. holder, or otherwise establishes an exemption.

Information reporting and backup withholding generally will 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

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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.

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.

Foreign Account Tax Compliance Act

The recently enacted Foreign Account Tax Compliance Act ("FATCA") will impose a 30% withholding tax on any "withholdable payment" to (i) a "foreign financial institution," unless such institution enters into an agreement with the U.S. government to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which would include certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with United States owners) or (ii) a foreign entity that is not a financial institution, unless such entity provides the withholding agent with a certification identifying the substantial U.S. owners of the entity, which generally includes any U.S. person who directly or indirectly owns more than 10% of the entity. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes.

"Withholdable payments" will include U.S.-source payments otherwise subject to nonresident withholding tax, and also include the entire gross proceeds from the sale of any equity or debt instruments of U.S. issuers (in either case to exclude payments made on "obligations" that were outstanding on March 18, 2012). The withholding tax will apply regardless of whether the payment would otherwise be exempt from U.S. nonresident withholding tax (e.g., under the portfolio interest exemption or as capital gain). The IRS is authorized to provide rules for implementing the FATCA withholding regime with the existing nonresident withholding tax rules.

Transitional IRS guidance indicates that, under future regulations, this withholding will apply to U.S.-source payments otherwise subject to nonresident withholding tax made on or after January 1, 2014 and to the payment of gross proceeds from the sale of any equity or debt instruments of U.S. issuers made on or after January 1, 2015.

Federal Estate Tax

Common stock owned or treated as owned by an individual who is a non-U.S. holder (as specially defined for U.S. federal estate tax purposes) at the time of death will be included in the individual's gross estate for U.S. federal estate tax purposes and, therefore, may be subject to U.S. federal estate tax, unless an applicable estate tax or other treaty provides otherwise.

The preceding discussion of material U.S. federal tax considerations is for general information only. It is not tax advice. Prospective investors should consult their own tax advisors regarding the particular U.S. federal, state, local and non- U.S. tax consequences of purchasing, holding and disposing of our common stock, including the consequences of any proposed changes in applicable laws.

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UNDERWRITING

Subject to the terms and conditions of the underwriting agreement, the underwriters named below, through their representative Deutsche Bank Securities Inc., have severally agreed to purchase from us the following respective number of shares of common stock at a public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus:

Underwriters	Number of Shares
Deutsche Bank Securities Inc.	
William Blair & Company, L.L.C.	
Lazard Capital Markets LLC	
Needham & Company, LLC	
Total	

The underwriting agreement provides that the obligations of the several underwriters to purchase the shares of common stock offered hereby are subject to certain conditions precedent and that the underwriters will purchase all of the shares of common stock offered by this prospectus, other than those covered by the over-allotment option described below, if any of these shares are purchased.

We have been advised by the representative of the underwriters that the underwriters propose to offer the shares of common stock to the public at the public offering price set forth on the cover of this prospectus and to dealers at a price that represents a concession not in excess of $ per share under the public offering price. The underwriters may allow, and these dealers may re-allow, a concession of not more than $ per share to other dealers. After the initial public offering, the representative of the underwriters may change the offering price and other selling terms.

We have granted to the underwriters an option, exercisable not later than 30 days after the date of this prospectus, to purchase up to additional shares of common stock at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus. The underwriters may exercise this option only to cover over-allotments made in connection with the sale of the common stock offered by this prospectus. To the extent that the underwriters exercise this option, each of the underwriters will become obligated, subject to conditions, to purchase approximately the same percentage of these additional shares of common stock as the number of shares of common stock to be purchased by it in the above table bears to the total number of shares of common stock offered by this prospectus. We will be obligated, pursuant to the option, to sell these additional shares of common stock to the underwriters to the extent the option is exercised. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriting discounts and commissions per share are equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting discounts and commissions are % of the initial public offering price. We have agreed to pay the underwriters the following discounts and commissions, assuming either no exercise or full exercise by the underwriters of the underwriters' over-allotment option:

		Total Fees	
	Fee per share	Without Exercise of Over-Allotment Option	With Full Exercise of Over-Allotment Option
Discounts and commissions paid by us	$	$	$

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In addition, we estimate that our share of the total expenses of this offering, excluding underwriting discounts and commissions, will be approximately $. Lazard Freres & Co. LLC referred this transaction to Lazard Capital Markets LLC and will receive a referral fee from Lazard Capital Markets LLC in connection therewith.

We have agreed to indemnify the underwriters against some specified types of liabilities, including liabilities under the Securities Act, and to contribute to payments the underwriters may be required to make in respect of any of these liabilities.

Each of our officers and directors, and substantially all of our stockholders and holders of options and warrants to purchase our stock, have agreed, subject to certain exceptions, not to offer, sell, pledge, contract to sell (including any short sale), grant any option to purchase or otherwise dispose of, or enter into any transaction that is designed to, or could be expected to, result in the disposition of any shares of our common stock or other securities convertible into or exchangeable or exercisable for shares of our common stock or derivatives of our common stock owned by these persons prior to this offering or common stock issuable upon exercise of options or warrants held by these persons for a period of 180 days after the effective date of the registration statement of which this prospectus is a part without the prior written consent of Deutsche Bank Securities Inc. The 180-day period described above will automatically be extended if: (1) during the last 17 days of the 180-day period, we issue an earnings release or announce material news or a material event; or (2) prior to the expiration of the 180-day period, we announce that we will release earnings results during the 16-day period following the last day of the 180-day period, in which case the restrictions described above will continue to apply until the expiration of the 18-day period beginning on the date of the issuance of the earnings release or the announcement of the material news or material event, unless the representative of the underwriters waives, in writing, such extension. This consent may be given at any time without public notice. We have entered into a similar agreement with the representative of the underwriters.

There are no agreements between the representative and any of our stockholders or affiliates releasing them from these lock-up agreements prior to the expiration of the 180-day period.

The representative of the underwriters has advised us that the underwriters do not intend to confirm sales to any account over which they exercise discretionary authority.

In connection with the offering, the underwriters may purchase and sell shares of our common stock in the open market. These transactions may include short sales, purchases to cover positions created by short sales and stabilizing transactions.

Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering. Covered short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares of common stock from us in the offering. The underwriters may close out any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the over-allotment option.

Naked short sales are any sales in excess of the over-allotment option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if underwriters are concerned that there may be downward pressure on the price of the shares in the open market prior to the completion of the offering.

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Stabilizing transactions consist of various bids for or purchases of our common stock made by the underwriters in the open market prior to the completion of the offering.

The underwriters may impose a penalty bid. This occurs when a particular underwriter repays to the other underwriters a portion of the underwriting discount received by it because the representative of the underwriters has repurchased shares sold by or for the account of that underwriter in stabilizing or short covering transactions.

Purchases to cover a short position and stabilizing transactions may have the effect of preventing or slowing a decline in the market price of our common stock. Additionally, these purchases, along with the imposition of the penalty bid, may stabilize, maintain or otherwise affect the market price of our common stock. As a result, the price of our 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, in the over-the-counter market or otherwise.

A prospectus in electronic format is being made available on Internet web sites maintained by one or more of the lead underwriters of this offering and may be made available on web sites maintained by other underwriters. Other than the prospectus in electronic format, the information on any underwriter's web site and any information contained in any other web site maintained by an underwriter is not part of the prospectus or the registration statement of which the prospectus forms a part.

Pricing of this Offering

Prior to this offering, there has been no public market for our common stock. Consequently, the initial public offering price of our common stock will be determined by negotiation among us and the representative of the underwriters. Among the primary factors that will be considered in determining the public offering price are:

- prevailing market conditions;
- our results of operations in recent periods;
- the present stage of our development;
- the market capitalizations and stages of development of other companies that we and the representative of the underwriters believe to be comparable to our business; and
- estimates of our business potential.

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), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the Relevant Implementation Date), an offer of the shares to the public may not be made in that Relevant Member State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the Prospectus Directive, except that an offer to the public in that Relevant Member State of any shares may be made at any time under the following exemptions under the Prospectus Directive if they have been implemented in the Relevant Member State:

- to legal entities which are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;

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- to any legal entity which has two or more of (i) an average of at least 250 employees during the last financial year; (ii) a total balance sheet of more than €43,000,000 and (iii) an annual net turnover of more than €50,000,000, as shown in its last annual or consolidated accounts;
- to fewer than 100 natural or legal persons (other than qualified investors as defined in the Prospectus Directive) subject to obtaining the prior consent of the representative for any such offer; or
- in any other circumstances falling within Article 3 of the Prospectus Directive;

provided that no such offer of shares shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer of shares to the public" in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State and the expression Prospectus Directive means Directive 2003/71/EC and includes any relevant implementing measure in each Relevant Member State.

United Kingdom

Each underwriter has represented and agreed that (i) it has not offered or sold and, prior to the expiration of the period of six months from the closing date of this offering, will not offer or sell any shares of our common stock to persons in the United Kingdom except to persons whose ordinary activities involve them in acquiring, holding, managing or disposing of investments (as principal or agent) for the purposes of their businesses or otherwise in circumstances which have not resulted and will not result in an offer to the public in the United Kingdom within the meaning of the Public Offers of Securities Regulations 1995; (ii) it has complied with and will comply with all applicable provisions of the Financial Services Act 1986 with respect to anything done by it in relation to the shares of our common stock in, from or otherwise involving the United Kingdom; and (iii) it has only issued or passed on and will only issue or pass on in the United Kingdom, any document received by it in connection with the issue of the shares of our common stock to a person who is of a kind described in Article 11(3) of the Financial Services Act 1986 (Investment Advertisements) (Exemptions) Order 1996 or is a person to whom such document may otherwise lawfully be issued or passed on.

Relationships

Some of the underwriters or their affiliates have provided investment banking services to us in the past and may do so in the future. They receive customary fees and commissions for these services.

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LEGAL MATTERS

The validity of the issuance of the common stock offered by us in this offering will be passed upon for us by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts and for the underwriters by Goodwin Procter LLP, New York, New York.

EXPERTS

The financial statements as of December 31, 2010 and December 31, 2011 and for each of the three years in the period ended December 31, 2011 included in this prospectus have been so included in reliance on the report (which contains an explanatory paragraph relating to the Company's ability to continue as a going concern as described in Note 1 to the financial statements) of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act, with respect to the common stock offered by this prospectus. This prospectus, which is part of the registration statement, omits certain information, exhibits, schedules and undertakings set forth in the registration statement. For further information pertaining to us and our common stock, reference is made to the registration statement and the exhibits and schedules to the registration statement. Statements contained in this prospectus as to the contents or provisions of any documents referred to in this prospectus are not necessarily complete, and in each instance where a copy of the document has been filed as an exhibit to the registration statement, reference is made to the exhibit for a more complete description of the matters involved.

You may read and copy all or any portion of the registration statement without charge at the public reference room of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Copies of the registration statement may be obtained from the SEC at prescribed rates from the public reference room of the SEC at such address. You may obtain information regarding the operation of the public reference room by calling 1-800-SEC-0330. In addition, registration statements and certain other filings made with the SEC electronically are publicly available through the SEC's web site at http://www.sec.gov. The registration statement, including all exhibits and amendments to the registration statement, has been filed electronically with the SEC.

Upon completion of this offering, we will become subject to the information and periodic reporting requirements of the Securities Exchange Act and, accordingly, will file annual reports containing financial statements audited by an independent public accounting firm, quarterly reports containing unaudited financial data, current reports, proxy statements and other information with the SEC. You will be able to inspect and copy such periodic reports, proxy statements and other information at the SEC's public reference room, and the web site of the SEC referred to above.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Rib-X Pharmaceuticals, Inc.

In our opinion, the accompanying balance sheets and the related statements of operations, of convertible preferred stock and stockholders' equity (deficit) and of cash flows present fairly, in all material respects, the financial position of Rib-X Pharmaceuticals, Inc. at December 31, 2011 and 2010, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2011 in conformity with accounting principles generally accepted in the United States of America. 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 of these statements 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. An audit 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.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has suffered recurring losses from operations, has a net capital deficiency and has significant debt outstanding, all of which raises 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 financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ PricewaterhouseCoopers LLP

Hartford, Connecticut
March 2, 2012

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RIB-X PHARMACEUTICALS, INC.

BALANCE SHEETS

(In thousands, except share and per share amounts)

	December 31,		Pro Forma Stockholders' Equity at December 31,
	2010	2011	2011
			(Unaudited)
ASSETS			
Current assets:			
Cash and cash equivalents	$ 1,408	$ 8,019	
Tax credit receivable	118	250	
Other current assets	1,086	2,789	
Total current assets	2,612	11,058	
Fixed assets, net	980	582	
Other assets	299	50	
Total assets	$ 3,891	$ 11,690	
LIABILITIES, CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)			
Current liabilities:			
Convertible notes payable to stockholders	$ —	$ 62,143	$ —
Accrued interest on convertible notes payable to stockholders	—	14,182	—
Accounts payable	1,216	4,978	
Accrued expenses	1,921	2,671	
Deferred revenue	—	6,298	
Preferred stock warrants	1	1	—
Common stock warrants	30	66	—
Convertible notes payable to stockholders put rights	11,044	28,223	—
Total current liabilities	14,212	118,562	
Convertible notes payable to stockholders, net of current portion	47,092	—	—
Accrued interest on convertible notes payable to stockholders, net of current portion	7,067	—	—
Deferred revenue, net of current portion	—	9,997	
Total liabilities	68,371	128,559	
Commitments and contingencies (Note 14) Convertible preferred stock, $0.001 par value; 477,908,245 and 478,329,525 shares authorized at December 31, 2010 and 2011, respectively:			
Series C—81,192,437 shares issued and outstanding at December 31, 2010 and 2011, respectively (liquidation preference of $71,451 and $77,167, respectively); no shares issued or outstanding pro forma (unaudited)	49,911	49,911	—
Series B—102,601,391 shares issued and outstanding at December 31, 2010 and 2011, respectively (liquidation preference of $115,395 and $124,627, respectively); no shares issued or outstanding pro forma (unaudited)	63,226	63,226	—
Series A—16,006,079 shares issued and outstanding at December 31, 2010 and 2011, respectively (liquidation preference of $19,897 and $21,489, respectively); no shares issued or outstanding pro forma (unaudited)	9,291	9,291	—
Stockholders' equity (deficit):			
Common stock, $0.001 par value; 500,000,000 and 650,000,000 shares authorized at December 31, 2010 and 2011, respectively; 10,252,529 shares issued and outstanding at December 31, 2010 and 2011, respectively, and [ ] (unaudited) shares outstanding pro forma	10	10	
Additional paid-in capital	3,885	4,957	
Accumulated deficit	(190,803)	(244,264)	
Total stockholders' equity (deficit)	(186,908)	(239,297)	
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	$ 3,891	$ 11,690	

The accompanying notes are an integral part of these financial statements.

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RIB-X PHARMACEUTICALS, INC.

STATEMENTS OF OPERATIONS

(In thousands, except per share amounts)

	Years Ended December 31,		
	2009	2010	2011
Contract revenues	$ —	$ —	$ 2,705
Operating expenses:			
Research and development	17,592	12,422	31,206
General and administrative	3,888	5,152	5,723
Total operating expenses	21,480	17,574	36,929
Loss from operations	(21,480)	(17,574)	(34,224)
Other income (expense):			
Interest income	68	11	14
Interest expense	(6,952)	(10,290)	(19,497)
Other income	160	1,098	246
Total other income (expense)	(6,724)	(9,181)	(19,237)
Net loss	(28,204)	(26,755)	(53,461)
Convertible preferred stock dividends	(14,180)	(15,314)	(16,540)
Net loss attributable to common stockholders	$(42,384)	$(42,069)	$(70,001)
Net loss per share, basic and diluted	$ (4.18)	$ (4.10)	$ (6.83)
Weighted average shares outstanding, basic and diluted	10,140	10,249	10,253
Pro forma net loss per share, basic and diluted (unaudited)			
Weighted average shares used in computing pro forma net loss per share, basic and diluted (unaudited)			

The accompanying notes are an integral part of these financial statements.

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RIB-X PHARMACEUTICALS, INC.
STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)
(In thousands, except share amounts)

	Series C Convertible Preferred Stock		Series B Convertible Preferred Stock		Series A Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount			
Balance at December 31, 2008	81,192,437	$49,911	102,601,391	$63,226	16,006,079	$ 9,291	10,070,743	$ 10	$ 2,535	$(135,844)	$ (133,299)
Exercise of stock options	—	—	—	—	—	—	176,786	—	35	—	35
Non-employee stock-based compensation	—	—	—	—	—	—	—	—	29	—	29
Employee stock-based compensation	—	—	—	—	—	—	—	—	921	—	921
Expiration of preferred stock warrants	—	—	—	—	—	—	—	—	42	—	42
Net loss	—	—	—	—	—	—	—	—	—	(28,204)	(28,204)
Balance at December 31, 2009	81,192,437	49,911	102,601,391	63,226	16,006,079	9,291	10,247,529	10	3,562	(164,048)	(160,476)
Exercise of stock options	—	—	—	—	—	—	5,000	—	1	—	1
Non-employee stock-based compensation	—	—	—	—	—	—	—	—	17	—	17
Employee stock-based compensation	—	—	—	—	—	—	—	—	305	—	305
Net loss	—	—	—	—	—	—	—	—	—	(26,755)	(26,755)
Balance at December 31, 2010	81,192,437	49,911	102,601,391	63,226	16,006,079	9,291	10,252,529	10	3,885	(190,803)	(186,908)
Employee stock-based compensation	—	—	—	—	—	—	—	—	257	—	257
Change in the fair value of embedded conversion option	—	—	—	—	—	—	—	—	815	—	815
Net loss	—	—	—	—	—	—	—	—	—	(53,461)	(53,461)
Balance at December 31, 2011	81,192,437	$49,911	102,601,391	$63,226	16,006,079	$ 9,291	10,252,529	$ 10	$ 4,957	$(244,264)	$ (239,297)

The accompanying notes are an integral part of these financial statements.

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RIB-X PHARMACEUTICALS, INC.

STATEMENTS OF CASH FLOWS

(In thousands)

	Years Ended December 31,		
	2009	2010	2011
Cash flows from operating activities			
Net loss	$(28,204)	$(26,755)	$(53,461)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	589	569	563
Non-cash interest expense	3,306	5,553	12,382
Non-cash stock-based compensation expense	950	322	257
Changes in operating assets and liabilities:			
Tax credit receivable	(5)	32	(132)
Other current assets	109	(564)	42
Other assets	—	(50)	199
Accrued interest on convertible notes payable to stockholders	2,462	4,476	7,115
Accounts payable	(2,115)	(51)	2,245
Accrued expenses	(1,305)	(278)	818
Deferred revenue	—	—	16,295
Net cash used in operating activities	(24,213)	(16,746)	(13,677)
Cash flows from investing activities			
Purchases of marketable securities	(12,103)	—	—
Proceeds from maturities of marketable securities	11,353	750	—
Purchases of fixed assets	—	(124)	(155)
Net cash provided by (used in) investing activities	(750)	626	(155)
Cash flows from financing activities			
Proceeds from exercise of stock options	35	1	—
Repayments of notes payable	(7,919)	(7,213)	—
Proceeds from issuance of convertible notes payable and related warrants, net of debt issuance costs	34,929	14,217	20,680
Deferred IPO costs	—	—	(237)
Net cash provided by financing activities	27,045	7,005	20,443
Net increase (decrease) in cash and cash equivalents	2,082	(9,115)	6,611
Cash and cash equivalents, beginning of period	8,441	10,523	1,408
Cash and cash equivalents, end of period	$ 10,523	$ 1,408	$ 8,019
Supplemental disclosure of cash flow information			
Cash paid for interest	$ 1,119	$ 326	$ —
Cash received from exchange of state tax credits	$ 154	$ 152	$ 114
Supplemental disclosure of non-cash information			
Expiration of preferred stock warrants	$ (42)	$ —	$ —
Accrued purchases of fixed assets	$ —	$ —	$ 10
Accrued debt issuance costs	$ 296	$ 183	$ 8
Accrued IPO costs	$ —	$ —	$ 1,614
Issuance of common stock warrants	$ 1,518	$ 313	$ 41
Issuance of convertible notes payable to stockholders put rights	$ 6,705	$ 6,048	$ 12,782

The accompanying notes are an integral part of these financial statements.

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RIB-X PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS
(In thousands, except share and per share amounts)

1. Nature of the Business

Rib-X Pharmaceuticals, Inc. (the "Company"), a Delaware corporation, was formed in October 2000 under the name of Rib-X Designs, Inc. and changed its name to Rib-X Pharmaceuticals, Inc. in December 2000. The Company is a biopharmaceutical company developing antibiotics to provide superior coverage, safety and convenience for the treatment of serious and life-threatening infections. The Company's proprietary drug discovery platform, which is based on Nobel Prize-winning science, provides the Company an atomic-level, three-dimensional understanding of interactions between our drug candidates and their bacterial targets and enables the Company to systematically engineer antibiotics with enhanced characteristics.

The Company was in the development stage at December 31, 2010, as defined in Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 915, "Development Stage Entities." During the year ended December 31, 2011, the Company exited the development stage with the signing of its first significant collaboration with Sanofi, S.A. ("Sanofi") (Note 3) from which it received its first significant revenue from principal operations, reflective that it is no longer in the development stage.

The Company is subject to risks similar to other companies in the industry, including, but not limited to, the uncertainty of drug discovery and development, the need for additional funding, dependence on key personnel, risks related to biotechnology, uncertainty of regulatory approval and protection of proprietary technology. There can be no assurance that the Company's research and development efforts will be successful, that adequate patent protection for the Company's technology will be obtained, that any products developed will obtain the necessary government regulatory approval or that any approved products will be commercially viable. In addition, the Company operates in an environment of rapid change in technology, with substantial competition from pharmaceutical and biotechnology companies and is dependent upon the services of its employees and consultants. The financial statements do not include any adjustments that might result from the outcome of these uncertainties.

The Company has incurred net losses from operations since its inception and had an accumulated deficit of $244,264 as of December 31, 2011. In addition, at December 31, 2011, the Company had $71,033 of outstanding principal balance of convertible notes payable to stockholders and $14,182 of accrued interest on convertible notes payable to stockholders. The Company expects to incur substantial expenditures in the foreseeable future for the research, development and commercialization of its potential products. Recurring losses from operations, accumulated deficit, negative working capital, significant debt outstanding (Note 6) and requirements for additional funding in the next year raise substantial doubt about the Company's ability to continue as a going concern. The Company expects to continue to incur operating losses for the next several years as it works to discover, develop and commercialize its product candidates. As a result, it will seek to fund its operations through public or private equity offerings, debt financings or corporate collaborations and licensing arrangements. However, there can be no assurance that the Company will be able to raise the required financing on favorable terms, in sufficient amounts or at all. The accompanying financial statements have been prepared on a going concern basis and do not include any adjustments that might result from the outcome of this uncertainty.

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2. Summary of Significant Accounting Policies

Basis of Presentation and Use of Estimates

The Company's financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP"). The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Unaudited Pro Forma Information

In November 2011, the Company's board of directors authorized the management of the Company to file a registration statement with the Securities and Exchange Commission ("SEC") for the Company to sell shares of its common stock to the public. If the contemplated offering is completed pursuant to the criteria set forth in the Company's Amended and Restated Certificate of Incorporation, then: all of the convertible preferred stock outstanding (Note 9), including the cumulative dividends payable to the convertible preferred stockholders, will automatically convert into shares of common stock; the outstanding amounts of the convertible notes payable to stockholders (Note 6), including accrued interest, will automatically convert into shares of common stock; and the preferred stock warrants (Note 5) will automatically convert to common stock warrants. The unaudited pro forma balance sheet information at December 31, 2011 gives effect to the automatic conversion of all convertible notes payable to stockholders, including accrued interest, and all outstanding shares of the convertible preferred stock, including accrued but unpaid preferred dividends, into common stock, the settlement of the put rights upon the conversion of the convertible notes payable to stockholders, the elimination of the common stock warrant exercise price protection term and the conversion of the preferred stock warrants to warrants to purchase shares of common stock.

Segments

The Company has determined that it operates in one segment. The Company is a biopharmaceutical company focused on discovering, developing and commercializing antibiotics. All of the Company's assets are located in the United States.

Cash and Cash Equivalents

The Company considers all highly liquid investments with original maturities of three months or less to be cash equivalents. The Company invests excess cash primarily in a money market account.

Concentration of Credit Risk

Concentration of credit risk exists with respect to cash and cash equivalents. The Company maintains its cash and cash equivalents with federally insured financial institutions, and at times the amounts may exceed the federally insured deposit limits. To date, the Company has not experienced any losses on its deposits of cash and cash equivalents. Management believes that the Company is not exposed to significant credit risk due to the financial position of the depository institutions in which deposits are held.

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Fair Value of Financial Instruments

The carrying amounts of the Company's financial instruments, which include cash and cash equivalents, marketable securities, tax credit receivables, accounts payable and accrued expenses, approximated their fair value at December 31, 2010 and 2011 due to their short maturities. See Note 8 for additional details on other financial assets and liabilities.

Debt Issuance Costs, net

Debt issuance costs, net represent legal and other direct costs related to the Company's convertible notes payable to stockholders (Note 6). These costs were recorded as debt issuance costs on the balance sheets at the time they were incurred, and are being amortized to interest expense through the earliest date at which the Company can be required to repay the notes.

Deferred Initial Public Offering Costs

Deferred initial public offering ("IPO") costs represent legal and other direct costs related to the Company's efforts to raise capital through a public sale of the Company's common stock. There were no IPO costs incurred prior to 2011. Future costs related to the Company's IPO activities will be deferred until the completion of the IPO, at which time they will be reclassified to additional paid-in capital as a reduction of the IPO proceeds. If the Company terminates its plan for an IPO, any costs deferred will be expensed immediately.

Fixed Assets, net

Fixed assets, net are recorded at cost less accumulated depreciation and are depreciated using the straight-line method over their estimated useful lives (Note 4). Leasehold improvements are amortized over the shorter of their useful lives or the remaining life of the lease. Major improvements are capitalized, while repair and maintenance costs, which do not improve or extend the useful lives of the respective assets, are expensed as incurred. Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the balance sheets and any resulting gain or loss is credited or charged to income.

Impairment of Long-Lived Assets

Long-lived assets consist of fixed assets. The Company will record impairment losses on long-lived assets used in operations when events and circumstances indicate that the carrying amount of an asset or group of assets may not be fully recoverable. The Company has not recorded any impairment charges in the years ended December 31, 2009, 2010 or 2011.

Revenue Recognition

During 2011, the Company entered into its first collaboration and license agreement for the research and development of novel classes of antibiotics under the Company's RX-04 program (Note 3). The terms of the agreement include non-refundable upfront fees, and the potential for research, development, regulatory and commercial milestone fees, as well as royalties on product sales of licensed products, if and when such product sales occur.

The Company recognizes revenue when all of the following criteria are met: persuasive evidence of an arrangement exists, services are performed or products have been delivered, the fee is fixed and determinable and collection is reasonably assured. Determinations of whether

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persuasive evidence of an arrangement exists and whether delivery has occurred or services have been rendered are based on management's judgments regarding the fixed nature of the fees charged for deliverables and the collectability of those fees. Should changes in conditions cause management to determine that these criteria are not met for any new or modified transactions, revenue recognized could be adversely affected.

The Company recognizes revenue related to collaboration and license arrangements in accordance with the provisions of ASC Topic 605-25, "Revenue Recognition—Multiple-Element Arrangements" ("ASC Topic 605-25"). Additionally, the Company adopted, effective January 1, 2011, Accounting Standards Update ("ASU") No. 2009-13, "Multiple Deliverable Revenue Arrangements" ("ASU 2009-13"), which amended ASC Topic 605-25 and:

- provided guidance on how deliverables in an arrangement should be separated and how the arrangement consideration should be allocated to the separate units of accounting;
- required an entity to determine the selling price of a separate deliverable using a hierarchy of (i) vendor-specific objective evidence ("VSOE"), (ii) third-party evidence ("TPE") or (iii) best estimate of selling price ("BESP"); and
- required the allocation of the arrangement consideration, at the inception of the arrangement, to the separate units of accounting based on relative fair value.

The adoption of this standard did not impact the Company's financial position or results of operations for any prior period as the Company did not have any contract revenue prior to January 1, 2011.

The Company evaluates all deliverables within an arrangement to determine whether or not they provide value on a stand-alone basis. Based on this evaluation, the deliverables are separated into units of accounting. The arrangement consideration that is fixed and determinable at the inception of the arrangement is allocated to the separate units of accounting based on relative fair value. The Company may exercise significant judgment in determining whether a deliverable is a separate unit of accounting, as well as in estimating the selling prices of such units of accounting.

To determine the selling price of a separate deliverable, the Company uses the hierarchy as prescribed in ASC Topic 605-25 based on VSOE, TPE or BESP. VSOE is based on the price charged when the element is sold separately and is the price actually charged for that deliverable, TPE is determined based on third party evidence for a similar deliverable when sold separately and BESP is the price at which the Company would transact a sale if the elements of collaboration and license arrangements were sold on a stand-alone basis. The Company expects that establishing VSOE or TPE for the deliverables within collaboration and license arrangements will be difficult as the Company does not have a history of entering into such arrangements or selling the individual deliverables within such arrangements separately. In addition, there is significant differentiation in collaboration and license arrangements, which indicates that comparable third party pricing may not be available. The Company expects the selling price for the deliverables within collaboration and license arrangements to be determined using BESP. The process for determining BESP involves significant judgment on the part of the Company and includes consideration of multiple factors such as estimated direct expenses and other costs, and available data.

For each unit of accounting identified within an arrangement, the Company determines the period over which the performance obligation occurs. Revenue is then recognized using either a proportional performance or straight-line method. The Company recognizes revenue using the

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proportional performance method when the level of effort to complete its performance obligations under an arrangement can be reasonably estimated and such performance obligations are provided on a best-efforts basis. Direct labor hours or full time equivalents are typically used as the measurement of performance.

Effective January 1, 2011, the Company adopted ASU No. 2010-17, "Milestone Method of Revenue Recognition" ("ASU 2010-17"), which provides guidance on revenue recognition using the milestone method. Under the milestone method, a payment that is contingent upon the achievement of a substantive milestone is recognized in its entirety in the period in which the milestone is achieved. A milestone is an event (i) that can be achieved based in whole or in part on either the Company's performance or on the occurrence of a specific outcome resulting from the Company's performance, (ii) for which there is substantive uncertainty at the date the arrangement is entered into that the event will be achieved and (iii) that would result in additional payments being due to the Company. The determination that a milestone is substantive is subject to considerable judgment. Milestones are considered substantive when the consideration earned from the achievement of the milestone is (i) commensurate with either the Company's performance to achieve the milestone or the enhancement of value of the item delivered as a result of a specific outcome resulting from the Company's performance to achieve the milestone, (ii) relates solely to past performance and (iii) is reasonable relative to all deliverables and payment terms in the arrangement. The adoption of this standard did not impact the Company's financial position or results of operations for any prior period as the Company did not receive any milestone payments prior to January 1, 2011.

Royalty revenues will be recognized based on contract terms when reported sales are reliably measurable and collectability is reasonably assured. To date, none of the Company's products have been approved, and therefore the Company has not earned any royalty revenue from product sales.

Research and Development Costs

Research and development expenses include primarily: external discovery and development costs incurred through agreements with contract research organizations, contract manufacturers and medicinal chemistry service providers, and milestone and license payments made under licensing arrangements; scientific salaries, fringes and stock-based compensation; laboratory supplies; associated rent and other facilities costs; professional and consulting fees; and travel and other costs. Research and development costs are expensed as incurred.

Patent Costs

All patent related costs incurred in connection with filing and prosecuting patent applications are expensed to general and administrative expenses as incurred, as recoverability of such expenditures is uncertain.

Stock-Based Compensation

The Company accounts for stock-based compensation in accordance with ASC Topics 505, "Equity," and 718, "Compensation—Stock Compensation."

The Company has two stock-based compensation plans known as the 2001 Stock Option and Incentive Plan ("2001 Stock Plan") and the 2011 Equity Incentive Plan. Under the plans, restricted stock, stock options and other stock-related awards may be granted to the Company's directors, officers, employees and consultants. Stock options are granted at exercise prices not less than the fair market value of the Company's common stock at the dates of grant.

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The Company utilizes the Black-Scholes option-pricing model for determining the estimated fair value of awards. Key inputs and assumptions include the expected term of the option, stock price volatility, risk-free interest rate, dividend yield, stock price and exercise price. Many of the assumptions require significant judgment and any changes could have a material impact in the determination of stock-based compensation expense. The Company estimates forfeitures when recognizing compensation expense and adjusts forfeiture estimates over the vesting period based on actual or anticipated forfeitures.

The Company recognizes stock-based compensation expense on a straight-line basis over the requisite service period of the individual grants, which is generally the vesting period, based on the estimated grant date fair values. Generally, stock options granted to employees fully vest four years from the grant date and have a term of 10 years.

Stock options granted to non-employees are accounted for using the Black-Scholes option-pricing model. Stock options granted to non-employees are subject to periodic revaluation over their vesting terms.

Preferred Stock Warrants

In connection with a credit agreement entered into during 2007 (Note 5), the Company issued preferred stock warrants. The Company accounts for freestanding warrants to purchase shares of convertible preferred stock that are contingently redeemable at fair value as liabilities on the balance sheets. The warrants are subject to subsequent remeasurement using the Black-Scholes option-pricing model at each balance sheet date, with changes in fair value recognized as increases or reductions to interest expense in the statements of operations. The Company will continue to adjust the liability for changes in fair value until the earlier of the (i) exercise of the warrants, (ii) expiration of the warrants or (iii) closing of a liquidation event or a qualified IPO, at which time all unexercised warrants will be automatically converted into common stock warrants. At the time of an IPO, the preferred stock warrants will be converted into warrants to purchase shares of common stock and the requirements for liability classification and mark-to-market adjustments will cease.

Common Stock Warrants

In connection with the convertible note debt financings during 2009, 2010 and 2011 (Note 6), the Company issued common stock warrants. The 2009 Warrants include a provision that provides for a reduction in the warrant exercise price if there are subsequent issuances of additional shares of common stock for consideration per share less than the warrant exercise prices. The 2010 Warrants and 2011 Warrants include provisions that provide for a reduction in the warrant exercise price and an increase in the number of exercisable warrants if the Company subsequently issues additional shares of common stock for consideration per share less than the warrant exercise prices. As a result, the warrants have been deemed to be derivative instruments that require liability classification and mark-to-market accounting at each balance sheet date. The Company will continue to adjust the fair value of the common stock warrant liability at the end of each reporting period for changes in fair values until the earlier of the exercise or expiration of the applicable common stock warrants. Subsequent to the completion of an IPO, the provisions described above will no longer be applicable, and as such the requirements for liability classification and mark-to-market adjustments will cease.

Upon issuance, the Company estimates the fair values of these warrants using a multiple scenario probability-weighted option-pricing model using the following inputs: the estimated fair value of the underlying common stock at the valuation measurement date; the risk-free interest

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rates; the expected dividend rates; the remaining contractual terms of the warrants; the expected volatility of the price of the underlying common stock; and the probability of various liquidity events. The estimates are based, in part, on subjective assumptions and could differ materially in the future. At the end of each reporting period, the fair value of the common stock warrant liability is valued in a manner consistent with the above and changes during the period are recorded as a component of interest expense.

Convertible Notes Payable to Stockholders Put Rights

In connection with the convertible note debt financings during 2009, 2010 and 2011 (Note 6), it was determined that the notes contain a provision ("Put right"), which provides that upon a change of control or liquidation, as defined in the convertible notes, the noteholders are entitled to an amount that is equal to the greater of (i) the sum of (y) 1.75x, 3.5x and 3.5x, respectively, of the principal amount plus (z) any accrued but unpaid interest and (ii) the amount the holder would be entitled to receive if the outstanding debt amount converted into shares of common stock immediately prior to repayment. These Put rights are considered derivative instruments that require liability classification and mark-to-market accounting at each balance sheet date.

Upon each convertible notes payable closing, the Company estimates the fair values of these Put rights using the probability-weighted expected return method ("PWERM"). Under the PWERM, the value of the Company's common stock and derivative instruments are estimated based upon an analysis of future enterprise values under various liquidity events. The future enterprise value is allocated among the various convertible debt and equity classes expected to be outstanding at the liquidity events based on the rights and preferences of each class. The estimates are based, in part, on subjective assumptions and could differ materially in the future. At the end of each reporting period, the fair value of the Put rights liability is determined by management consistent with the above and changes during the period are recorded as a component of interest expense. The Company will continue to adjust the fair value of the Put rights liability at the end of each reporting period for changes in fair value until the conversion or repayment of the associated convertible notes payable.

Income Taxes

The Company utilizes the asset and liability method of accounting for income taxes, as set forth in ASC Topic 740, "Income Taxes" ("ASC Topic 740"). Under this method, deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. A valuation allowance is established against net deferred tax assets if, based on the weight of available evidence, it is more likely than not that some or all of the net deferred tax assets will not be realized.

The Company has recorded a full valuation allowance at each balance sheet date presented. Based on the available evidence, the Company believes that it is more likely than not that it will be unable to utilize all of its deferred tax assets in the future.

In accordance with the provisions of ASC Topic 740, the Company accrues for the estimated amount of taxes for uncertain tax positions if it is more likely than not that the Company would be required to pay such additional taxes. An uncertain tax position will not be recognized if it has a less than 50% likelihood of being sustained. The Company's policy is to recognize any interest and penalties related to incomes taxes in income tax expense. As of December 31, 2010 and 2011, the Company had no uncertain tax positions.

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Net Loss per Share and Unaudited Pro Forma Net Loss per Share

Basic net loss per share is calculated in accordance with ASC Topic 260, “Earnings Per Share,” by dividing net loss attributable to common stockholders by the weighted average shares outstanding during the period, without consideration for common stock equivalents. Diluted net loss per share is calculated by adjusting weighted average shares outstanding for the dilutive effect of common share equivalents outstanding for the period, determined using the treasury-stock method. For purposes of the diluted net loss per share calculation, convertible preferred stock, stock options and warrants are considered to be common stock equivalents but are excluded from the calculation of diluted net loss per share because their effect would be anti-dilutive and therefore, basic and diluted net loss per share were the same for all periods presented.

The calculations for the unaudited pro forma basic and diluted net loss per share assume the conversion of all outstanding shares of convertible preferred stock (Note 9) into shares of common stock, as if the conversions had occurred at the beginning of the period. The calculations for the unaudited pro forma basic and diluted net loss per share also assume the conversion of the convertible notes payable (Note 6) into shares of common stock, as if the conversions had occurred at the beginning of the period, or for the 2011 Notes the dates of issuance during the year ended December 31, 2011. The unaudited pro forma net loss used in the calculations of unaudited pro forma basic and diluted net loss per share has been adjusted to remove the (i) preferred stock dividends, (ii) interest expense related to the convertible notes payable to stockholders, (iii) interest expense related to the amortization of debt discount and gains and losses resulting from mark-to-market adjustments of the Put rights related to the convertible notes payable to stockholders, (iv) interest expense related to the amortization of debt discount and gains and losses resulting from mark-to-market adjustments of the common stock warrants related to the convertible notes payable to stockholders and (v) gains and losses resulting from mark-to-market adjustments of the preferred stock warrants.

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The following table presents the historical computation of basic and diluted net loss per share and the unaudited pro forma basic and diluted net loss per share (in thousands, except per share amounts):

	Years Ended December 31,		
	2009	2010	2011
Historical net loss per share			
Numerator:			
Net loss attributable to common stockholders	$(42,384)	$(42,069)	$ (70,001)
Denominator:			
Weighted average shares outstanding, basic and diluted	10,140	10,249	10,253
Net loss per share, basic and diluted	$ (4.18)	$ (4.10)	$ (6.83)
Pro forma net loss per share (unaudited)			
Numerator:			
Net loss attributable to common stockholders			$ (70,001)
Add: Convertible preferred stock dividends			16,540
Interest expense on convertible notes payable to stockholders (Note 7)			7,115
Amortization of debt discount on modification of conversion option (Note 6)			543
Amortization of debt discount and changes in fair value of Put rights (Note 6)			11,420
Amortization of debt discount and changes in fair value of common stock warrants (Note 6)			85
Net loss used to compute pro forma net loss per share, basic and diluted			$ (34,298)
Denominator:			
Weighted average shares outstanding, basic and diluted			10,253
Add: Pro forma adjustments to reflect assumed weighted average effect of conversion of convertible preferred stock			199,800
Pro forma adjustments to reflect assumed weighted average effect of conversion of convertible preferred stock dividends			134,250
Pro forma adjustments to reflect assumed weighted average effect of conversion of convertible notes payable to stockholders, including accrued interest			
Weighted average shares used in computing pro forma net loss per share, basic and diluted			
Pro forma net loss per share, basic and diluted			

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The potentially dilutive securities not included in the calculation of diluted net loss per common share because to do so would be anti-dilutive are as follows (in common equivalent shares) (in thousands):

	Years Ended December 31,		
	2009	2010	2011
Convertible preferred stock (on an as if converted basis)	199,800	199,800	199,800
Convertible preferred stock dividends (on an as if converted basis)	109,505	134,250	160,974
Preferred stock warrants (on an as if converted basis)	969	969	969
Common stock warrants	17,518	24,789	34,984
Common stock options	29,132	27,997	22,765
Total	356,924	387,805	419,492

Recently Issued Accounting Pronouncements

In October 2009, the FASB issued ASU 2009-13. ASC Topic 605-25 previously required companies to allocate revenue based on the fair value of each deliverable even though such deliverables may not be sold separately either by the company itself or other vendors. ASU 2009-13 eliminates (i) the residual method of revenue allocation and (ii) the requirement that all undelivered elements must have objective and reliable evidence of fair value before a company can recognize the portion of the overall arrangement fee that is attributable to items that already have been delivered. Allocation of consideration is now based on management's best estimate of the selling price for an undelivered item where there is no other means to determine the fair value of that undelivered item. This revised accounting standard was effective prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010. The Company adopted this guidance as of January 1, 2011 and it was applicable to the Sanofi collaboration and license agreement the Company entered into in 2011 (Note 3).

In April 2010, the FASB amended ASU 2010-17, which provides guidance on the milestone method of revenue recognition for research or development arrangements. Under the amended ASU 2010-17, an entity can make an accounting policy election to recognize a payment that is contingent upon the achievement of a substantive milestone in its entirety in the period in which the milestone is achieved. The milestone method is not required and is not the only acceptable method of revenue recognition for milestone payments. This amended standard was effective prospectively for milestones achieved during annual and interim reporting periods beginning on or after June 15, 2010. Early application is permitted. The Company adopted this guidance as of January 1, 2011 and it was applicable to the Sanofi collaboration and license agreement the Company entered into in 2011 (Note 3).

In May 2011, the FASB issued ASU No. 2011-04, "Fair Value Measurement: Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs" (ASC Topic 820). This newly issued accounting standard clarifies the application of certain existing fair value measurement guidance and expands the disclosures for fair value measurements that are estimated using significant unobservable (Level 3) inputs. This ASU is effective on a prospective basis for annual and interim reporting periods beginning on or after December 15, 2011. Early application is not permitted. The Company will adopt this amended guidance for the fiscal year beginning January 1, 2012.

Other accounting standards that have been issued or proposed by the FASB or other standards-setting bodies that do not require adoption until a future date are not expected to have a material impact on the Company's financial statements upon adoption.

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3. Collaboration and License Agreement with Sanofi

In June 2011, the Company executed an exclusive, worldwide research collaboration and license agreement ("Collaboration") with Sanofi for novel classes of antibiotics resulting from the Company's RX-04 program. Under the terms of the Collaboration, the Company received in July 2011 a non-refundable, upfront payment and fees related to milestones that had been achieved as of that date of $19,000. Sanofi was granted a co-exclusive, worldwide, fully paid-up research license, without the right to grant sublicenses, solely to enable Sanofi to conduct research during the research term ("Research Term"). During the Research Term, June 28, 2011 to June 28, 2014, the parties will each conduct research on a best efforts basis with each party being responsible for its own assigned research and development costs. In addition, the Company received a payment of $3,000 from Sanofi in January 2012 for the achievement of a research milestone under the Collaboration. The Company has determined that the achievement of this milestone was substantive and therefore the $3,000 payment will be recognized as contract revenues in its entirety in January 2012, pursuant to the Company's adoption of the milestone method of revenue recognition under ASU 2010-17.

For each RX-04 product developed by Sanofi, the Company is eligible for up to $9,000 in potential research milestone payments, up to $27,000 in potential development milestone payments relating to initiation of Phase 1, 2 and 3 clinical trials, up to $50,000 in potential regulatory milestone payments relating to approvals in various jurisdictions including the United States, the European Union and Japan, and up to $100,000 in potential commercial milestone payments. The Company may also receive tiered percentage royalties of up to 10% on sales from products commercialized under the agreement, if any. To the extent such additional payments are contingent upon future events, the payments will be recognized as revenue when earned and when collectability is reasonably assured.

Sanofi has the right to develop an unlimited number of products from the Company's RX-04 program under the Collaboration provided that Sanofi exercises, during the Research Term, a development and commercialization option ("Option") to obtain such compounds ("Licensed Compounds"). Upon the exercise of an Option by Sanofi, the Company will grant to Sanofi an exclusive worldwide, royalty-bearing license, with the right to grant sublicenses, to develop, market and sell the Licensed Compound. In addition, for each compound for which Sanofi exercises an Option, Sanofi will also be entitled to designate a limited number of back-up compounds at any time during the Research Term or during the two-year period following the termination of the Research Term ("Follow-On Period"). Upon exercise of the Option, Sanofi assumes responsibility for the development and commercialization of the Licensed Compound and will use commercially reasonable efforts to develop, obtain regulatory approval for and commercialize each Licensed Compound. The Company determined that the exercise of the Option by Sanofi is a substantive option as the decision to exercise the Option is in the control of Sanofi, it is substantive to exercise and the exercise of the Option is not essential to the functionality of the deliverables at the inception of the Collaboration. Therefore, the Option was not considered to be a deliverable at the inception of the Collaboration. The right of Sanofi to exercise an Option for any compound terminates at the end of the Research Term.

The Company retains all rights pertaining to the discovery platform and all future programs, and also has the right to opt into a co-development and co-commercialization arrangement with Sanofi for one RX-04 product of the Company's choice in the United States.

The term of the Collaboration expires upon the earlier of (i) the end of the Research Term if Sanofi has not exercised at least one Option as of such date, (ii) the termination by either party upon a material breach by the other party, subject to prior notice and the opportunity to cure, or

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by Sanofi upon ninety days prior written notice, or (iii) the expiration of the last-to-expire of all payment obligations pursuant to the Collaboration with respect to all licensed products. Sanofi's termination of the agreement upon ninety days prior written notice, however, will not relieve Sanofi of its obligations to pay royalties with respect to further sales of any licensed product candidate.

The Company evaluated the Collaboration in accordance ASC 605-25 and ASU 2009-13 in order to determine whether the deliverables at the inception of the Collaboration: (i) the research license, (ii) research services during the Research Term and (iii) joint steering committee ("JSC") participation should be accounted for as a single unit or multiple units of accounting. The Company concluded that the research license does not have standalone value to Sanofi because (i) Sanofi does not have the ability to transfer or sublicense its rights to the research license and (ii) the activities to be conducted during the Research Term are highly dependent on the Company's unique knowledge and understanding of its proprietary technology, which is critical to optimizing the compounds. In addition, the JSC is a deliverable through the Research Term as the Company's research skills and expertise are essential in reaching the goals of the research plan. After the Research Term has been completed, the participation on the JSC is not a deliverable as the Company's research skills and expertise are no longer essential to the JSC as the arrangement transitions from the research phase to the commercialization and development phase. The Company concluded that the research license, the research services performed during the Research Term and the JSC obligation during the Research Term represent a single unit of accounting. The Company determined the BESP for the unit of accounting was $18,300 by considering the number of personnel who will be dedicated to the research services and JSC participation during the Research Term, and the estimated costs of the personnel based on its annual historical direct costs, together with a market-based profit margin, which was determined based on an analysis of third-party data for companies providing a similar type of outsourced scientific personnel services. This amount is being recognized as contract revenues under the proportional performance method as the services are performed over the three year Research Term, with any changes in estimate recognized in the period that the change in estimate is determined.

Additionally, the Company considered that after the completion of the Research Term, the arrangement contains a two year Follow-On Period in which neither party will conduct any research or development activities on any RX-04 compound other than licensed compounds. Although there is no specific delivery or performance of services or products during the two year Follow-On Period, such provision was deemed to provide value and benefit to Sanofi. Therefore, in accordance with Staff Accounting Bulletin Topic 13, "Revenue Recognition", the Company determined that the remaining initial consideration of $700 represents an upfront fee that will be recognized as contract revenues on a straight-line basis over the customer benefit period, which is five years.

The Company recognized contract revenues of approximately $2,705 related to the Collaboration for the year ended December 31, 2011. As of December 31, 2011, the Company had approximately $6,298 and $9,997 of current and non-current deferred revenue, respectively, related to the Collaboration on the accompanying balance sheet.

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4. Balance Sheet Components

Other Current Assets

Other current assets consisted of the following:

	December 31,	
	2010	2011
Prepaid expenses	$ 821	$ 763
Debt issuance costs, net of amortization	265	175
Deferred IPO costs	—	1,851
Other current assets	$1,086	$2,789

Fixed Assets, net

Fixed assets, net consisted of the following:

	Useful Lives (Years)	December 31,	
		2010	2011
Laboratory equipment	5	$ 3,307	$ 3,436
Office equipment	3	442	346
Purchased software	3	496	496
Leasehold improvements	Shorter of lease life or 10 years	4,042	4,042
Furniture and fixtures	5	159	159
		8,446	8,479
Less: Accumulated depreciation		(7,466)	(7,897)
Fixed assets, net		$ 980	$ 582

Depreciation expense relating to fixed assets was $589, $569 and $563 for the years ended December 31, 2009, 2010 and 2011, respectively.

Other Assets

Other assets consisted of the following:

	December 31,	
	2010	2011
Security deposit	$ 249	$ 50
Debt issuance costs, net of amortization	50	—
Other assets	$ 299	$ 50

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Accrued Interest on Convertible Notes Payable to Stockholders

Accrued interest on convertible notes payable to stockholders consisted of the following:

	December 31, 2010	December 31, 2011
2009 Notes (Note 6)	$ 6,493	$ 10,800
2010 Notes (Note 6)	574	2,186
2011 Notes (Note 6)	—	1,196
Accrued interest on convertible notes payable to stockholders	7,067	14,182
Less: Current portion	—	(14,182)
Noncurrent portion of accrued interest on convertible notes payable to stockholders	$ 7,067	$ —

Accrued Expenses

Accrued expenses consisted of the following:

	December 31, 2010	December 31, 2011
Employee compensation	$1,007	$ 873
Contracted services	600	1,647
Other	314	151
Accrued expenses	$1,921	$2,671

Accrued contracted services are comprised of amounts owed to third-party clinical research organizations and contract manufacturers for research and development work performed on behalf of the Company. At each period end, the Company evaluates and records the accrued expense balance based on information received from third parties. The accrued balance represents the Company's best estimate of amounts owed through period end, based on all information available. Such estimates are subject to change as additional information becomes available.

5. Notes Payable and Warrants for Preferred Stock

Credit and Security Agreement

On September 28, 2007, the Company entered into a Credit and Security Agreement with two banks ("Credit Agreement"), which provided for borrowings of up to $20,000 through March 31, 2008. Upon entering into the Credit Agreement in 2007, the Company drew the first borrowing tranche of $10,000. The Company borrowed the remaining $10,000 in March 2008. The Company made monthly interest-only payments through March 31, 2008; thereafter, monthly principal and interest payments were due, with all amounts outstanding due and payable on October 1, 2010. Interest accrued at 9.70% per annum. The loan was collateralized by substantially all of the Company's assets excluding intellectual property. The Credit Agreement was paid in full in October 2010.

In September 2007 and March 2008, pursuant to the Credit Agreement, the Company issued warrants to purchase 484,731 and 484,731 shares of Series C Convertible Preferred Stock ("Series C Warrants"), respectively. The warrants were immediately exercisable at $0.6189 per

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share, and have a life of 10 years from the date of the first borrowing draw of September 2007. The Company valued the September 2007 and the March 2008 Series C Warrants using the Black-Scholes option-pricing model with the following assumptions: interest rate (4.48% and 3.41%, respectively), term (10 and 9.5 years, respectively), volatility (70%) and annual dividend rate (0%). The relative fair values of the September 2007 and March 2008 Series C Warrants of $236 and $229, respectively, were recorded as a debt discount, and were amortized to interest expense over the term of the loan. Accordingly, interest expense of $170 and $128 was recognized for the years ended December 31, 2009 and 2010, respectively.

The Company has classified the preferred stock warrants as a liability on the balance sheet and is required to adjust the carrying value of the Series C Warrants to fair value at each reporting period. The statements of operations include reductions to interest expense of $391, $73 and $0 for the years ended December 31, 2009, 2010 and 2011, respectively, related to mark-to-market accounting adjustments for the Series C Warrants. The aggregate fair value of the Series C Warrants as of December 31, 2010 and 2011 was $1 and $1, respectively.

6. Convertible Notes Payable to Stockholders

During 2009, 2010 and 2011, the Company executed agreements to borrow up to $35,000 (“2009 Financing”), $15,000 (“2010 Financing”) and $21,033 (“2011 Financing”), respectively, from certain of its stockholders through multiple issuances of convertible promissory notes (“2009 Notes”, “2010 Notes” and “2011 Notes”) and warrants (“2009 Warrants”, “2010 Warrants” and “2011 Warrants”). Interest on the 2009 Notes, 2010 Notes and 2011 Notes accrues at 10% per annum, compounded quarterly.

In January 2009 (“First 2009 Closing”) and December 2009 (“Second 2009 Closing”), the Company borrowed $25,000 and $10,000, respectively. In May 2010 (“First 2010 Closing”), August 2010 (“Second 2010 Closing”) and November 2010 (“Third 2010 Closing”), the Company borrowed $5,500, $5,400 and $4,100, respectively. In January 2011 (“First 2011 Closing”), March 2011 (“Second 2011 Closing”), June 2011 (“Third 2011 Closing”) and December 2011 (“Fourth 2011 Closing”), the Company borrowed $5,784, $4,732, $4,000 and $6,517, respectively. Certain holders of the Company’s convertible preferred stock who chose not to purchase their pro rata portion of the 2009 Notes, 2010 Notes and 2011 Notes have forgone their future anti-dilution rights with respect to their convertible preferred stock (Note 9).

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Convertible notes payable to stockholders consisted of the following:

	Issuance Date	December 31, 2010	December 31, 2011
2009 Notes:			
First 2009 Closing	January 8, 2009	$25,000	$ 25,000
Second 2009 Closing	December 11, 2009	10,000	10,000
Sub-total 2009 Notes		35,000	35,000
2010 Notes:			
First 2010 Closing	May 28, 2010	5,500	5,500
Second 2010 Closing	August 25, 2010	5,400	5,400
Third 2010 Closing	November 19, 2010	4,100	4,100
Sub-total 2010 Notes		15,000	15,000
2011 Notes:			
First 2011 Closing	January 12, 2011	—	5,784
Second 2011 closing	March 23, 2011	—	4,732
Third 2011 Closing	June 2, 2011	—	4,000
Fourth 2011 Closing	December 28, 2011	—	6,517
Sub-total 2011 Notes		—	21,033
Total convertible notes payable to stockholders		50,000	71,033
Less: Unamortized debt discount		(2,908)	(8,890)
Less: Current portion		—	(62,143)
Noncurrent portion of convertible notes payable to stockholders		$47,092	$ —

In connection with the 2011 Financing, the Company increased the authorized number of common and preferred shares to 650,000,000 and 478,329,525, respectively.

The holders of the 2009 Notes, 2010 Notes and 2011 Notes have the following rights and privileges:

Repayment

The 2009 Notes originally provided for a stated maturity date of January 8, 2014, with the right by a vote of the holders of 2009 Notes representing 60% of the outstanding principal amount of all 2009 Notes to demand repayment commencing after January 8, 2010. The 2010 Notes originally provided for a stated maturity date of May 28, 2015, with the right of the holders of 2010 Notes representing a majority of the outstanding principal amount of all 2010 Notes to demand repayment commencing after March 31, 2011. In connection with the Company's 2011 Financing, the stated maturity dates and repayment terms of the 2009 Notes and 2010 Notes were amended as described below.

The amended terms of the 2009 Notes provide that unless previously converted or repaid, principal and interest shall become due and payable on the later of (i) January 8, 2014 and (ii) the 91st day following the earlier of (y) January 10, 2016 and (z) the date of payment or conversion in full of the 2011 Notes. The amended terms of the 2009 Notes also provide that upon a vote by the holders of the 2009 Notes representing 60% of the outstanding principal amount of all 2009 Notes, the holders of the 2009 Notes can demand repayment on or after June 30, 2012, provided there are no 2011 Notes or 2010 Notes outstanding. The amended

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terms of the 2010 Notes provide that unless previously converted or repaid, principal and interest shall become due and payable on the later of (i) May 28, 2015 and (ii) the 91st day following the earlier of (y) January 10, 2016 and (z) the date of payment or conversion in full of the 2011 Notes. The amended terms of the 2010 Notes also provide that upon a vote of the holders of 2010 Notes representing a majority of the outstanding principal amount of all 2010 Notes, the holders of the 2010 Notes can demand repayment on or after the earlier of (i) June 30, 2012, provided there are no 2011 Notes outstanding, and (ii) the date on which the Company enters into an exclusive product licensing transaction providing at least $30,000 upfront net cash proceeds to the Company. As a result of the 2011 amendments, which deferred the lenders' right to put the debt back to the Company until June 30, 2012, the 2009 Notes and 2010 Notes were classified as non-current in the accompanying December 31, 2010 balance sheet.

The terms of the 2011 Notes state that unless previously converted or repaid, principal and interest on the 2011 Notes shall become due and payable five years from the date of issuance. At the election of the holders of 2011 Notes representing a majority of the outstanding principal amount of all 2011 Notes, the holders of the 2011 Notes can demand repayment on or after the earlier of (i) June 30, 2012 and (ii) the date on which the Company enters into an exclusive product licensing transaction providing at least $30,000 upfront net cash proceeds to the Company.

As the current terms of the 2009 Notes, 2010 Notes and 2011 Notes state that the lenders have the right to put the debt back to the Company on or after June 30, 2012, the 2009 Notes, 2010 Notes and 2011 Notes are classified as current in the accompanying December 31, 2011 balance sheet.

The Company does not have the right or the obligation to repay any portion of the principal amount or accrued interest thereon on any portion of the amounts owed under the 2009 Notes, 2010 Notes or 2011 Notes prior to the stated maturity dates, except in connection with the above discussed right by the lenders to put the debt back to the Company or in connection with a change of control or liquidation as discussed below. In connection with the $15,000 Loan and Security Agreement ("Loan Agreement") entered into in February 2012 (Note 17), the holders of the 2009 Notes, 2010 Notes and 2011 Notes executed a subordination agreement whereby they cannot demand or receive payment until such time as all amounts due under the Loan Agreement are paid in full in cash, and there is no further commitment on the part of the lender under the Loan Agreement to lend any further funds to the Company.

Conversion

In the event that the Company completes an equity transaction prior to maturity, the holders of the 2009 Notes, the 2010 Notes and 2011 Notes may elect to convert the outstanding amount of the 2009 Notes, 2010 Notes and 2011 Notes, including accrued interest, into the number of new securities that is equal to the outstanding amount divided by the lesser of (i) $0.6189 per share (subject to certain anti-dilutive adjustments) and (ii) 90%, 33% and 33%, respectively, of the price of the new securities.

In the event of an IPO prior to maturity, the outstanding amount of the 2009 Notes, 2010 Notes and 2011 Notes, including accrued interest, shall automatically convert into shares of common stock. As amended in connection with the 2011 Financing, the 2009 Notes, 2010 Notes and 2011 Notes convert immediately prior to an IPO into a number of shares of common stock that, following such issuance, represents up to 99.2% of the outstanding common stock of the Company on a fully-diluted basis, with the newly issued shares issued in the following

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proportions (subject to the limits described below): shares representing 80% of the outstanding common stock of the Company on a fully-diluted basis are issued upon conversion of the 2011 Notes; shares representing 16% (and up to 96% once the 2011 Notes reach their limit) of the outstanding common stock of the Company on a fully-diluted basis are issued upon conversion of the 2010 Notes; shares representing 3.2% (99.2% once the 2010 Notes and 2011 Notes reach their respective limits) of the outstanding common stock of the Company on a fully-diluted basis are issued upon conversion of the 2009 Notes; and all other securities of the Company representing 0.8% (or more once the 2009 Notes, 2010 Notes and 2011 Notes reach their respective limits) of the outstanding common stock of the Company on a fully-diluted basis. For purposes of calculating the following limitations on the issuance of such shares, each share of common stock issued upon conversion of the notes is deemed to have a value equal to the price per share at which the common stock is issued and sold in the IPO, before any underwriting discount. The value of shares issued upon conversion of the 2011 Notes is limited to three times the aggregate of (i) any principal outstanding under the 2011 Notes plus (ii) any accrued but unpaid interest; the value of shares issued upon conversion of the 2010 Notes is limited to three times the aggregate of (i) any principal outstanding under the 2010 Notes plus (ii) any accrued but unpaid interest; and the value of the shares issued upon the conversion of the 2009 Notes is limited to one and one-third times the aggregate of (i) any principal outstanding under the 2009 Notes plus (ii) any accrued but unpaid interest.

In accordance with ASC Topic 470, “Debt” (“ASC Topic 470”), the Company assessed whether there was a change in the fair value of the embedded conversion options associated with the 2009 Notes (“2009 Conversion option”) and 2010 Notes (“2010 Conversion option”) as a result of the modification to such conversion options in 2011 as described above. The fair values of the 2009 Conversion option and the 2010 Conversion option were determined by management using the PWERM (Note 2). Pursuant to ASC Topic 470, as the fair value of the 2009 Conversion option increased by less than 10% of the carrying value of the related 2009 Notes, the amendment was treated as a modification and the increase of $815 was recorded as a debt discount and is being amortized to interest expense from the date of the modification through June 30, 2012, which is the earliest date at which the Company can be required to repay all amounts outstanding under the 2009 Notes. For the year ended December 31, 2011, the Company recognized $543 of interest expense related to such amortization. Pursuant to ASC Topic 470, as the fair value of the 2010 Conversion option decreased by less than 10% of the carrying value of the 2010 Notes, no further accounting was required.

These conversion rights do not require bifurcation as a freestanding derivative instrument under ASC Topic 815, “Derivatives and Hedging” (“ASC Topic 815”) and there was no beneficial conversion feature charge recognized in the year ended December 31, 2010 or 2011. The Company will continue to assess, through the date of repayment or conversion, whether or not a beneficial conversion feature requires recognition in the financial statements.

Liquidation

Upon a change of control or liquidation, as defined in the agreements, each holder of 2009 Notes, 2010 Notes and 2011 Notes shall automatically be entitled to receive the greater of (i) the sum of (y) 1.75x, 3.5x and 3.5x, respectively, of the principal amount plus (z) any accrued but unpaid interest and (ii) the amount the holder would be entitled to receive if the outstanding debt amount converted into shares of common stock immediately prior to such change of control or liquidation. As a result of such provision, these Put rights have been deemed to be derivative instruments that require liability classification and mark-to-market accounting under ASC Topic 815. The fair values of the Put rights are reflected in the accompanying balance sheets and were determined by management using the PWERM (Note 2). In connection with the PWERM analyses

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as of each respective balance sheet date, two types of future event scenarios were considered, an IPO and a strategic sale or merger. Three different IPO and four different sale/merger scenarios were considered for a total of seven scenarios as of each balance sheet date, in order to reflect a range of possible values. As of the December 31, 2010 and 2011 balance sheet dates, our management and board of directors determined the total probability for three IPO scenarios was 65% and 70%, respectively, with a corresponding total probability for four sale/merger scenarios of 35% and 30%, respectively, based on an analysis of current market conditions and management and the board of directors' expectations of the timing of future scientific progress with its product candidates and discovery programs. The future value for each scenario was estimated by management and the board of directors based on an analysis of IPOs or sales/mergers of companies in a similar stage of development as the Company's at each of the respective balance sheet dates. The estimated future values for various sale/merger scenarios were increased from December 31, 2010 to December 31, 2011, based on significant changes in the business during that period. Such changes included: signing an exclusive, worldwide research collaboration and license agreement with Sanofi (Note 3); completion of the delafloxacin Phase 2b clinical trial and receipt of top-line data in December 2011 allowing the Company to plan for the commencement of Phase 3 development in the second half of 2012; and the completion of a radezolid long-term preclinical study which showed favorable evidence of radezolid's long-term safety profile. Such increases in estimated future values resulted in a greater allocation of value to the Put rights in the sale/merger scenarios offset by the above discussed decrease in the combined total probabilities for the sale/merger scenarios.

The Company determined the fair values of the Put rights corresponding to the debt issued upon the First 2009 Closing and Second 2009 Closing to be $6,030 and $675, respectively, or $6,705 in aggregate. The fair value of these Put rights was recorded as a debt discount and was amortized to interest expense through January 8, 2010, which was the original earliest date at which the Company could have been required to repay all amounts outstanding under the 2009 Notes.

The Company determined the fair values of the Put rights corresponding to the debt issued upon the First 2010 Closing, Second 2010 Closing and Third 2010 Closing to be $1,831, $1,846 and $2,371, respectively, or $6,048 in aggregate. The fair value of these Put rights was recorded as a debt discount and during the year ended December 31, 2010 was being amortized to interest expense through March 31, 2011, which was the original earliest date at which the Company could have been required to repay all amounts outstanding under the 2010 Notes. As a result of the amendment of the 2010 Notes in connection with the 2011 Financing, which amended the original earliest date at which the Company could have been required to repay all amounts outstanding under the 2010 Notes from March 31, 2011 to June 30, 2012, the unamortized debt discount remaining at January 2011 is being amortized to interest expense through June 30, 2012.

The Company determined the fair values of the Put rights corresponding to the debt issued upon the First 2011 Closing, Second 2011 Closing, Third 2011 Closing and Fourth 2011 Closing to be $3,226, $2,827, $2,440 and $4,289, respectively, or $12,782 in aggregate. The fair value of these Put rights was recorded as a debt discount and is being amortized to interest expense through June 30, 2012, which is the earliest date at which the Company can be required to repay all amounts outstanding under the 2011 Notes.

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The following table summarizes the aggregate fair values of the Put rights, which reflect the mark-to-market adjustments discussed above, in connection with the 2009 Financing, 2010 Financing and 2011 Financing:

	December 31,	
	2010	2011
2009 Put rights	$ 2,262	$ 4,532
2010 Put rights	8,782	9,847
2011 Put rights	—	13,844
Put rights	$11,044	$28,223

Warrants for Common Stock

In connection with the 2009 Financing, the 2010 Financing and 2011 Financing, the Company issued the 2009 Warrants, 2010 Warrants and 2011 Warrants to purchase shares of common stock of the Company. The warrants were all immediately exercisable and have a 10 year term. The 2009 Warrants include a provision that provides for a reduction in the warrant exercise price if the Company subsequently issues additional shares of common stock for consideration per share less than the warrant exercise price. The 2010 Warrants and 2011 Warrants include provisions that provide for a reduction in the warrant exercise price and an increase in the number of exercisable warrants if the Company subsequently issues additional shares of common stock for consideration per share less than the warrant exercise price. As a result of these provisions, the 2009 Warrants, 2010 Warrants and 2011 Warrants have been deemed to be derivative instruments that require liability classification and mark-to-market accounting under ASC Topic 815. The fair values of the warrants are reflected in the accompanying balance sheets and were determined by management using the multiple scenario probability-weighted option-pricing model (Note 2). The warrants will be automatically exercised prior to expiration if the fair market value per share is greater than the exercise price, subject to certain anti-dilutive adjustments, in effect.

In connection with the First 2009 Closing and Second 2009 Closing, the Company issued the 2009 Warrants for the purchase of 12,118,276 shares and 4,847,310 shares of common stock, respectively, or 16,965,586 in aggregate, at an exercise price of $0.25 per share. The initial aggregate fair value of the 2009 Warrants of $1,518 was recorded as debt discount and was amortized to interest expense through January 8, 2010, which was the original earliest date that the Company could have been required to repay all amounts outstanding under the 2009 Notes.

The assumptions used to revalue the 2009 Warrants at December 31, 2009, 2010 and 2011 using a multiple scenario probability-weighted option-pricing model included the following, as well as the common stock value and the probability of various liquidity events (Note 2):

	Years Ended December 31,		
	2009	2010	2011
Risk free interest rate	3.70% - 3.85%	2.90% - 3.10%	1.40% - 1.50%
Expected dividend yield	0%	0%	0%
Remaining contractual term	9 - 10 years	8 - 8.9 years	7 - 7.9 years
Expected volatility	85%	80%	80%
IPO Probability	65%	65%	70%
Sale/Merger Probability	35%	35%	30%

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In connection with the First 2010 Closing, the Second 2010 Closing and the Third 2010 Closing, the Company issued the 2010 Warrants for the purchase of 2,666,020, 2,617,548 and 1,987,399 shares of common stock, respectively, or 7,270,967 in aggregate, at an exercise price of $0.07 per share. The Company initially valued the 2010 Warrants using a multiple scenario probability-weighted option-pricing model with the following assumptions, as well as the common stock value and the probability of various liquidity events (Note 2): interest rate (3.31%, 2.54% and 2.88%, respectively), term (10 years), volatility (80%) and annual dividend rate (0%). The initial aggregate fair value of the 2010 Warrants of $313 was recorded as a debt discount and was being amortized to interest expense through March 31, 2011, which was the original earliest date that the Company could have been required to repay all amounts outstanding under the 2010 Notes. As a result of the amendment of the 2010 Notes in connection with the 2011 Financing, which amended the original earliest date at which the Company could have been required to repay all amounts outstanding under the 2010 Notes from March 31, 2011 to June 30, 2012, the unamortized debt discount remaining at January 2011 is being amortized to interest expense through June 30, 2012.

The assumptions used to revalue the 2010 Warrants at December 31, 2010 and 2011 using a multiple scenario probability-weighted option-pricing model included the following, as well as the common stock value and the probability of various liquidity events (Note 2):

	Years Ended December 31,	
	2010	2011
Risk free interest rate	3.20% - 3.30%	1.60% - 1.70%
Expected dividend yield	0%	0%
Remaining contractual term	9.4 - 9.9 years	8.4 - 8.9 years
Expected volatility	80%	80%
IPO Probability	65%	70%
Sale/Merger Probability	35%	30%

In connection with the First 2011 Closing, Second 2011 Closing, Third 2011 Closing and Fourth 2011 Closing, the Company issued the 2011 Warrants for the purchase of 2,803,683, 2,293,920, 1,938,923 and 3,158,679 shares of common stock, respectively, or 10,195,205 in aggregate, at an exercise price of $0.07 per share. The Company initially valued the 2011 Warrants using a multiple scenario probability-weighted option-pricing model with the following assumptions, as well as the common stock value and the probability of various liquidity events (Note 2): interest rate (3.3%, 3.4%, 3.0%, and 1.9%, respectively), term (10 years), volatility (80%) and annual dividend rate (0%). The aggregate fair value of the warrants of $41 was recorded as a debt discount and is being amortized to interest expense through June 30, 2012, which is the earliest date that the Company can be required to repay all amounts outstanding under the 2011 Notes.

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The assumptions used to revalue the 2011 Warrants at December 31, 2011 using a multiple scenario probability-weighted option-pricing model included the following, as well as the common stock value and the probability of various liquidity events (Note 2):

	Year Ended December 31, 2011
Risk free interest rate	1.70% - 1.90%
Expected dividend yield	0%
Remaining contractual term	9 - 10 years
Expected volatility	80%
IPO Probability	70%
Sale/Merger Probability	30%

The following table summarizes the issuances of the warrants as discussed above:

	Issuance Date	Exercise Price	Expiration Date	December 31, 2010	December 31, 2011
2009 Warrants:					
First 2009 Closing	January 8, 2009	$ 0.25	January 8, 2019	12,118,276	12,118,276
Second 2009 Closing	December 11, 2009	$ 0.25	December 11, 2019	4,847,310	4,847,310
Sub-Total 2009 Warrants				16,965,586	16,965,586
2010 Warrants:					
First 2010 Closing	May 28, 2010	$ 0.07	May 28, 2020	2,666,020	2,666,020
Second 2010 Closing	August 25, 2010	$ 0.07	August 25, 2020	2,617,548	2,617,548
Third 2010 Closing	November 19, 2010	$ 0.07	November 19, 2020	1,987,399	1,987,399
Sub-Total 2010 Warrants				7,270,967	7,270,967
2011 Warrants:					
First 2011 Closing	January 12, 2011	$ 0.07	January 12, 2021	—	2,803,683
Second 2011 Closing	March 23, 2011	$ 0.07	March 23, 2021	—	2,293,920
Third 2011 Closing	June 2, 2011	$ 0.07	June 2, 2021	—	1,938,923
Fourth 2011 Closing	December 28, 2011	$ 0.07	December 28, 2021	—	3,158,679
Sub-Total 2011 Warrants				—	10,195,205
Warrants outstanding				24,236,553	34,431,758
Weighted average exercise price				$ 0.20	$ 0.16

The following table summarizes the aggregate fair values of the warrants, which reflect the mark-to-market adjustments discussed above, in connection with the 2009 Warrants, 2010 Warrants and 2011 Warrants:

	December 31, 2010	2011
2009 Warrants	$ 3	$ 2
2010 Warrants	27	25
2011 Warrants	—	39
Warrants	$ 30	$ 66

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The following table summarizes interest expense recorded in the statements of operations resulting from the amortization of debt discount related to the 2009 Conversion option, 2009 Put rights, 2010 Put rights, 2011 Put rights, 2009 Warrants, 2010 Warrants and 2011 Warrants and the mark-to-market adjustments related to the 2009 Put rights, 2010 Put rights, 2011 Put rights, 2009 Warrants, 2010 Warrants and 2011 Warrants:

	Years Ended December 31,		
	2009	2010	2011
Debt discount amortization:			
2009 Conversion option	$ —	$ —	$ 543
2009 Put rights	6,389	316	—
2010 Put rights	—	3,250	1,865
2011 Put rights	—	—	5,158
2009 Warrants	1,442	76	—
2010 Warrants	—	203	73
2011 Warrants	—	—	17
Mark-to-market adjustments:			
2009 Put rights	(4,180)	(263)	2,270
2010 Put rights	—	2,734	1,065
2011 Put rights	—	—	1,062
2009 Warrants	(737)	(778)	(1)
2010 Warrants	—	(286)	(2)
2011 Warrants	—	—	(2)
Increase (reduction) to interest expense	$ 2,914	$ 5,252	$12,048

Voting and Other Rights

The Company cannot redeem or purchase any shares of its securities, declare dividends, sell all or substantially all of its assets or effect a significant acquisition without the approval of holders of 2009 Notes representing at least 60% of the outstanding principal amount of all 2009 Notes and holders of 2010 Notes and 2011 Notes representing a majority of the outstanding principal amount of each of the 2010 Notes and 2011 Notes. In addition, any issuance of new securities or debt requires the approval of holders of 2009 Notes representing at least 60% of the outstanding principal amount of the 2009 Notes, and holders of 2010 Notes and 2011 Notes representing a majority of the outstanding principal amount of each of the 2010 Notes and 2011 Notes. In connection with the note financings, the holders of the 2009 Notes, 2010 Notes and 2011 Notes have the right to appoint a majority of the members of the board of directors.

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7. Interest Expense

Interest expense in the statements of operations consisted of the following:

	Years Ended December 31,		
	2009	2010	2011
Cash interest expense:			
Notes payable (Note 5)	$ 1,055	$ 261	$ —
Convertible notes payable to stockholders (Note 6)	2,591	4,476	7,115
Sub-total cash interest expense	3,646	4,737	7,115
Non-cash interest expense:			
Convertible notes payable to stockholders (Note 6)	2,914	5,252	12,048
Debt issuance costs amortization	613	246	334
Notes payable (Note 5)	(221)	55	—
Sub-total non-cash interest expense	3,306	5,553	12,382
Interest expense	$ 6,952	$10,290	$19,497

8. Fair Value Measurements

The provisions of the accounting standard for fair value define fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The transaction of selling an asset or transferring a liability is a hypothetical transaction at the measurement date, considered from the perspective of a market participant who holds the asset or owes the liability. Therefore, the objective of a fair value measurement is to determine the price that would be received when selling an asset or paid to transfer a liability (an exit price) at the measurement date. This standard classifies the inputs used to measure fair value into the following hierarchy:

Level 1	Unadjusted quoted prices in active markets for identical assets or liabilities.
Level 2	Unadjusted quoted prices in active markets for similar assets or liabilities, or unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs other than quoted prices that are observable for the asset or liability.
Level 3	Unobservable inputs for the asset or liability.

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The following table summarizes the non-financial assets and liabilities reported at fair value and measured on a recurring basis as of December 31, 2010 and 2011:

		Fair Value Measurements Using		
Description	Total	Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
December 31, 2010				
Preferred stock warrants	$ (1)	$ —	$ —	$ (1)
Common stock warrants	(30)	—	—	(30)
Put rights	(11,044)	—	—	(11,044)
Total assets (liabilities)	$(11,075)	$ —	$ —	$ (11,075)
December 31, 2011				
Preferred stock warrants	$ (1)	$ —	$ —	$ (1)
Common stock warrants	(66)	—	—	(66)
Put rights	(28,223)	—	—	(28,223)
Total assets (liabilities)	$(28,290)	$ —	$ —	$ (28,290)

The preferred stock warrants were valued using the Black-Scholes option-pricing model (Notes 2 and 5), the common stock warrants were valued using a multiple scenario probability-weighted option-pricing model (Notes 2 and 6) and the Put rights were valued using the PWERM (Notes 2 and 6).

The following table summarizes changes in the fair value of the Company's level 3 liabilities for the year ended December 31, 2009:

	Fair Value at December 31, 2008	Realized Gains (Losses)	Change in Unrealized Gains (Losses)	(Issuances) Settlements	Net Transfer in (out) of Level 3	Fair Value at December 31, 2009
Level 3 Liabilities						
Preferred stock warrants	$ (507)	$ 42	$ 391	$ —	$ —	$ (74)
Common stock warrants	—	—	737	(1,518)	—	(781)
Put rights	—	—	4,180	(6,705)	—	(2,525)
Total liabilities at fair value	$ (507)	$ 42	$ 5,308	$ (8,223)	$ —	$ (3,380)

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The following table summarizes changes in the fair value of the Company's level 3 liabilities for the year ended December 31, 2010:

	Fair Value at December 31, 2009	Realized Gains (Losses)	Change in Unrealized Gains (Losses)	(Issuances) Settlements	Net Transfer in (out) of Level 3	Fair Value at December 31, 2010
Level 3 Liabilities						
Preferred stock warrants	$ (74)	$ —	$ 73	$ —	$ —	$ (1)
Common stock warrants	(781)	—	1,064	(313)	—	(30)
Put rights	(2,525)	—	(2,471)	(6,048)	—	(11,044)
Total liabilities at fair value	$ (3,380)	$ —	$ (1,334)	$ (6,361)	$ —	$ (11,075)

The following table summarizes changes in the fair value of the Company's level 3 liabilities for the year ended December 31, 2011:

	Fair Value at December 31, 2010	Realized Gains (Losses)	Change in Unrealized Gains (Losses)	(Issuances) Settlements	Net Transfer in (out) of Level 3	Fair Value at December 31, 2011
Level 3 Liabilities						
Preferred stock warrants	$ (1)	$ —	$ —	$ —	$ —	$ (1)
Common stock warrants	(30)	—	5	(41)	—	(66)
Put rights	(11,044)	—	(4,397)	(12,782)	—	(28,223)
Total liabilities at fair value	$ (11,075)	$ —	$ (4,392)	$ (12,823)	$ —	$ (28,290)

The change in unrealized gains (losses) for the preferred stock warrants (Note 5), common stock warrants (Note 6) and Put rights (Note 6) are recorded as increases or reductions to interest expense in the statements of operations.

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9. Convertible Preferred Stock

Under the Company's amended and restated articles of incorporation, the Company's convertible preferred stock is recorded at the fair value as of the date of issuance, net of issuance costs.

Convertible preferred stock at December 31, 2010 consisted of the following:

	December 31, 2010			
	Shares		Proceeds, net of issuance costs	Liquidation Amounts
	Designated	Outstanding		
Series A-1 Convertible Preferred Stock	7,422,443			
Series A-1(A) Convertible Preferred Stock	4,695,832			
Series A-L Convertible Preferred Stock	3,887,804			
Sub-Total Series A Convertible Preferred Stock	16,006,079	16,006,079	$ 9,291	$ 19,897
Series B Convertible Preferred Stock	92,401,844			
Series B-1 Convertible Preferred Stock	10,199,547			
Sub-Total Series B Convertible Preferred Stock	102,601,391	102,601,391	63,226	115,395
Series C Convertible Preferred Stock	77,314,589			
Series C-1 Convertible Preferred Stock	4,847,310			
Sub-Total Series C Convertible Preferred Stock	82,161,899	81,192,437	49,911	71,451
Undesignated	277,138,876			
	477,908,245	199,799,907	$ 122,428	$ 206,743

Convertible preferred stock at December 31, 2011 consisted of the following:

	December 31, 2011			
	Shares		Proceeds, net of issuance costs	Liquidation Amounts
	Designated	Outstanding		
Series A-1 Convertible Preferred Stock	3,635,482			
Series A-1(A) Convertible Preferred Stock	8,482,793			
Series A-L Convertible Preferred Stock	3,887,804			
Sub-Total Series A Convertible Preferred Stock	16,006,079	16,006,079	$ 9,291	$ 21,489
Series B Convertible Preferred Stock	70,230,451			
Series B-1 Convertible Preferred Stock	32,370,940			
Sub-Total Series B Convertible Preferred Stock	102,601,391	102,601,391	63,226	124,627
Series C Convertible Preferred Stock	53,694,223			
Series C-1 Convertible Preferred Stock	28,467,676			
Sub-Total Series C Convertible Preferred Stock	82,161,899	81,192,437	49,911	77,167
Undesignated	277,560,156			
	478,329,525	199,799,907	$ 122,428	$ 223,283

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The convertible preferred stock is classified outside of stockholders' equity (deficit) because the shares contain liquidation features that are not solely within the control of the Company.

The Series C Convertible Preferred Stock together with the Series B Convertible Preferred Stock is hereinafter referred to as "Senior Convertible Preferred Stock." The holders of Series A, Series B and Series C Convertible Preferred Stock ("Convertible Preferred Stock") have the following rights and privileges:

Dividends

Dividends shall accrue to holders of Convertible Preferred Stock at the rate of 8%, compounding per annum (on the original issue price of $0.6189 per share). These dividends are cumulative, compounding and accrue to the holders of the Convertible Preferred Stock whether or not funds are legally available and whether or not declared by the Board of Directors. Such dividends have not been accrued into the carrying value of the Convertible Preferred Stock as redemption of such stock is not certain. As of December 31, 2010 and 2011, cumulative dividends payable to the holders of the Convertible Preferred Stock, but not yet declared, totaled $83,087 and $99,627, respectively.

Liquidation Rights

In the event of a liquidation, dissolution, merger, sale or winding up of the Company, the holders of the Convertible Preferred Stock are entitled to receive, prior to and in preference to the holders of common stock, from the assets of the Company available for distribution, an amount equal to $0.6189 per share (subject to certain anti-dilutive adjustments), respectively, plus any accrued but unpaid dividends in order of preference. Holders of the Senior Convertible Preferred Stock rank senior upon liquidation to the holders of the Series A Convertible Preferred Stock. Any net assets remaining after the payment of preferential amounts to the holders of Convertible Preferred Stock shall be shared ratably by the holders of the Convertible Preferred Stock with the common stockholders as if all preferred shares were converted into common stock at the time of the event, up to a limit of four times the original purchase price of the Convertible Preferred Stock. A consolidation or merger of the Company, or sale of all or substantially all of the assets, shall be regarded as a liquidation unless holders of at least 50% of the Senior Convertible Preferred Stock elect not to treat such a transaction as a liquidation.

Conversion

At the option of the holders of the Convertible Preferred Stock, shares may be converted to common stock at the initial rate of one share of common stock for one share of Convertible Preferred Stock, subject to certain future adjustments. Certain holders of the Company's Convertible Preferred Stock who chose not to purchase their pro rata portion of the 2009 Notes, 2010 Notes and 2011 Notes (Note 6) have forgone their future anti-dilution rights with respect to their Convertible Preferred Stock. Any accrued but unpaid preferred dividends may be converted to common stock at an amount equal to $0.6189 per share. The Convertible Preferred Stock, along with any accrued but unpaid preferred dividends, shall automatically convert into shares of common stock upon the closing of an IPO of the Company's common stock from which net proceeds to the Company equal or exceed $30,000 at a per share price of not less than $0.93. Immediately prior, and subject to, an IPO each share of Convertible Preferred Stock converts into one share of common stock and any accrued but unpaid preferred dividends convert into common stock at an amount equal to $0.6189 per share. See Note 6 under Conversion and Note 10 for additional information regarding the convertible notes payable to stockholders conversion details.

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Voting and Other Rights

The Convertible Preferred Stock shall have certain voting rights equivalent to the common stockholders, and other rights including the right to appoint five directors to the Board (Note 6), the right of first refusal on the sale of Convertible Preferred Stock or common stock and the option to participate in any sale of Convertible Preferred Stock to a third-party purchaser by any holder of Convertible Preferred Stock. Each holder of Convertible Preferred Stock has the right to sell the same percentage of their shares as the stockholder who entered into the agreement.

10. Common Stock

The Company's Certificate of Incorporation, as amended, authorizes the Company to issue shares of $0.001 par value common stock. Each share of common stock entitles the holder to one vote on all matters submitted to a vote of the Company's stockholders. Holders of the Company's common stock are not entitled to receive dividends unless declared by the Board of Directors. Any such dividends would be subject to the preferential dividend rights of the holders of the Convertible Preferred Stock (Note 9). There have been no dividends declared to date.

The Company has reserved shares of common stock as follows:

	December 31,	
	2010	2011
Conversion of Series A Convertible Preferred Stock (Note 9)	16,006,079	16,006,079
Conversion of Series B Convertible Preferred Stock (Note 9)	102,601,391	102,601,391
Conversion of Series C Convertible Preferred Stock (Note 9)	81,192,437	81,192,437
Conversion of accumulated Convertible Preferred Stock dividends (Note 9)	134,249,628	160,973,590
Conversion of convertible notes payable to stockholders (Note 6)	80,788,496	114,772,984
Conversion of accrued interest on convertible notes payable to stockholders (Notes 4 and 6)	11,418,646	22,914,849
Warrants outstanding:		
Other warrants	552,717	552,717
Series C Warrants (Note 5)	969,462	969,462
2009 Warrants (Note 6)	16,965,586	16,965,586
2010 Warrants (Note 6)	7,270,967	7,270,967
2011 Warrants (Note 6)	—	10,195,205
Incentive stock awards issued and available for grant (Note 11)	42,840,262	42,840,262
Reserved shares of common stock	494,855,671	577,255,529

The shares of common stock for the conversion of the convertible notes payable to stockholders (Note 6) and accrued interest on convertible notes payable to stockholders (Notes 4 and 6) are based on an assumed conversion price of $0.6189 per share. However, the ultimate number of shares of common stock that will be issued in connection with a potential IPO is subject to the calculation of the share conversion as further described in Note 6 under Conversion. Accordingly, the number of shares of common stock to be issued upon the conversion of convertible notes payable to stockholders and accrued interest on convertible notes payable to stockholders in connection with an IPO may significantly exceed the assumed number noted in the table above. In addition to the above, effective February 2012, 10,714,285 shares of common stock are reserved in connection with the warrants issued in connection with the Loan Agreement (Note 17).

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11. Stock-Based Compensation

2001 Stock Option and Incentive Plan

In 2001, the Company's Board of Directors adopted the 2001 Stock Plan. The 2001 Stock Plan provided for the granting of incentive and non-qualified stock options and restricted stock bonus awards to officers, directors, employees and consultants of the Company. The maximum number of common shares that could be issued under the 2001 Stock Plan was 48,498,196. If shares granted under the 2001 Stock Plan expired unexercised, such shares were available for future grants, provided the cumulative number of shares re-issued did not exceed 48,498,196. As of December 31, 2011, the Company had 22,615,013 shares of common stock reserved under the 2001 Stock Plan for issuance upon exercise of stock options. No awards were to be granted under the 2001 Stock Plan after the completion of ten years from the date on which the Plan was adopted by the Board, but awards previously granted may extend beyond that date. Therefore, no future awards will be made pursuant to the 2001 Stock Plan subsequent to September 2011.

2011 Equity Incentive Plan

In November 2011, the Company's Board of Directors adopted the 2011 Equity Incentive Plan. The 2011 Equity Incentive Plan reserves for issuance the sum of (i) 20,039,392 shares of common stock which expired under the 2001 Stock Plan and (ii) any shares of common stock that are represented by awards granted under the 2001 Stock Plan that are forfeited, expire or are cancelled without delivery of shares of common stock or which result in the forfeiture of shares of common stock back to the Company on or after the date on which the Board of Directors adopts this Plan, provided, however, that no more than 22,800,870 shares shall be added to the Plan pursuant to this clause (ii). The 2011 Equity Incentive Plan provides for the granting of incentive stock options, non-qualified options, stock grants and stock-based awards to employees, directors and consultants of the Company. As of December 31, 2011, the Company has 20,225,249 shares of common stock reserved under the 2011 Equity Incentive Plan for issuance upon exercise of stock options.

Common Stock Subject to Repurchase

The Company allows employees to exercise options prior to vesting. The restricted shares issued upon early exercise of stock options are legally issued and outstanding. The Company has the right to repurchase, at the original purchase price, any unvested (but issued) common shares upon the termination of service of an employee. However, these restricted shares are only deemed outstanding for basic net loss per share computation purposes (Note 2) upon the respective repurchase rights lapsing. As of December 31, 2010 and 2011, no outstanding shares were subject to a repurchase right by the Company.

Stock Option Activity

The exercise price of each stock option issued under the 2001 Stock Plan and the 2011 Equity Incentive Plan shall be specified by the Board of Directors at the time of grant. In addition, the vesting period shall be determined by the Board of Directors at the time of the grant and specified in the applicable option agreement.

All options granted by the Company during the years ended December 31, 2009, 2010 and 2011 were granted with exercise prices not less than the fair market value of the Company's common stock, as determined by the Company's Board of Directors.

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A summary of the stock option activity under the 2001 Stock Plan is presented in the table and narrative below:

	Shares Available for Grant	Options Outstanding	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term
Balance at December 31, 2010	14,843,079	27,997,183	0.14	7.06
Granted	(645,000)	645,000	0.02	
Exercised	N/A	—	—	
Forfeited	300,940	(300,940)	0.10	
Expired	5,726,230	(5,726,230)	0.20	
Expired at expiration of 2001 Stock Plan	(20,039,392)	N/A	N/A	
Shares carried over to 2011 Equity Incentive Plan	(185,857)	N/A	N/A	
Balance at December 31, 2011	—	22,615,013	$ 0.11	6.69
Options exercisable at December 31, 2011		14,187,591	$ 0.14	5.77
Options vested and expected to vest at December 31, 2011		19,486,158	$ 0.12	6.40

The aggregate intrinsic value of options is calculated as the difference between the exercise price of the underlying options and the deemed fair value of the Company's common stock for those shares that had exercise prices lower than the deemed fair value of the Company's common stock. The aggregate intrinsic value of options exercised under the 2001 Stock Plan during the years ended December 31, 2009 and 2010 was $3 and $0, respectively, and there were no options exercised during the year ended December 31, 2011.

The Company received cash proceeds from the exercise of stock options under the 2001 Stock Plan of $35 and $1 in the years ended December 31, 2009 and 2010, respectively, and there were no options exercised under the 2001 Stock Plan during the year ended December 31, 2011. The weighted average grant date fair value of options granted under the 2001 Stock Plan during the years ended December 31, 2009, 2010 and 2011 was $0.10, $0.05 and $0.0007, respectively. The grant date total fair value of employee options vested under the 2001 Stock Plan during the years ended December 31, 2009, 2010 and 2011 was $943, $245 and $362, respectively.

The following table summarizes additional information about stock options outstanding under the 2001 Stock Plan at December 31, 2011:

Exercise Price	Number Outstanding as of December 31, 2011	Weighted Average Remaining Contractual Term in Years of Options Outstanding	Number of Options Exercisable as of December 31, 2011
$0.0016	425,000	9.67	—
$0.0060	20,000	9.22	15,000
$0.07	13,369,196	8.22	5,843,398
$0.10	2,395,234	1.02	2,395,234
$0.14	1,566,144	7.42	1,169,877
$0.20	844,250	3.06	844,250
$0.25	3,995,189	5.14	3,919,832
	22,615,013		14,187,591

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A summary of the stock option activity under the 2011 Equity Incentive Plan is presented in the table and narrative below:

	Shares Available for Grant	Options Outstanding	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term
Balance at December 31, 2010	—	—	N/A	N/A
Shares authorized for grant	20,039,392	N/A	N/A	
Shares carried over from 2001 Stock Plan	185,857	N/A	N/A	
Granted	(150,000)	150,000	0.0016	
Exercised	N/A	—	—	
Forfeited	—	—	—	
Expired	—	—	—	
Balance at December 31, 2011	20,075,249	150,000	$0.0016	9.89
Options exercisable at December 31, 2011		—	N/A	N/A
Options vested and expected to vest at December 31, 2011		107,091	$0.0016	9.87

The aggregate intrinsic value of options is calculated as the difference between the exercise price of the underlying options and the deemed fair value of the Company's common stock for those shares that had exercise prices lower than the deemed fair value of the Company's common stock. There were no options exercised under the 2011 Equity Incentive Plan during the year ended December 31, 2011.

The weighted average grant date fair value of options granted under the 2011 Equity Incentive Plan during the year ended December 31, 2011 was $0.0016. There were no options vested under the 2011 Equity Incentive Plan during the year ended December 31, 2011.

The following table summarizes additional information about stock options outstanding under the 2011 Equity Incentive Plan at December 31, 2011:

Exercise Price	Number Outstanding as of December 31, 2011	Weighted Average Remaining Contractual Term in Years of Options Outstanding	Number of Options Exercisable as of December 31, 2011
$0.0016	150,000	9.89	—

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Stock-Based Compensation

As described in Note 2, upon adoption of ASC Topic 718, the Company selected the Black-Scholes option-pricing model for determining the estimated fair value for service or performance-based stock-based awards. The Black-Scholes option-pricing model requires the use of subjective assumptions in order to determine the fair value of stock-based awards.

The assumptions used to value option grants were as follows:

	Years Ended December 31,		
	2009	2010	2011
Risk free interest rate	2.29% - 2.92%	2.51% - 2.83%	1.13% - 2.35%
Expected dividend yield	0%	0%	0%
Expected term—employee awards	6 years	6 years	6 years
Expected term—non-employee awards	10 years	N/A	10 years
Expected volatility	80%	76%	70%

Risk free interest rate—The risk free interest rate is based on the United State Treasury yield curve in effect at the time of grant for zero coupon United States Treasury notes with maturities approximately equal to the option's expected term.

Expected dividend yield—The Company has never declared or paid any cash dividends and does not expect to pay any cash dividends in the foreseeable future.

Expected term—The Company calculates expected term for employee awards using the "simplified" method for "plain vanilla" options, which is the simple average of the vesting period and the contractual term of the option. The Company uses the contractual term as the expected term for non-employee awards.

Expected volatility—As the Company has been privately-held since inception, there is no specific historical or implied volatility information available. Accordingly, the Company determines volatility based on an average of reported volatility of selected peer companies in the pharmaceutical and biotechnology industry in a similar stage of development.

For employee stock options, the Company estimates its forfeiture rate based on an analysis of its actual forfeitures and will continue to evaluate the adequacy of the forfeiture rate based on actual forfeiture experience, analysis of employee turnover behavior and other factors. The impact from a forfeiture rate adjustment will be recognized in full in the period of adjustment and, if the actual number of future forfeitures differs from that estimated by the Company, the Company may be required to record adjustments to stock-based compensation expense in future periods.

Each of the inputs discussed above is subjective and generally requires significant management judgment to determine.

The Company recognizes stock-based compensation expense for stock options grants to employees on a straight-line basis over the requisite service period of the individual grants, which is generally the vesting period, based on the estimated grant date fair values. Generally, stock options granted to employees fully vest four years from the grant date and have a term of 10 years.

Stock options granted to non-employees are accounted for based on their fair value on the measurement date using the Black-Scholes option-pricing model. Stock options granted to

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non-employees are subject to periodic revaluation over their vesting terms. As a result, the charge to operations for non-employee options with vesting is affected each reporting period by changes in the fair value of the Company's common stock.

Stock-based compensation expense includes stock options granted to employees and non-employees as follows:

	Years Ended December 31,		
	2009	2010	2011
Employees	$ 921	$ 305	$ 257
Non-employees	29	17	—
Total operating expenses	$ 950	$ 322	$ 257

During the years ended December 31, 2009, 2010 and 2011, the Company granted 2,582,500, 0 and 20,000 options, respectively, to non-employees.

Stock-based compensation has been reported in the Company's statements of operations as follows:

	Years Ended December 31,		
	2009	2010	2011
Research and development	$ 406	$ 160	$ 59
General and administrative	544	162	198
Total operating expenses	$ 950	$ 322	$ 257

No related tax benefits of the stock-based compensation expense have been recognized and no related tax benefits have been realized from the exercise of stock options due to the Company's net operating loss carryforwards.

Total aggregate unamortized stock-based compensation cost under the 2001 Stock Plan and the 2011 Equity Incentive Plan as of December 31, 2011, net of forfeitures, was $250, which will be recognized over the remaining weighted average vesting periods of 2.08 years at December 31, 2011.

12. Income Taxes

A reconciliation of the federal statutory income tax rate of 34% to the Company's effective income tax rate as a percentage of net loss is as follows:

	Years Ended December 31,		
	2009	2010	2011
Federal statutory income tax rate	34.0%	34.0%	34.0%
State taxes, net of federal benefit	5.6%	6.3%	5.3%
Federal research and development tax credit	2.4%	2.0%	2.2%
Other	(1.2)%	(0.8)%	(0.1)%
Valuation allowance	(40.8)%	(41.5)%	(41.4)%
Effective income tax rate	0.0%	0.0%	0.0%

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Significant components of the Company's deferred tax assets (liabilities) are as follows:

	December 31, 2010	December 31, 2011
Gross deferred tax assets (liabilities)		
Net operating loss carryforwards	$ 69,860	$ 79,356
Tax credit carryforwards	8,318	9,697
Deferred revenue	—	6,347
Fixed assets	905	992
Put rights	3,212	7,871
Warrants	(882)	(795)
Other	193	272
	81,606	103,740
Valuation allowance	(81,606)	(103,740)
Net deferred tax assets (liabilities)	$ —	$ —

The Company has established a full valuation allowance due to the uncertainty of the Company's ability to generate sufficient taxable income to realize the deferred tax assets, and therefore has not recognized any benefits from the net operating losses, tax credits and other deferred tax assets. The Company's valuation allowance increased $11,866, $11,110 and $22,134 for the years ended December 31, 2009, 2010 and 2011, respectively.

As of December 31, 2011, the Company had the following tax net operating loss carryforwards available to reduce future federal and Connecticut taxable income, and research and development tax credit carryforwards available to offset future federal and Connecticut income taxes:

	Amount	Expire Through
Tax net operating loss carryforwards:		
Federal	$ 203,778	2031
Connecticut	$ 203,468	2031
Research and development tax credit carryforwards:		
Federal	$ 7,378	2031
Connecticut	$ 3,514	Do not expire

The Company's ability to utilize its federal net operating losses and federal tax credits may be limited under Sections 382 and 383 of the Internal Revenue Code. The limitations apply if an ownership change, as defined by Section 382, occurs. Generally, an ownership change occurs when certain shareholders increase their aggregated ownership by more than 50 percentage points over their lowest ownership percentage in a testing period (typically three years). The Company may already be subject to Section 382 limitations due to previous ownership changes. In addition, future changes in stock ownership may also trigger an ownership change and, consequently, a Section 382 limitation. Due to the significant complexity and cost associated with a change in control study, and the expectation of continuing to incur losses whereby the net operating losses and federal tax credits are not anticipated to be used in the foreseeable future, the Company has not assessed whether there have been changes in control since the Company's formation. If the Company has experienced changes in control at any time since Company formation, utilization of its net operating losses or research and development credit carryforwards would be subject to annual limitations under Section 382. Any limitation may result in the expiration of a portion of the net operating loss or research and development credit carryforwards before utilization, which would reduce the Company's gross deferred tax assets and corresponding valuation allowance.

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Effective January 1, 2007, the Company adopted the accounting guidance within ASC Topic 740 on uncertainties in income taxes. ASC Topic 740 prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The provisions of this guidance are to be applied to all tax positions upon initial adoption of this standard. Only tax positions that meet the more-likely-than-not recognition threshold at the effective date may be recognized upon adoption of ASC Topic 740.

The cumulative effect of the adoption of ASC Topic 740 resulted in no adjustment to accumulated deficit as of January 1, 2007. As of December 31, 2010 and 2011, the Company did not have any unrecognized tax benefit. To the extent penalties and interest would be assessed on any underpayment of income tax, the Company's policy is that such amounts would be accrued and classified as a component of income tax expense in the financial statements. To date, the Company has not recorded any such interest or penalties.

The Company's primary income tax jurisdictions are the United States and Connecticut. As a result of the Company's net operating loss carryforwards, the Company's federal and Connecticut statutes of limitations remain open for all tax years since 2000. The Company does not currently have any federal or Connecticut income tax examinations in progress, nor has the Company had any federal or Connecticut income tax examinations since inception.

13. Other Income

In 2010, the Company recognized other income related to the Qualifying Therapeutic Discovery Project ("QTDP") program. The QTDP program was created by the United States Congress as part of the Patient Protection and Affordable Care Act and provided for reimbursement of certain costs paid or incurred during 2009 and 2010 directly related to the conduct of a QTDP. During the year ended December 31, 2010, the Company was awarded $980 related to this program, which is included in other income in the accompanying statement of operations.

Additionally, as a result of legislation in the State of Connecticut, companies have the opportunity to exchange certain research and development tax credit carryforwards for a cash payment of 65% of the research and development tax credit. The research and development expenses that qualify for Connecticut credits are limited to those costs incurred within Connecticut. The Company has elected to participate in the exchange program and, as a result, has recognized net benefits of $160, $118 and $246 for the years ended December 31, 2009, 2010 and 2011, respectively, which are included in other income in the accompanying statements of operations.

14. Commitments and Contingencies

Operating Leases

In March 2002, the Company entered into a lease agreement expiring on July 31, 2012 for its principal research and administrative facility at 300 George Street, New Haven, Connecticut. In August 2011, the Company amended this lease to extend the lease term to August 31, 2015 with two, three-year renewal options. The renewal options are executable by the Company upon delivering written notice to the landlord no later than nine months prior to the scheduled termination date, as such termination date may have been extended by the exercise of a previous renewal option.

The terms of the lease provide for rental payments on a graduated scale, and the Company recognizes rent expense on a straight-line basis over the non-cancellable lease term and records

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the difference between cash rent payments and the recognition of rent expense as a deferred rent liability included in accrued expenses. The Company is required to pay its share of operating expenses, and these amounts are not included in rent expense or minimum operating lease payments below. Rent expense under operating leases for facilities and equipment was approximately $557, $559 and $552 for the years ended December 31, 2009, 2010 and 2011, respectively. As of December 31, 2011, minimum operating lease payments under non-cancelable leases (as amended) are as follows:

Years ending December 31:	Amount
2012	$ 560
2013	560
2014	559
2015	369
2016	—
Total future minimum operating lease payments	$2,048

License Agreements

In December 2001, the Company entered into an exclusive license agreement with Yale University ("Yale") under which the Company obtained an exclusive right to use certain technology related to the high resolution X-ray crystal structure of a 50S ribosome through the term of Yale's patent rights on such technology. In return, the Company issued 344,595 shares of the Company's common stock. The fair value of the shares of $35 was charged to operations in 2001. In September 2004 and December 2009, the license agreement was amended to include additional 50S ribosome technology and also 70S ribosome technology owned by Yale. The Company is obligated to certain diligence requirements and has the right to grant sublicenses to third parties, although Yale is entitled to a portion of payments received from the sub-licensees. Under the license agreement, the Company may be required to make payments to Yale of up to $900 upon achieving certain regulatory approval milestones for each of the first three products developed under the license. In accordance with the license agreement, Yale is also entitled to receive royalty payments in the single digits based on net sales, if any, of products using the subject matter of the license. Upon the occurrence of certain events, Yale has the right to terminate the license agreement upon 60 days written notice to the Company, should the Company fail to make a material payment under the agreement, commit a material breach of the agreement, fail to carry insurance required by the agreement, cease to carry on the Company's business or become subject to bankruptcy or similar insolvency event. The Company has the right to terminate the license agreement upon 90 days written notice to Yale. Unless earlier terminated, the agreement will continue in effect until the last of the licensed patents expires.

In March 2005, the Company entered into an exclusive license agreement with the Medical Research Council ("MRC") under which the Company acquired rights to certain patent applications and other intellectual property related to the high resolution X-ray crystal structure of a 30S ribosome through the term of the MRC's patent rights on such technology. Upon entering into the license agreement, the Company paid the MRC a license fee of $10. The Company is obligated to certain diligence requirements and has the right to grant sublicenses to third parties. Under the license agreement, the Company may be required to pay the MRC an aggregate of $610 upon the achievement of specified development and regulatory approval milestones for a pharmaceutical product and $100 for a diagnostic product. In accordance with the license agreement, the MRC is also entitled to receive royalty payments in the single digits based on net sales, if any, of licensed pharmaceutical and diagnostic products. The Company and the MRC have the right to terminate the license agreement upon 30 days written notice if

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the other party commits a material breach of the agreement or an insolvency event occurs with respect to the other party, and the MRC may terminate the agreement if the Company challenges the protection of the licensed patent rights and know how. Unless earlier terminated, the term of the agreement continues until the expiration of the last to expire claim of the licensed patent rights on a country-by-country basis.

In May 2006, the Company and Wakunaga Pharmaceutical Co., Ltd. ("Wakunaga") executed a license agreement under which the Company acquired rights to certain patents, patent applications and other intellectual property related to delafloxacin. Upon execution of the agreement, the Company made a non-refundable payment to Wakunaga of $1,500. In June 2007 and September 2009, the Company made milestone payments to Wakunaga under the agreement of $2,000 and $1,500, respectively. Under the license, the Company has the right to grant sublicenses, although Wakunaga is entitled to a substantial portion of non-royalty income received from a sub-license of the Wakunaga technology. The license agreement also provides for potential additional future payments of up to $15,000 to Wakunaga upon the achievement of specified development and regulatory milestones, in addition to tiered royalty payments in the single digits on net sales, if any, of the licensed product. Wakunaga has certain termination rights, should the Company fail to perform its obligations under the agreement, the Company becomes subject to bankruptcy or similar events, or the Company's business is transferred or sold and the successor requires the Company to terminate a substantial part of its development activities under the agreement. The Company has the right to terminate the license for cause upon six months written notice to Wakunaga. Unless earlier terminated, the license agreement will continue in effect on a country-by-country and product-by-product basis until the Company is no longer required to pay any royalties, which is the later of the date the manufacture, use or sale of a licensed product in a country is no longer covered by a valid patent claim, or a specified number of years following the first commercial sale in such country.

In November 2010, the Company entered into a license and supply agreement with CyDex Pharmaceuticals, Inc. (now a wholly owned subsidiary of Ligand Pharmaceuticals Incorporated, both hereafter referred to as Ligand) under which the Company obtained an exclusive right, under certain patents and patent applications, to use Ligand's beta sulfobutyl cyclodextrin, Captisol, in the Company's development and commercialization of a delafloxacin product. Also, under the terms of the license agreement, the Company obtained a non-exclusive license to Ligand's Captisol data package. Upon entering into the license agreement, the Company made a non-refundable payment of $300 to Ligand. In January 2011, the Company made a milestone payment to Ligand under the agreement of $150. The Company is obligated to certain diligence requirements and has the right to grant sublicenses to third parties. The license agreement provides for payments of up to $4,100 to Ligand upon the achievement of future development and commercial milestones, and also obligations to make royalty payments in the single digits based on net sales, if any, of the licensed product. Additionally, the Company has agreed to purchase its requirements of Captisol from Ligand for use in a delafloxacin product, with pricing established pursuant to a tiered pricing schedule. Ligand has certain rights to terminate the agreement following a cure period, should the Company fail to perform its obligations under the agreement. In addition, Ligand may terminate the agreement immediately if the Company fails to pay milestones or royalties due under the agreement or if the Company becomes subject to bankruptcy or similar events. The Company has the right to terminate the license upon 90 days written notice to Ligand. Unless earlier terminated, the agreement will continue in effect until the expiration of the Company's obligation to pay royalties. Such obligation expires, on a country-by-country basis, a specified number of years following the expiration date of the last valid claim of a licensed product in the country of sale, unless there has never been a valid claim of a licensed product in the country of sale, then such number of years after the first sale of the licensed product in such country.

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All payments made under these license agreements have been expensed as research and development expenses in the Company's statements of operations.

2011 Management Bonus Plan

In August 2011, the Company put in place a Management Bonus Plan ("Management Bonus Plan") intended to incentivize certain of the Company's key employees to increase the value and attractiveness of the Company with the goal of achieving a transaction which is either (i) the consummation of a sale, merger, consolidation or series of related events which create a change in control of the Company ("Sale Event") or (ii) the first to occur of an IPO or a reverse merger ("Non-Sale Event") by providing these individuals an incentive payment tied to the accomplishment of this goal. Payment under the Management Bonus Plan is to occur upon achieving certain values of the Company in a sale, merger or IPO. On or prior to the first Sale Event or Non-Sale Event to occur during the term of this Management Bonus Plan in which the valuation equals or exceeds $52,500 ("Triggering Event"), the Bonus Pool shall be calculated as 10% of that portion of the Triggering Event Valuation in excess of $52,500. In connection with a Triggering Event, each participant's bonus amount shall be equal to the amount, if any, by which (i) the participant's target bonus amount exceeds (ii) the participant's intrinsic stock option value as of the date of such Triggering Event. In the case of a Sale Triggering Event, the bonus amount earned under the Management Bonus Plan would be paid via cash, securities or other consideration, or combination thereof, to parallel the type of consideration received by the Company. In the case of a Non-Sale Triggering Event, the bonus amount earned under the Management Bonus Plan would be paid in the form of new options to acquire stock in the Company, which would be issued with an exercise price equal to the fair market value of the Company's stock on the grant date. The number of shares of new options issued would be two times the bonus amount under the Management Bonus Plan divided by the fair market value of the Company's stock, and would vest upon the later of (i) the first anniversary of the Triggering Event or (ii) the vesting schedule of the last Company stock options granted to the participant. The Administrator of the Management Bonus Plan, which is the Compensation Committee of the Board of Directors, shall determine which individuals will be participants and each such participant's percentage of the bonus pool. The Management Bonus Plan terminates on June 30, 2012, provided however that the Administrator will determine by March 31, 2012 whether or not the Management Bonus Plan shall be extended. Notwithstanding the foregoing, if at any time the Company completes any debt or equity financing after August 2011, the Administrator may in its sole discretion modify the Management Bonus Plan and the Triggering Event Valuation equitably to reflect the implications of such financing. As of December 31, 2011, there have been no modifications made to the Management Bonus Plan.

2011 Non-Employee Director Bonus Plan

In November 2011, the Company put in place a Non-Employee Director Bonus Plan ("Director Bonus Plan") intended to incentivize non-employee members of the Company's Board of Directors to increase the value and attractiveness of the Company with the goal of achieving a transaction which is either (i) the consummation of a sale, merger, consolidation or series of related events which create a change in control of the Company ("Sale Event") or (ii) the first to occur of an IPO or a reverse merger ("Non-Sale Event") by providing these individuals an incentive payment tied to the accomplishment of this goal. Payment under the Director Bonus Plan is to occur upon achieving certain values of the Company in a sale, merger or IPO. On or prior to the first Sale Event or Non-Sale Event to occur during the term of the Director Bonus Plan in which the valuation equals or exceeds $52,500 ("Triggering Event Valuation"), the target bonus amount for each participant shall be calculated as 0.05% of that portion of the Triggering Event Valuation in excess of $52,500. As of November 2011, the

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Company had five non-employee members of the Company's Board of Directors who are deemed to be participants for purposes of eligibility under the Director Bonus Plan. In connection with a Triggering Event, each participant's target bonus amount shall be equal to the amount, if any, by which (i) the participant's target bonus amount exceeds (ii) the participant's intrinsic stock option value as of the date of such Triggering Event. In the case of a Sale Triggering Event, the bonus amount earned under the Director Bonus Plan would be paid via cash, securities or other consideration, or combination thereof, to parallel the type of consideration received by the Company. In the case of a Non-Sale Triggering Event, the bonus amount earned under the Director Bonus Plan would be paid in the form of new options to acquire stock in the Company, which would be issued with an exercise price equal to the fair market value of the Company's stock on the grant date. The number of shares of new options issued would be two times the bonus amount under the Director Bonus Plan divided by the fair market value of the Company's stock and would vest immediately. The Administrator of the Director Bonus Plan is the Compensation Committee of the Board of Directors. The Director Bonus Plan terminates on June 30, 2012, provided however that the Administrator will determine by March 31, 2012 whether or not the Director Bonus Plan shall be extended. Notwithstanding the foregoing, if at any time the Company completes any debt or equity financing after November 2011, the Administrator may in its sole discretion modify the Director Bonus Plan and the Triggering Event Valuation equitably to reflect the implications of such financing. As of December 31, 2011, there have been no modifications made to the Director Bonus Plan.

Contingencies

The Company may become subject to claims and assessments from time to time in the ordinary course of business. Such matters are subject to many uncertainties and outcomes are not predictable with assurance. The Company accrues liabilities for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated. As of December 31, 2010 and 2011, the Company does not believe that any such matters, individually or in the aggregate, will have a material adverse effect on the Company's business, financial condition, results of operations or cash flows.

15. Benefit Plan

In December 2002, the Company adopted a 401(k) Plan in which all of the Company's employees are eligible to participate. Each year the Company may, but is not required to, make matching contributions to the 401(k) Plan. For the years ended December 31, 2009, 2010 and 2011, the Company did not make any contributions to the 401(k) Plan.

16. Related Party Transactions

The Company reimbursed legal fees paid by one of its principal stockholders in connection with the 2009 Financing, 2010 Financing and 2011 Financing (Note 6) of $681 and $243 for the years ended December 31, 2010 and 2011, respectively. As of December 31, 2010 and 2011, the Company had $0 and $30, respectively, in outstanding amounts payable in connection with the above reimbursements.

The Company has outstanding convertible notes payable (Note 6) to several of its principal stockholders.

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17. Subsequent Events

Notes Payable

In February 2012, the Company entered into a Loan and Security Agreement ("Loan Agreement") pursuant to which it borrowed an aggregate principal amount of $15,000. The Company is obligated to make monthly payments in arrears of interest only, at a rate of 9.1% per annum, commencing on April 1, 2012 and continuing on the first day of each successive month thereafter through and including December 1, 2012. Commencing on January 1, 2013, and continuing on the first day of each month through and including June 1, 2015, the Company will make consecutive equal monthly payments of principal and interest. All unpaid principal and accrued and unpaid interest with respect to the Loan Agreement is due and payable in full on June 1, 2015. The loan is collateralized by substantially all of the Company's assets, excluding its intellectual property. In connection with the Loan Agreement, the Company entered into a negative pledge arrangement in which the Company has agreed not to encumber its intellectual property. The Company paid a $75 facility fee at the inception of the loan which will be recognized as additional interest expense over the term of the loan. Subject to certain limited exceptions, amounts prepaid during the first, second and third year of the Loan Agreement are subject to a prepayment fee of 3%, 2% and 1%, respectively. In addition, upon repayment of the total amounts borrowed, the Company will be required to pay an exit fee equal to 4.5% of the total amount borrowed, or $675, which will be recognized as additional interest expense over the term of the loan. The amounts due under the Loan Agreement may become immediately due and payable upon the occurrence of a Material Adverse Change, as defined under the Loan Agreement. Under the terms of the Loan Agreement, the Company is subject to operational covenants, including limitations on the Company's ability to incur liens or additional debt, pay dividends, redeem stock, make specified investments and engage in merger, consolidation or asset sale transactions, among other restrictions. In connection with the Loan Agreement, the holders of the 2009 Notes, the 2010 Notes and the 2011 Notes (Note 6) executed a subordination agreement whereby they cannot demand or receive payment until such time as all amounts due under the Loan Agreement are paid in full in cash, and there is no further commitment on the part of the lender under the Loan Agreement to lend any further funds to the Company.

In accordance with ASC Topic 470, the Company has determined that the change to the date on which the lenders can put the debt back to the Company is a modification of the 2009 Notes, 2010 Notes and 2011 Notes. As such, the unamortized debt discount (see Note 6 – Liquidation and Warrants for Common Stock) remaining as of February 2012 related to the 2009 Notes, 2010 Notes and 2011 Notes will be amortized to interest expense from the date of modification through June 1, 2015, the stated maturity date of the Loan Agreement (unaudited).

In February 2012, pursuant to the Loan Agreement, the Company issued warrants to purchase 10,714,285 shares of common stock of the Company. The warrants were all immediately exercisable at $0.07 per share and have a seven-year life.

2011 Management Bonus and Non-Employee Director Bonus Plans (Unaudited)

In April 2012, the Management Bonus and Non-Employee Director Bonus Plans were amended to change the type of equity to be issued in the case of a Non-Sale Event and to revise the associated vesting schedule. The bonus amount to be earned under both plans in the case of a Non-Sale Event will be paid in the form of restricted stock units ("RSUs") granted to the participant that upon vesting will require the Company to issue common stock of the Company. The number of shares subject to each grant of RSUs shall be calculated by dividing the bonus amount by the Triggering Event Per Share Valuation and rounding down to the nearest whole

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share. The RSUs will vest as follows: (i) 50% of each grant shall vest on the first anniversary of the Triggering Event and (ii) the remainder of each grant will vest pro rata on a quarterly basis over the next three years, provided the participant remains employed by the Company or continues to serve as a member of the board of directors on the applicable vesting dates. In addition, each RSU award will vest in full upon a merger, reorganization or other consolidation of the Company, including the sale of substantially all of the Company's assets, in which the Company is not the surviving entity and in which the persons holding the Company's outstanding equity immediately prior to the transaction own less than 50% of the surviving entity's total voting power immediately after the transaction, subject to the participant's continuous employment by us or service as a member of the board of directors through the date of such merger, reorganization or other consolidation of the Company. In the case of a reverse merger in which the Triggering Event Valuation is less than the enterprise value of the constituent entities to the reverse merger other than the Company, the vesting of the RSUs would also be subject to full acceleration if the employee's employment with the Company is terminated by the Company other than for cause, or by the employee for good reason, prior to the first anniversary of the reverse merger and for a director if he or she ceases to be a member of the board of directors for any reason other than removal for cause provided such resignation occurs prior to the first anniversary of the reverse merger.

The December 31, 2011 financial statements do not reflect the above transactions.

The Company evaluated subsequent events through March 2, 2012, which was the date the financial statements were issued.

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Shares

Rib-X Pharmaceuticals, Inc.

Common Stock

PROSPECTUS

Deutsche Bank Securities

William Blair & Company

Lazard Capital Markets

Needham & Company

Through and including , 2012 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealers' obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

, 2012

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table indicates the expenses to be incurred in connection with the offering described in this registration statement, other than underwriting discounts and commissions, all of which will be paid by us. All of the amounts shown are estimated except for the SEC registration fee, the FINRA filing fee and the NASDAQ Global Market listing fee.

	Amount to be paid
SEC registration fee	$ 9,168
NASDAQ Global Market listing fee	$ 125,000
FINRA filing fee	$ 8,500
Printing and mailing	*
Legal fees and expenses	*
Accounting fees and expenses	*
Blue sky fees and expenses	*
Transfer agent and registrar	*
Miscellaneous	*
Total	$ *

* *To be provided by amendment.*

Item 14. Indemnification of Directors and Officers.

Our restated certificate of incorporation and restated by-laws that will be effective upon completion of the offering provide that each person who was or is made a party or is threatened to be made a party to or is otherwise involved (including, without limitation, as a witness) in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he or she is or was one of our directors or officers or is or was serving at our request as a director, officer, or trustee of another corporation, or of a partnership, joint venture, trust or other enterprise, including service with respect to an employee benefit plan, whether the basis of such proceeding is alleged action in an official capacity as a director, officer or trustee or in any other capacity while serving as a director, officer or trustee, shall be indemnified and held harmless by us to the fullest extent authorized by the Delaware General Corporation Law against all expense, liability and loss (including attorneys' fees, judgments, fines, ERISA excise taxes or penalties and amounts paid in settlement) reasonably incurred or suffered by such.

Section 145 of the Delaware General Corporation Law permits a corporation to indemnify any director or officer of the corporation against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with any action, suit or proceeding brought by reason of the fact that such person is or was a director or officer of the corporation, if such person acted in good faith and in a manner that he or she reasonably believed to be in, or not opposed to, the best interests of the corporation, and, with respect to any criminal action or proceeding, if he or she had no reasonable cause to believe his or her conduct was unlawful. In a derivative action (i.e., one brought by or on behalf

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of the corporation), indemnification may be provided only for expenses actually and reasonably incurred by any director or officer in connection with the defense or settlement of such an action or suit if such person acted in good faith and in a manner that he or she reasonably believed to be in, or not opposed to, the best interests of the corporation, except that no indemnification shall be provided if such person shall have been adjudged to be liable to the corporation, unless and only to the extent that the Delaware Chancery Court or the court in which the action or suit was brought shall determine that such person is fairly and reasonably entitled to indemnity for such expenses despite such adjudication of liability.

Pursuant to Section 102(b)(7) of the Delaware General Corporation Law, Article VI of our restated certificate of incorporation eliminates the liability of a director to us or our stockholders for monetary damages for such a breach of fiduciary duty as a director, except for liabilities arising:

- from any breach of the director's duty of loyalty to us or our stockholders;
- from acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- under Section 174 of the Delaware General Corporation Law; and
- from any transaction from which the director derived an improper personal benefit.

We will enter into indemnification agreements with our non-employee directors and certain officers, in addition to the indemnification provided for in our restated certificate of incorporation and restated by-laws, and intend to enter into indemnification agreements with any new directors and executive officers in the future. We have purchased and intend to maintain insurance on behalf of any person who is or was a director or officer against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

The foregoing discussion of our restated certificate of incorporation, restated by-laws, indemnification agreements, and Delaware law is not intended to be exhaustive and is qualified in its entirety by such restated certificate of incorporation, restated by-laws, indemnification agreements, or law.

Reference is made to our undertakings in Item 17 with respect to liabilities arising under the Securities Act. Reference is also made to the form of underwriting agreement filed as Exhibit 1.1 to this registration statement for the indemnification agreements between us and the underwriters.

Item 15. Recent Sales of Unregistered Securities.

Set forth below is information regarding shares of common stock, convertible preferred stock and warrants, and options granted, by us within the past three years that were not registered under the Securities Act. Also included is the consideration, if any, received by us for such shares, notes, warrants and options and information relating to the section of the Securities Act, or rule of the Securities and Exchange Commission, under which exemption from registration was claimed.

Original Issuances of Stock, Convertible Notes and Warrants

A. On January 8, 2009, we issued $25.0 million in aggregate principal amount of subordinated convertible promissory notes to 12 accredited investors. On December 11, 2009,

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we issued an additional $10.0 million in aggregate principal amount of subordinated convertible promissory notes to these accredited investors. Assuming an initial public offering price of $ per share, which is the mid-point of the price range set forth on the cover page of this prospectus, and that the closing occurs on , 2012, the $35.0 million in principal amount of the outstanding subordinated convertible promissory notes plus accrued interest thereon will convert into approximately shares of our common stock. In connection with these issuances of subordinated convertible promissory notes, we issued warrants to purchase an aggregate of 16,965,586 shares of common stock to these 12 accredited investors.

B. In connection with the subordinated convertible promissory note financing described in Item A above, on January 8, 2009, we issued 1,817,741 shares of Series A-1(A) convertible preferred stock upon conversion of certain outstanding shares of Series A-1 convertible preferred stock, we issued 4,645,339 shares of Series B-1 convertible preferred stock upon conversion of certain outstanding shares of Series B convertible preferred stock, and we issued 4,847,310 shares of Series C-1 convertible preferred stock upon conversion of certain outstanding shares of Series C convertible preferred stock.

C. On May 28, 2010, we issued $5.5 million in aggregate principal amount of senior subordinated convertible demand promissory notes to 16 accredited investors. On August 25, 2010 and November 19, 2010, we issued an additional $5.4 million and $4.1 million, respectively, in aggregate principal amount of senior subordinated convertible demand promissory notes to these accredited investors. Assuming an initial public offering price of $ per share, which is the mid-point of the price range set forth on the cover page of this prospectus, and that the closing occurs on , 2012, the $15.0 million in principal amount of the outstanding senior subordinated convertible demand promissory notes plus accrued interest thereon will convert into approximately shares of our common stock. In connection with these issuances of the senior subordinated convertible demand promissory notes, we issued warrants to purchase an aggregate of 7,270,967 shares of common stock to these 16 accredited investors.

D. In connection with the senior subordinated convertible demand promissory note financing described in Item C above, on May 28, 2010, we issued 3,786,961 shares of Series A-1(A) convertible preferred stock upon conversion of certain outstanding shares of Series A-1 convertible preferred stock, we issued 22,171,393 shares of Series B-1 convertible preferred stock upon conversion of certain outstanding shares of Series B convertible preferred stock, and we issued 23,620,366 shares of Series C-1 convertible preferred stock upon conversion of certain outstanding shares of Series C convertible preferred stock.

E. On January 12, 2011, January 18, 2011, January 20, 2011 and February 3, 2011, we issued $5.8 million in aggregate principal amount of senior convertible demand promissory notes to 11 accredited investors. On March 23, 2011, June 2, 2011 and December 28, 2011, we issued an additional $4.7 million, $4.0 million and $6.5 million, respectively, in aggregate principal amount of senior convertible demand promissory notes to 11, 12 and 12 accredited investors, respectively. Assuming an initial public offering price of $ per share, which is the mid-point of the price range set forth on the cover page of this prospectus, and that the closing occurs on , 2012, the $21.0 million in principal amount of the outstanding senior convertible demand promissory notes plus accrued interest thereon will convert into approximately shares of our common stock. In connection with these issuances of the senior convertible demand promissory notes, we issued warrants to purchase an aggregate of 10,195,205 shares of common stock to 13 accredited investors.

F. On February 17, 2012, we issued $15.0 million in aggregate principal amount of secured promissory notes and warrants to purchase an aggregate of 10,714,285 shares of common stock to one accredited investor.

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G. From January 1, 2009 through March 31, 2012, we issued an aggregate of 181,786 shares of common stock upon the exercise of stock options issued under our 2001 stock option and incentive plan, as amended.

Stock Option Grants

From January 1, 2009 through March 31, 2012, we granted stock options under our 2001 stock option and incentive plan, as amended, and 2011 equity incentive plan to purchase an aggregate of 15,546,695 shares of common stock, net of forfeitures, at a weighted-average exercise price of $0.075 per share, to certain of our employees, consultants and directors.

Securities Act Exemptions

We deemed the offers, sales and issuances of the securities described above under "—Original Issuances of Stock, Convertible Notes and Warrants" to be exempt from registration under the Securities Act in reliance on Section 4(2) of the Securities Act, including Regulation D and Rule 506 promulgated thereunder, relative to transactions by an issuer not involving a public offering. All purchasers of securities in transactions exempt from registration pursuant to Regulation D represented to us that they were accredited investors and were acquiring the shares for investment purposes only and not with a view to, or for sale in connection with, any distribution thereof and that they could bear the risks of the investment and could hold the securities for an indefinite period of time. The purchasers received written disclosures that the securities had not been registered under the Securities Act and that any resale must be made pursuant to a registration statement or an available exemption from such registration.

We deemed the grants of stock options described above under "—Stock Option Grants" to be exempt from registration under the Securities Act in reliance on Rule 701 of the Securities Act as offers and sales of securities under compensatory benefit plans and contracts relating to compensation in compliance with Rule 701. Each of the recipients of securities in any transaction exempt from registration either received or had adequate access, through employment, business or other relationships, to information about us.

All certificates representing the securities issued in the transactions described in this Item 15 included appropriate legends setting forth that the securities had not been offered or sold pursuant to a registration statement and describing the applicable restrictions on transfer of the securities. There were no underwriters employed in connection with any of the transactions set forth in this Item 15.

Item 16. Exhibits and Financial Statement Schedules.

(a) See the Exhibit Index on the page immediately preceding the exhibits for a list of exhibits filed as part of this registration statement on Form S-1, which Exhibit Index is incorporated herein by reference.

(b) Financial Statement Schedules

Financial Statement Schedules are omitted because the information is included in our financial statements or notes to those financial statements.

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Item 17. Undertakings

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the provisions described under Item 14 above, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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SIGNATURES

Pursuant to the requirements of the Securities Act, the Registrant certifies that it has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of New Haven, State of Connecticut, on April 13, 2012.

RIB-X PHARMACEUTICALS, INC.

By: /s/ Mark Leuchtenberger
Mark Leuchtenberger
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Mark Leuchtenberger **Mark Leuchtenberger**	President, Chief Executive Officer and Director (principal executive officer)	April 13, 2012
/s/ Robert A. Conerly **Robert A. Conerly**	Chief Financial Officer (principal financial and accounting officer)	April 13, 2012
* **George M. Milne, Jr.**	Chairman of the Board	April 13, 2012
* **C. Boyd Clarke**	Director	April 13, 2012
* **Cecilia Gonzalo**	Director	April 13, 2012
* **Jonathan S. Leff**	Director	April 13, 2012
* **Harry H. Penner, Jr.**	Director	April 13, 2012
*By: /s/ Mark Leuchtenberger **Mark Leuchtenberger** **Attorney-in-fact**		April 13, 2012

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EXHIBIT INDEX

Exhibit Number	Description of Exhibit
1.1*	Form of underwriting agreement.
3.1.1+	Seventh amended and restated certificate of incorporation of the Registrant.
3.1.2*	Certificate of amendment to the seventh amended and restated certificate of incorporation of the Registrant.
3.2*	Form of restated certificate of incorporation of the Registrant to be filed with the Secretary of State of the State of Delaware upon completion of this offering.
3.3+	By-laws of the Registrant.
3.4	Form of restated by-laws of the Registrant to be effective upon completion of this offering.
4.1+	Form of common stock certificate.
4.2+	Warrants to purchase common stock issued by the Registrant to Connecticut Innovations, Incorporated in June 2002 and September 2007 and related documents containing amendments thereto.
4.3+	Form of warrant to purchase Series C convertible preferred stock issued by the Registrant in connection with the 2007 financing.
4.4+	Form of warrant to purchase common stock issued by the Registrant in connection with the first closing of the 2009 financing.
4.5+	Form of warrant to purchase common stock issued by the Registrant in connection with the second closing of the 2009 financing.
4.6+	Form of warrant to purchase common stock issued by the Registrant in connection with the first closing of the 2010 financing.
4.7+	Form of warrant to purchase common stock issued by the Registrant in connection with the second and third closings of the 2010 financing.
4.8+	Form of warrant to purchase common stock issued by the Registrant in connection with the first closing of the 2011 financing.
4.9+	Form of warrant to purchase common stock issued by the Registrant in connection with the second, third and fourth closings of the 2011 financing.
4.10+	Form of warrant to purchase common stock issued by the Registrant in connection with the 2012 secured loans.
5.1*	Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., counsel to the Registrant, with respect to the legality of securities being registered.
10.1.1+@	2001 stock option and incentive plan, as amended.
10.1.2+@	Form of incentive stock option agreement granted under 2001 stock option and incentive plan, as amended.
10.1.3+@	Form of employee non-qualified stock option agreement granted under 2001 stock option and incentive plan, as amended.
10.1.4+@	Form of consulting non-qualified stock option agreement granted under 2001 stock option and incentive plan, as amended.
10.2.1@*	2011 equity incentive plan, as amended.

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10.2.2@*	Form of stock option agreement granted under 2011 equity incentive plan, as amended.
10.2.3@*	Form of restricted stock unit agreement under 2011 equity incentive plan, as amended.
10.3+	Form of subordinated convertible promissory note issued by the Registrant in connection with the first closing of the 2009 financing, which was subsequently amended by the senior subordinated convertible demand promissory note purchase agreement dated May 28, 2010 by and between the Registrant and the purchasers named therein listed below as Exhibit 10.8 and the senior convertible demand promissory note purchase agreement dated January 10, 2011 by and between the Registrant and the purchasers named therein, as amended, listed below as Exhibit 10.9.
10.4+	Form of subordinated convertible promissory note issued by the Registrant in connection with the second closing of the 2009 financing, which was subsequently amended by the senior subordinated convertible demand promissory note purchase agreement dated May 28, 2010 by and between the Registrant and the purchasers named therein listed below as Exhibit 10.8 and the senior convertible demand promissory note purchase agreement dated January 10, 2011 by and between the Registrant and the purchasers named therein, as amended, listed below as Exhibit 10.9.
10.5+	Form of senior subordinated convertible demand promissory note issued by the Registrant in connection with the first closing of the 2010 financing, which was subsequently amended by the senior convertible demand promissory note purchase agreement dated January 10, 2011 by and between the Registrant and the purchasers named therein, as amended, listed below as Exhibit 10.9.
10.6+	Form of senior subordinated convertible demand promissory note issued by the Registrant in connection with the second closing of the 2010 financing, which was subsequently amended by the senior convertible demand promissory note purchase agreement dated January 10, 2011 by and between the Registrant and the purchasers named therein, as amended, listed below as Exhibit 10.9.
10.7+	Form of senior subordinated convertible demand promissory note issued by the Registrant in connection with the third closing of the 2010 financing, which was subsequently amended by the senior convertible demand promissory note purchase agreement dated January 10, 2011 by and between the Registrant and the purchasers named therein, as amended, listed below as Exhibit 10.9.
10.8+	Senior subordinated convertible demand promissory note purchase agreement dated May 28, 2010 by and between the Registrant and the purchasers named therein, which amended the subordinated convertible promissory notes.
10.9+	Senior convertible demand promissory note purchase agreement dated January 10, 2011 by and between the Registrant and the purchasers named therein, as amended, which amended the senior subordinated convertible demand promissory notes and the subordinated convertible promissory notes.
10.10+	Form of senior convertible demand promissory note issued by the Registrant in connection with the first closing of the 2011 financing.
10.11+	Form of senior convertible demand promissory note issued by the Registrant in connection with the second closing of the 2011 financing.
10.12+	Form of senior convertible demand promissory note issued by the Registrant in connection with the third closing of the 2011 financing.
10.13+	Fourth amended and restated securityholders agreement dated January 10, 2011 by and among the Registrant and the securityholders named therein.

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10.14+	Third amended and restated registration rights agreement dated June 8, 2006 by and among the Registrant and the purchasers named therein, as amended.
10.15@	Employment agreement dated March 19, 2010 by and between the Registrant and Mark Leuchtenberger.
10.16@	Non-statutory stock option agreement dated as of March 19, 2010 by and between the Registrant and Mark Leuchtenberger.
10.17+@	Letter agreement dated May 1, 2002 by and between the Registrant and Robert A. Conerly.
10.18+@	Letter agreement dated December 2, 2001 by and between the Registrant and Erin M. Duffy, Ph.D.
10.19+@	Letter agreement dated September 17, 2007 by and between the Registrant and Jarrod Longcor.
10.20+@	Letter agreement dated December 8, 2010 by and between the Registrant and Colleen Wilson.
10.21@	2011 management bonus plan, as amended.
10.22@	2011 non-employee director bonus plan, as amended.
10.23@	Non-employee director compensation policy.
10.24+	Lease agreement dated March 8, 2002 by and between the Registrant and WE George Street L.L.C., as amended.
10.25#	License agreement dated March 21, 2005 by and between the Registrant and Medical Research Council, as amended.
10.26#	License agreement dated May 12, 2006 by and between the Registrant and Wakunaga Pharmaceutical Co., Ltd., as amended.
10.27#	Patent prosecution control agreement dated April 11, 2008 by and between the Registrant and Abbott Laboratories.
10.28#	Collaboration and license agreement dated June 28, 2011 by and between the Registrant and Sanofi.
10.29#	License and supply agreement dated November 30, 2010 by and between the Registrant and CyDex Pharmaceuticals, Inc. (a wholly owned subsidiary of Ligand Pharmaceuticals Incorporated).
10.30#+	License for the Analog program dated November 29, 2001 by and among the Registrant, Cemcomco and William L. Jorgensen.
10.31#	Yale exclusive license agreement dated December 6, 2001 by and between the Registrant and Yale University, as amended.
10.32@	Form of severance agreement.
10.33+	Form of senior convertible demand promissory note issued by the Registrant in connection with the fourth closing of the 2011 financing.
10.34+@	Letter agreement dated October 15, 2002 by and between the Registrant and Anthony D. Sabatelli, Ph.D., J.D.
10.35+	Loan and security agreement dated February 17, 2012 by and among the Registrant, Oxford Finance LLC, as collateral agent, and the lenders named therein, including secured promissory notes issued in connection therewith.

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10.36+	Subordination agreement dated February 17, 2012 by and among Oxford Finance LLC and the creditors named therein.
10.37@	Employee non-disclosure and developments agreement dated March 19, 2010 by and between the Registrant and Mark Leuchtenberger.
10.38@	Employee noncompetition, nondisclosure and developments agreement dated June 11, 2002 by and between the Registrant and Robert A. Conerly.
10.39@	Employee noncompetition, nondisclosure and developments agreement dated January 9, 2001 by and between the Registrant and Erin M. Duffy.
10.40@	Employee noncompetition, nondisclosure and developments agreement dated September 23, 2002 by and between the Registrant and Scott Hopkins.
10.41@	Employee noncompetition, nondisclosure and developments agreement dated December 9, 2002 by and between the Registrant and Anthony D. Sabatelli.
10.42@	Employee noncompetition, nondisclosure and developments agreement dated October 15, 2007 by and between the Registrant and Jarrod Longcor.
10.43@	Employee noncompetition, nondisclosure and developments agreement dated February 1, 2011 by and between the Registrant and Colleen Wilson.
10.44@	Letter agreement dated April 6, 2012 by and between the Registrant and Matthew A. Wikler, M.D.
10.45@	Employee noncompetition, nondisclosure and developments agreement dated April 2, 2012 by and between the Registrant and Matthew A. Wikler, M.D.
10.46@	Severance agreement dated March 28, 2012 by and between the Registrant and Matthew A. Wikler, M.D.
10.47@	Form of indemnification agreement by and between the Registrant and its directors and executive officers.
21.1+	Subsidiaries of the Registrant.
23.1	Consent of PricewaterhouseCoopers LLP.
23.2*	Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (see Exhibit 5.1).
24.1+	Powers of Attorney (see signature page to initial filing).

\+ *Previously filed.*

* *To be filed by amendment.*

\# *Confidential treatment has been requested for portions of this exhibit.*

@ *Denotes management compensation plan or contract.*