RXi Pharmaceuticals Corp
Form 424B3
August 08, 2013
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Registration No. 333-188539

PROSPECTUS

RXI Pharmaceuticals Corporation

3,765,230 Shares of Common Stock

This prospectus covers the sale of an aggregate of up to 3,765,230 shares (the **Shares**) of our common stock, $0.0001 par value per share (the **Common Stock**), by the selling stockholders identified in this prospectus (collectively with any such holder s transferee, pledgee, donee or successor, referred to below as the **Selling Stockholders**). The Shares were issued pursuant to a Securities Purchase Agreement dated as of March 6, 2013.

We will not receive any proceeds from the sale by the Selling Stockholders of the shares covered by this prospectus. We are paying the cost of registering the shares covered by this prospectus, as well as various related expenses. The shares included in this prospectus may be offered and sold directly by the Selling Stockholders in accordance with one or more of the methods described in the plan of distribution, which begins on page 19 of this prospectus. The Selling Stockholders are responsible for all selling commissions, transfer taxes and other costs related to the offer and sale of their shares under this prospectus. If required, the number of shares to be sold, the public offering price of those shares, the names of any broker-dealers and any applicable commission or discount will be included in a supplement to this prospectus, called a prospectus supplement.

Our Common Stock is quoted on the OTCQX tier of the OTC Markets Group Inc. under the symbol RXII. On August 7, 2013, the last reported sale price per share of our Common Stock on the OTCQX was $4.00. Our principal executive offices are located at 1500 West Park Drive, Suite 210, Westborough, Massachusetts 01581 and our telephone number is (508) 767-3861.

In reviewing this prospectus, you should carefully consider the matters described under the heading Risk Factors beginning on page 8.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is August 8, 2013.

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All references to **RXi**, **we**, **our**, **us** and similar terms in this prospectus refer to RXi Pharmaceuticals Corporation. All references to **Galena** i this prospectus refer to Galena Biopharma, Inc. and its wholly owned subsidiary, Apthera, Inc.

You should rely only on the information contained in this prospectus or a prospectus supplement. We have not authorized anyone to provide you with different information. You should not assume that the information contained in this prospectus is accurate as of any date other than the date on the front of this prospectus.

Some of the industry data contained in this prospectus are derived from data from various third-party sources. While we are not aware of any misstatements regarding any industry data presented herein, such data are subject to change based on various factors, including those discussed under the heading Risk Factors in this prospectus.

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PROSPECTUS SUMMARY

The following is a summary of some of the information contained in this prospectus. In addition to this summary, we urge you to read the entire prospectus carefully, especially the risks relating to our business and common stock discussed under the heading Risk Factors and our financial statements.

RXi Pharmaceuticals Corporation

Our Business

We are a biotechnology company focused on discovering, developing and commercializing innovative therapies based on our proprietary, new-generation RNA interference (**RNAi**) platform. Therapeutics that use RNAi have great promise because of their ability to silence, or down-regulate, the expression of a specific gene that may be over-expressed in a disease condition. Prior to September 8, 2011, our business was operated as an unincorporated division within Galena Biopharma, Inc. (**Galena** or the **Parent Company**), our former parent company. We were incorporated in Delaware as a wholly-owned subsidiary of Galena on September 8, 2011 in preparation for our planned spin-off from Galena, which was completed on April 27, 2012. Since that date, we have operated as an independent, publicly traded company.

By utilizing the expertise in RNAi and the comprehensive RNAi platform that we have established, we believe that we will be able to discover and develop lead compounds and progress them into and through clinical development for potential commercialization. Our proprietary therapeutic platform is comprised of novel RNAi compounds, referred to as rxRNA® compounds, that are distinct from, and we believe convey significant advantages over, classic siRNA (conventionally-designed small interfering RNA compounds), and offer many of the properties that we believe are important to the clinical development of RNAi-based drugs. We have developed a number of unique forms of rxRNA® compounds, all of which have been shown to be highly potent both *in vitro* and in preclinical *in vivo* models. These RNAi compounds include rxRNAori® and sd-rxRNA®, or self-delivering RNA. Based on our research, we believe that these different, novel siRNA configurations have various potential advantages for therapeutic use. These potential advantages include high potency, increased resistance to nucleases and modifications to eliminate off-target effects, and, in the case of the sd-rxRNA® compounds, access to cells and tissues with no additional formulation required, and, hence, reduced cell toxicity, which is known to be an issue with unmodified siRNAs.

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Our Therapeutic Pipeline

The following is a summary of our therapeutic development programs.

RXI-109 Clinical Development Program

Our lead clinical product candidate is RXI-109, a self-delivering RNAi compound (sd-rxRNA®) being developed for the reduction of dermal scarring in planned surgeries. RXI-109 is designed to reduce the expression of connective tissue growth factor (**CTGF**), a critical regulator of several biological pathways involved in scarring and fibrotic diseases. RXI-109 is being developed to prevent or reduce dermal scarring following surgery or trauma, as well as for the management of hypertrophic scars and keloids.

In June 2012, we initiated our first clinical trial of RXI-109, known as Study 1201. Study 1201 was designed to evaluate the safety and tolerability of several dose levels of RXI-109 in humans and may provide preliminary evidence of reduction of surgical scarring. Study 1201 enrolled fifteen subjects in a single-center, randomized, single-dose, double-blind, ascending dose, within-subject controlled study of RXI-109 for the treatment of incision scars, during which single, intradermal injections of escalating doses were administered. Subjects received an injection of RXI-109 in two separate areas on the abdomen and placebo injections in two other areas of the abdomen. RXI-109 was well tolerated by intradermal injection. No serious local or systemic side effects were observed in the subjects at any of the doses administered, and maximum systemic exposure after intradermal administration was assessed at approximately 5% of the total dose administered.

In December 2012, we initiated a second Phase 1 clinical trial with RXI-109, known as Study 1202. Study 1202 was designed to evaluate the safety of multi-dose administration of RXI-109 in healthy volunteers, including an evaluation of surrogate end points of clinical efficacy. Nine subjects (3 cohorts of 3 subjects each) were enrolled in a single-center, randomized, multi-dose, double-blind, ascending dose, within-subject controlled study of RXI-109 for the treatment of incision scars, during which subjects received intradermal injections of RXI-109. Subjects received injections of RXI-109 in four separate areas of the abdomen and placebo injections in four other areas of the abdomen, all of which were administered on multiple occasions over multiple weeks.

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While the primary focus of Studies 1201 and 1202 is to establish the safety and tolerability of RXI-109 in healthy subjects, there are also several surrogate end points being evaluated that may provide evidence of surgical scar prevention.

In Study 1201, RXI-109 has shown excellent safety and tolerability with ascending single doses. Study 1202 uses multiple doses and is designed to evaluate the safety and side effects of those doses, while also exploring possible effects of RXI-109 on scarring. In Study 1201, RXI-109 was found to be well tolerated and produced a statistically significant and dose dependent reduction of CTGF, a protein that may cause abnormal scarring when it is over-expressed in a wound. In Study 1202, multiple dermal injections were well tolerated in all doses, and treatment with RXI-109 resulted in dose-dependent silencing of CTGF mRNA in treated areas. In the second half of 2013, we expect to initiate Phase 2 clinical trials in which RXI-109 is administered following scar revision surgery.

As there are currently no Food and Drug Administration (**FDA**)-approved drugs to prevent scar formation, a therapeutic of this type could have great benefit for trauma and surgical patients, as a treatment during the surgical revision of existing unsatisfactory scars, and in the treatment, removal and inhibition of keloids (scars that extend beyond the original skin injury).

Future Novel Applications of RXI-109

Overexpression of CTGF is implicated in dermal scarring and fibrotic disease, and because of this, we believe that RXI-109 or other CTGF-targeting RNAi compounds may be able to treat other fibrotic indications, including pulmonary fibrosis, liver fibrosis, acute spinal injury, ocular scarring, joint fibrosis and vascular restenosis. If the current clinical trials of RXI-109 produce successful results in dermal anti-scarring, we may explore opportunities in these additional indications, as well as other possible dermatology applications (e.g., cutaneous scleroderma).

Other Development Programs

While focusing our efforts on our RXI-109 development program, we also intend to continue to advance additional development programs both on our own and through collaborations with academic and corporate third parties. Current programs in the discovery and preclinical stages include:

- a collaboration with Dr. Robert Brown at the University of Massachusetts Medical School (UMMS) for the treatment of amyotrophic lateral sclerosis (ALS);
- a Small Business Innovation Research (SBIR) grant to evaluate and develop sd-rxRNA® as potential therapeutics for the treatment of retinoblastoma; and
- a collaboration evaluating the potential to use a CTGF-targeting sd-rxRNA® as a therapeutic to reduce or inhibit retinal scarring, which often occurs as a consequence of some retinal diseases and following retinal detachment.

On March 1, 2013, we entered into an asset purchase agreement with OPKO Health, Inc. (**OPKO**) pursuant to which we have acquired substantially all of OPKO s RNAi-related assets, including patents, licenses, clinical and preclinical data and other assets. The assets purchased from OPKO are at an early stage of development, and we expect to commence development work with preclinical testing to identify potential lead compounds and targets.

Reverse Stock Split

On July 18, 2013, the Board of Directors of the Company approved a 1-for-30 reverse stock split of the Company s outstanding common stock, which was effected on July 23, 2013. Stockholders entitled to fractional

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shares as a result of the reverse stock split were entitled to receive a cash payment in lieu of receiving fractional shares. Shares of common stock underlying outstanding stock options and other equity instruments were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased in accordance with the terms of the agreements governing such securities. Shares of common stock reserved for issuance upon the conversion of the Company s Series A Preferred Stock were proportionately reduced and the respective conversion prices were proportionately increased. All share and per share amounts in this prospectus and in the financial statements have been retroactively adjusted for all periods presented to give effect to the reverse stock split, including reclassifying an amount equal to the reduction in par value to additional paid-in capital.

Market Opportunity

There are currently no FDA-approved therapeutics in the United States for the treatment and prevention of scars in the skin. However, there are over 42 million procedures in the United States each year that could benefit from a therapeutic that could successfully reduce or prevent scarring; thus, the market potential is quite large. In addition to cosmetic and reconstructive surgeries, medical interventions which could incorporate an anti-scarring agent include scarring that results from trauma, surgery or burns (especially relating to raised or hypertrophic scarring or contracture scarring), surgical revision of existing unsatisfactory scars, and in the treatment, removal and inhibition of keloids (scars which extend beyond the original skin injury).

Recent Business Developments

During 2012 and so far during 2013, we announced several important developments that are outlined below.

In April 2012, we completed the offering and sale of our Series A Convertible Preferred Stock. Pursuant to the Securities Purchase Agreement, dated as of September 24, 2011, by and among the Company, Galena, and Tang Capital Partners, LP (**TCP**) and RTW Investments, LLC (**RTW** and together with TCP, the **Investors**), on April 27, 2012, the Investors purchased a total of 9,500 shares of Series A Preferred Stock in consideration for $9.5 million, payable in cash and through the extinguishment of approximately $1 million of aggregate indebtedness owed to the Investors by the Company.

In April 2012, we completed our spinoff from Galena.

In May 2012, our common stock began trading under the symbol RXII on the OTCQB tier of the OTC Markets Group Inc.

In May 2012, we presented new preclinical data at the annual meeting of the Association for Research in Vision and Ophthalmology. The preclinical data showed a reduction of VEGF mRNA as a consequence of targeted reduction of CTGF in the rodent retina following intraocular administration of RXI-109.

In June 2012, we appointed two independent directors to our Board of Directors, Mr. Robert Bitterman and Mr. Keith Brownlie.

In June 2012, we initiated Study 1201, our first clinical trial with RXI-109. The trial was designed to evaluate the safety and tolerability of several single-dose levels of RXI-109 in humans and showed that RXI-109 significantly reduced the expression of CTGF protein in the wound area in a dose dependent manner 84 days after a single dose, suggesting a potent and long lasting effect on this key biomarker for abnormal scarring.

In July 2012, we appointed two new members to our Scientific Advisory Board (**SAB**), Dr. Jeannette Graf, M.D. and Dr. Leroy Young, M.D., and re-appointed Craig Mello, Ph.D., Nobel Laureate for the discovery of the RNAi mechanism, as Chairman of the SAB.

In September 2012, we received a Small Business Innovation Research grant from the National Cancer Institute (**NCI**) of the National Institutes of Health (**NIH**). The grant provides approximately $300,000 in funding for a project enabling the discovery and preclinical development of sd-rxRNAs ®

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as potential therapy for retinoblastoma, a pediatric ocular malignancy. The project will be completed in collaboration with Dr. David Cobrinik and colleagues at USC Children s Hospital, Los Angeles and the Memorial Sloan-Kettering Cancer Center.

In December 2012, we initiated Study 1202, our second Phase 1 clinical trial of RXI-109. Study 1202 was designed to evaluate the safety and tolerability of multi-dose administration of RXI-109 in healthy volunteers and may also provide preliminary evidence of reduction of surgical scarring. In this study, multiple dermal injections were well tolerated at all doses, and treatment with RXI-109 resulted in dose dependent silencing of CTGF mRNA in the treated areas 3 days after the third dose.

In March 2013, we entered into an asset purchase agreement with OPKO pursuant to which we have acquired substantially all of OPKO s RNAi-related assets, including patents, licenses, clinical and preclinical data and other assets.

In March 2013, we raised approximately $16.4 million in a financing led by OPKO Health, Inc. and Frost Gamma Investments Trust, a trust controlled by Phillip Frost, M.D.

In April 2013, we appointed two independent directors to our Board of Directors, Mr. Paul Dorman and Mr. Curtis Lockshin.

In June 2013, we announced positive results in our first double blind study in healthy volunteers with RXI-109.

In June 2013, our common stock began trading on the OTCQX tier of the OTC Markets Group Inc.

In July 2013, we completed a 1-for-30 reverse stock split of our outstanding common stock, which was effected on July 23, 2013.

In July 2013, we announced positive results in our second double blind study in healthy volunteers with RXI-109.

Risks Related to RXi

We face a number of risks and uncertainties, including the following:

We may be unable to achieve some or all of the benefits that we expect to achieve from our separation from Galena.

We may be unsuccessful in recruiting or retaining key employees.

We may not be able to obtain sufficient funding and may not be able to commercialize our product candidates.

The approach we are taking to discover and develop novel therapeutics using RNAi is unproven and may never lead to marketable products.

We may not be able to maintain the third-party relationships that are necessary to develop or commercialize some or all of our product candidates.

If our clinical trials do not demonstrate safety and efficacy in humans, our product candidates may not receive FDA approval and we will not be able to commercialize these candidates.

Even if we receive regulatory approval to market our product candidates, our product candidates may not be accepted commercially, which may prevent us from becoming profitable.

We are dependent on technologies we license, and if we lose the right to license such technologies or we fail to license new technologies in the future, our ability to develop new products would be harmed.

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Our common stock is newly listed for quotation on the OTCQX and an active trading market may not develop.

For further discussion of these and other risks and uncertainties that RXi faces, see the Risk Factors section beginning on page 8 of this prospectus.

Corporate Information

Our principal executive offices are located at 1500 West Park Drive, Suite 210, Westborough, Massachusetts 01581, and our telephone number is (508) 767-3861. Our Internet address is *www.rxipharma.com*. Our website and the information contained on that site, or connected to that site, is not part of or incorporated by reference into this prospectus.

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THE OFFERING

Common stock covered by this prospectus:	Up to 3,765,230 shares of Common Stock
Common stock outstanding as of July 1, 2013:	11,439,986 shares
Use of proceeds:	The Selling Stockholders will receive all of the proceeds from the sale of the shares offered for sale by them under this prospectus. We will not receive proceeds from the sale of the shares by the Selling Stockholders. See Use of Proceeds.
Risk factors:	The shares offered hereby involve a high degree of risk. See Risk Factors beginning on page 8.
Dividend policy:	We currently intend to retain any future earnings to fund the development activities and operation of our business. Therefore, we do not currently anticipate paying cash dividends on our Common Stock.
Trading Symbol:	Our Common Stock currently trades on the OTCQX under the symbol RXII .

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RISK FACTORS

You should carefully consider the risks described below and all of the other information contained in this prospectus in evaluating us and our common stock. If the following risks and uncertainties, or any one of them, develops into actual events, they could have a material adverse effect on our business, financial condition or results of operations. In that case, the trading price of our common stock could decline.

Risks Relating to RXi s Business and Industry

We are dependent on the success of our lead drug candidate, which may not receive regulatory approval or be successfully commercialized.

RXI-109, our first RNAi-based product candidate, targets CTGF and may have a variety of medical applications. We began Phase 1 clinical trials for RXI-109 in 2012 and are planning to begin Phase 2 clinical trials for RXI-109 in the second half of 2013. The FDA, however, may require additional information before we are allowed to commence our planned Phase 2 clinical trials, and such information may be costly to provide or cause potentially significant delays in development. There is no assurance that we will be able to successfully develop RXI-109 or any other product candidate.

We have no commercial products and currently generate no revenue from commercial sales or collaborations and may never be able to develop marketable products. The FDA or similar foreign governmental agencies must approve our products in development before they can be marketed. The process for obtaining FDA approval is both time-consuming and costly, with no certainty of a successful outcome. Before obtaining regulatory approval for the sale of any drug candidate, we must conduct extensive preclinical tests and successful clinical trials to demonstrate the safety and efficacy of our product candidates in humans. We have not yet shown safety or efficacy in humans for any RNAi-based product candidates, including RXI-109. A failure of any preclinical study or clinical trial can occur at any stage of testing. The results of preclinical and initial clinical testing of these products may not necessarily indicate the results that will be obtained from later or more extensive testing. Additionally, any observations made with respect to blinded clinical data are inherently uncertain as we cannot know which set of data come from patients treated with an active drug versus the placebo vehicle. Investors are cautioned not to rely on observations coming from blinded data and not to rely on initial clinical trial results as necessarily indicative of results that will be obtained in subsequent clinical trials.

A number of different factors could prevent us from obtaining regulatory approval or commercializing our product candidates on a timely basis, or at all.

We, the FDA or other applicable regulatory authorities or an institutional review board (**IRB**) may suspend clinical trials of a drug candidate at any time for various reasons, including if we or they believe the subjects or patients participating in such trials are being exposed to unacceptable health risks. Among other reasons, adverse side effects of a drug candidate on subjects or patients in a clinical trial could result in the FDA or other regulatory authorities suspending or terminating the trial and refusing to approve a particular drug candidate for any or all indications of use.

Clinical trials of a new drug candidate require the enrollment of a sufficient number of patients, including patients who are suffering from the disease or condition the drug candidate is intended to treat and who meet other eligibility criteria. Rates of patient enrollment are affected by many factors, and delays in patient enrollment can result in increased costs and longer development times.

Clinical trials also require the review and oversight of IRBs, which approve and continually review clinical investigations and protect the rights and welfare of human subjects. An inability or delay in obtaining IRB approval could prevent or delay the initiation and completion of clinical trials, and the FDA may decide not to consider any data or information derived from a clinical investigation not subject to initial and continuing IRB review and approval.

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Numerous factors could affect the timing, cost or outcome of our drug development efforts, including the following:

- Delays in filing or acceptance of initial drug applications for our product candidates;
- Difficulty in securing centers to conduct clinical trials;
- Conditions imposed on us by the FDA or comparable foreign authorities regarding the scope or design of our clinical trials;
- Problems in engaging IRBs to oversee trials or problems in obtaining or maintaining IRB approval of studies;
- Difficulty in enrolling patients in conformity with required protocols or projected timelines;
- Third-party contractors failing to comply with regulatory requirements or to meet their contractual obligations to us in a timely manner;
- Our drug candidates having unexpected and different chemical and pharmacological properties in humans than in laboratory testing and interacting with human biological systems in unforeseen, ineffective or harmful ways;
- The need to suspend or terminate clinical trials if the participants are being exposed to unacceptable health risks;
- Insufficient or inadequate supply or quality of our drug candidates or other necessary materials necessary to conduct our clinical trials;
- Effects of our drug candidates not being the desired effects or including undesirable side effects or the drug candidates having other unexpected characteristics;
- The cost of our clinical trials being greater than we anticipate;
- Negative or inconclusive results from our clinical trials or the clinical trials of others for similar drug candidates or inability to generate statistically significant data confirming the efficacy of the product being tested;
- Changes in the FDA s requirements for testing during the course of that testing;
- Reallocation of our limited financial and other resources to other clinical programs; and

Adverse results obtained by other companies developing similar drugs.

It is possible that none of the product candidates that we may develop will obtain the appropriate regulatory approvals necessary to begin selling them or that any regulatory approval to market a product may be subject to limitations on the indicated uses for which we may market the product. The time required to obtain FDA and other approvals is unpredictable, but often can take years following the commencement of clinical trials, depending upon the complexity of the drug candidate. Any analysis we perform of data from clinical activities is subject to confirmation and interpretation by regulatory authorities, which could delay, limit or prevent regulatory approval. Any delay or failure in obtaining required approvals could have a material adverse effect on our ability to generate revenue from the particular drug candidate.

We also are subject to numerous foreign regulatory requirements governing the conduct of clinical trials, manufacturing and marketing authorization, pricing and third-party reimbursement. The foreign regulatory approval process includes all of the risks associated with the FDA approval described above as well as risks attributable to the satisfaction of local regulations in foreign jurisdictions. Approval by the FDA does not assure approval by regulatory authorities outside of the United States.

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The approach we are taking to discover and develop novel therapeutics using RNAi is unproven and may never lead to marketable products.

RNA interference is a relatively new scientific discovery. Our RNAi technologies have been subject to only limited clinical testing. To date, no company has received regulatory approval to market therapeutics utilizing RNAi, and a number of clinical trials of RNAi technologies by other companies have been unsuccessful. The scientific evidence to support the feasibility of developing drugs based on these discoveries is both preliminary and limited. To successfully develop RNAi-based products, we must resolve a number of issues, including stabilizing the RNAi material and delivering it into target cells in the human body. We may spend large amounts of money trying to resolve these issues and may never succeed in doing so. In addition, any compounds that we develop may not demonstrate in patients the chemical and pharmacological properties ascribed to them in laboratory studies, and they may interact with human biological systems in unforeseen, ineffective or even harmful ways.

The FDA could impose a unique regulatory regime for RNAi therapeutics.

The substances we intend to develop may represent a new class of drug, and the FDA has not yet established any definitive policies, practices or guidelines in relation to these drugs. While we expect any product candidates that we develop will be regulated as a new drug under the Federal Food, Drug, and Cosmetic Act, the FDA could decide to regulate them or other products we may develop as biologics under the Public Health Service Act. The lack of policies, practices or guidelines may hinder or slow review by the FDA of any regulatory filings that we may submit. Moreover, the FDA may respond to these submissions by defining requirements that we may not have anticipated.

Even if we receive regulatory approval to market our product candidates, our product candidates may not be accepted commercially, which may prevent us from becoming profitable.

The RNAi product candidates that we are developing are based on new technologies and therapeutic approaches. RNAi products may be more expensive to manufacture than traditional small molecule drugs, which may make them more costly than competing small molecule drugs. Additionally, RNAi products do not readily cross the so-called blood brain barrier and, for various applications, are likely to require injection or implantation, which will make them less convenient to administer than drugs administered orally. Key participants in the pharmaceutical marketplace, such as physicians, medical professionals working in large reference laboratories, public health laboratories and hospitals, third-party payors and consumers may not accept products intended to improve therapeutic results based on RNAi technology. As a result, it may be more difficult for us to convince the medical community and third-party payors to accept and use our products or to provide favorable reimbursement. If medical professionals working with large reference laboratories, public health laboratories and hospitals choose not to adopt and use our RNAi technology, our products may not achieve broader market acceptance.

Additionally, although we expect that we will have intellectual property protection for our technology, certain governments may elect to deny patent protection for drugs targeting diseases with high unmet medical need (e.g., as in the case of HIV) and allow in their country internationally unauthorized generic competition. If this were to happen, our commercial prospects for developing any such drugs would be substantially diminished in these countries.

We are subject to competition and may not be able to compete successfully.

We believe numerous companies are investigating or plan to investigate a variety of proposed anti-scarring therapies in clinical trials. The companies include large and small pharmaceutical, chemical and biotechnology companies, as well as universities, government agencies and other private and public research organizations. Such companies include Renovo Group plc, CoDa Therapeutics, Inc., Sirnaomics, Inc., FirstString Research,

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Inc., Merz Pharmaceuticals, LLC, Capstone Therapeutics, Halscion, Inc., Garnet Bio Therapeutics, Inc., AkPharma Inc., Promedior, Inc., Kissei Pharmaceutical Co., Ltd., Eyegene, Derma Sciences, Inc., FibroGen, Inc. and Pharmaxon. In particular, Excaliard Pharmaceuticals, Inc., which has been acquired by Pfizer, Inc., has successfully advanced an anti-CTGF antisense oligonucleotide through several Phase 1 and Phase 2 trials and has demonstrated improved scar outcome over placebo.

We believe other companies working in the RNAi area, generally, include Alnylam Pharmaceuticals, Inc., Marina Biotech, Inc., Tacere Therapeutics, Inc., Benitec Limited, Silence Therapeutics plc, Quark Pharmaceuticals, Inc., Rosetta Genomics Ltd., Lorus Therapeutics, Inc., Tekmira Pharmaceuticals Corporation, Arrowhead Research Corporation, Regulus Therapeutics Inc. and Santaris, as well as a number of large pharmaceutical companies. Many other companies are pursuing non-RNAi-based therapies for one or more fibrotic disease indications, including ocular scarring or other indications that we may seek to pursue.

Most of these competitors have substantially greater research and development capabilities and financial, scientific, technical, manufacturing, marketing, distribution and other resources than we have, and we may not be able to successfully compete with them. In addition, even if we are successful in developing our product candidates, in order to compete successfully we may need to be first to market or to demonstrate that our RNAi based products are superior to therapies based on different technologies. A number of our competitors have already commenced clinical testing of RNAi product candidates and may be more advanced than we are in the process of developing products. If we are not first to market or are unable to demonstrate superiority, any products for which we are able to obtain approval may not be successful.

We are dependent on technologies we license, and if we lose the right to license such technologies or fail to license new technologies in the future, our ability to develop new products would be harmed.

Many patents in the RNAi field have already been exclusively licensed to third parties, including our competitors. If any of our existing licenses are terminated, the development of the products contemplated by the licenses could be delayed or terminated and we may not be able to negotiate additional licenses on acceptable terms, if at all, which would have a material adverse effect on our business.

We may be unable to protect our intellectual property rights licensed from other parties; our intellectual property rights may be inadequate to prevent third parties from using our technologies or developing competing products; and we may need to license additional intellectual property from others.

Therapeutic applications of gene silencing technologies, delivery methods and other technologies that we license from third parties are claimed in a number of pending patent applications, but there is no assurance that these applications will result in any issued patents or that those patents would withstand possible legal challenges or protect our technologies from competition. The United States Patent and Trademark Office and patent granting authorities in other countries have upheld stringent standards for the RNAi patents that have been prosecuted so far. Consequently, pending patents that we have licensed and those that we own may continue to experience long and difficult prosecution challenges and may ultimately issue with much narrower claims than those in the pending applications. Third parties may hold or seek to obtain additional patents that could make it more difficult or impossible for us to develop products based on RNAi technology without obtaining a license to such patents, which licenses may not be available on attractive terms, or at all.

In addition, others may challenge the patents or patent applications that we currently license or may license in the future or that we own and, as a result, these patents could be narrowed, invalidated or rendered unenforceable, which would negatively affect our ability to exclude others from using RNAi technologies described in these patents. There is no assurance that these patent or other pending applications or issued patents we license or that we own will withstand possible legal challenges. Moreover, the laws of some foreign countries may not protect our proprietary rights to the same extent as do the laws of the United States. Any patents issued to us or our licensors may not provide us with any competitive advantages, and there is no assurance that the

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patents of others will not have an adverse effect on our ability to do business or to continue to use its technologies freely. Our efforts to enforce and maintain our intellectual property rights may not be successful and may result in substantial costs and diversion of management time. Even if our rights are valid, enforceable and broad in scope, competitors may develop products based on technology that is not covered by our licenses or patents or patent application that we own.

We have received a letter from Alnylam Pharmaceuticals, Inc. (**Alnylam**), claiming that we require access to Alnylam s patent and patent applications and demanding that we stop engaging in unspecified alleged infringing activities unless we obtain a license from Alnylam. We understand that other companies working in the RNAi area have received similar letters from Alnylam. Although we believe that our current and planned activities do not infringe any valid patent rights of Alnylam, there is no assurance that we will not need to alter our development candidates or products or obtain a license to Alnylam s rights to avoid any such infringement. Interactions with senior management of Alnylam at several occasions have not resulted in material indications of breach, but this does not exclude an unexpected claim by that company.

There is no guarantee that future licenses will be available from third parties for our product candidates on timely or satisfactory terms, or at all. To the extent that we are required and are able to obtain multiple licenses from third parties to develop or commercialize a product candidate, the aggregate licensing fees and milestones and royalty payments made to these parties may materially reduce our economic returns or even cause us to abandon development or commercialization of a product candidate.

Our success depends upon our ability to obtain and maintain intellectual property protection for our products and technologies.

The applications based on RNAi technologies claim many different methods, compositions and processes relating to the discovery, development, delivery and commercialization of RNAi therapeutics. Because this field is so new, very few of these patent applications have been fully processed by government patent offices around the world, and there is a great deal of uncertainty about which patents will issue, when, to whom and with what claims. Although we are not aware of any blocking patents or other proprietary rights, it is likely that there will be significant litigation and other proceedings, such as interference and opposition proceedings in various patent offices, relating to patent rights in the RNAi field. It is possible that we may become a party to such proceedings.

We may not be able to obtain sufficient financing and may not be able to develop our product candidates.

On March 6, 2013, we entered into a securities purchase agreement (the **Common Stock SPA**) pursuant to which we agreed to issue 3,753,230 shares of our common stock at a price of $4.35 per share (after giving effect to the reverse stock split effected on July 23, 2013) (the **March 2013 Offering**). With the proceeds from our March 2013 Offering, we believe that we have sufficient working capital to fund our currently planned operations, including the planned Phase 2 program for RXI-109, into fiscal 2015. However, in the future, we may need to incur debt or issue equity in order to fund our planned expenditures as well as to make acquisitions and other investments. We cannot assure you that debt or equity financing will be available to us on acceptable terms or at all. If we cannot, or are limited in the ability to, incur debt, issue equity or enter into strategic collaborations, we may be unable to fund discovery and development of our product candidates, address gaps in our product offerings or improve our technology.

We anticipate that we will need to raise substantial amounts of money to fund a variety of future activities integral to the development of our business, which may include but are not limited to the following:

To conduct research and development to successfully develop our RNAi technologies;

To obtain regulatory approval for our products;

To file and prosecute patent applications and to defend and assess patents to protect our technologies;

To retain qualified employees, particularly in light of intense competition for qualified scientists;

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To manufacture products ourselves or through third parties;

To market our products, either through building our own sales and distribution capabilities or relying on third parties; and

To acquire new technologies, licenses or products.

In addition, our common stock is not a covered security for purposes of the Securities Act of 1933, as amended (the **Securities Act**). The term covered security applies to securities exempt from state registration because of their oversight by federal authorities and national regulatory bodies, such as national securities exchanges, pursuant to Section 18 of the Securities Act. Because our common stock is not a covered security, the sale of our shares may be subject to registration in various states. This could make it more difficult or costly to conduct an equity financing, which could have a material adverse effect on our business.

We cannot assure you that any needed financing will be available to us on acceptable terms or at all. If we cannot obtain additional financing in the future, our operations may be restricted and we may ultimately be unable to continue to develop and potentially commercialize our product candidates.

Future financing may be obtained through, and future development efforts may be paid for by, the issuance of debt or equity, which may have an adverse effect on our stockholders or may otherwise adversely affect our business.

If we raise funds through the issuance of debt or equity, any debt securities or preferred stock issued will have rights, preferences and privileges senior to those of holders of our common stock in the event of a liquidation. In such event, there is a possibility that once all senior claims are settled, there may be no assets remaining to pay out to the holders of common stock. In addition, if we raise funds through the issuance of additional equity, whether through private placements or public offerings, such an issuance would dilute your ownership in us.

The terms of debt securities may also impose restrictions on our operations, which may include limiting our ability to incur additional indebtedness, to pay dividends on or repurchase our capital stock, or to make certain acquisitions or investments. In addition, we may be subject to covenants requiring us to satisfy certain financial tests and ratios, and our ability to satisfy such covenants may be affected by events outside of our control.

We expect to continue to incur significant research and development expenses, which may make it difficult for us to attain profitability, and may lead to uncertainty as to our ability to continue as a going concern.

We expend substantial funds to develop our RNAi technologies, and additional substantial funds will be required for further research and development, including preclinical testing and clinical trials of any product candidates, and to manufacture and market any products that are approved for commercial sale. Because the successful development of our products is uncertain, we are unable to precisely estimate the actual funds we will require to develop and potentially commercialize them. In addition, we may not be able to generate enough revenue, even if we are able to commercialize any of our product candidates, to become profitable.

If we are unable to achieve or sustain profitability or to secure additional financing, we may not be able to meet our obligations as they come due, raising substantial doubts as to our ability to continue as a going concern. Any such inability to continue as a going concern may result in our common stock holders losing their entire investment. There is no guarantee that we will become profitable or secure additional financing. Our financial statements contemplate that we will continue as a going concern and do not contain any adjustments that might result if we were unable to continue as a going concern. Changes in our operating plans, our existing and anticipated working capital needs, the acceleration or modification of our expansion plans, increased expenses, potential acquisitions or other events will all affect our ability to continue as a going concern.

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We will rely upon third parties for the manufacture of our clinical product candidates.

We do not have the facilities or expertise to manufacture supplies of any of our potential product candidates for clinical trials. Accordingly, we will be dependent upon contract manufacturers for these supplies. We currently obtain supplies for RXI-109 from a single supplier, Agilent Technologies, Nucleic Acid Solutions Division. If for any reason we are unable to obtain RXI-109 from this supplier, we would have to seek to obtain it from another major oligonucleotide manufacturer. There is no assurance that we will be able to timely secure needed supply arrangements on satisfactory terms, or at all. Our failure to secure these arrangements as needed could have a material adverse effect on our ability to complete the development of our product candidates or, if we obtain regulatory approval for our product candidates, to commercialize them.

We may not be able to establish or maintain the third-party relationships that are necessary to develop or potentially commercialize some or all of our product candidates.

We expect to depend on collaborators, partners, licensees, clinical research organizations and other third parties to support our discovery efforts, to formulate product candidates, to manufacture our product candidates and to conduct clinical trials for some or all of our product candidates. We cannot guarantee that we will be able to successfully negotiate agreements for or maintain relationships with collaborators, partners, licensees, clinical investigators, vendors and other third parties on favorable terms, if at all. Our ability to successfully negotiate such agreements will depend on, among other things, potential partners evaluation of the superiority of our technology over competing technologies, the quality of the preclinical and clinical data that we have generated and the perceived risks specific to developing our product candidates. If we are unable to obtain or maintain these agreements, we may not be able to clinically develop, formulate, manufacture, obtain regulatory approvals for or commercialize our product candidates. We cannot necessarily control the amount or timing of resources that our contract partners will devote to our research and development programs, product candidates or potential product candidates, and we cannot guarantee that these parties will fulfill their obligations to us under these arrangements in a timely fashion. We may not be able to readily terminate any such agreements with contract partners even if such contract partners do not fulfill their obligations to us.

We are subject to potential liabilities from clinical testing and future product liability claims.

If any of our future products are alleged to be defective, they may expose us to claims for personal injury by patients in clinical trials of our products. If our products are approved by the FDA, users may claim that such products caused unintended adverse effects. We will seek to obtain clinical trial insurance for clinical trials that we conduct, as well as liability insurance for any products that we market. There is no assurance that we will be able to obtain insurance in the amounts we seek, or at all. We anticipate that licensees who develop our products will carry liability insurance covering the clinical testing and marketing of those products. There is no assurance, however, that any insurance maintained by us or our licensees will prove adequate in the event of a claim against us. Even if claims asserted against us are unsuccessful, they may divert management s attention from our operations and we may have to incur substantial costs to defend such claims.

Any drugs we develop may become subject to unfavorable pricing regulations, third-party reimbursement practices or healthcare reform initiatives, which could have a material adverse effect on our business.

If approved, we intend to sell our products to physicians, plastic surgeons and dermatologists, as well as hospitals, oncologists and clinics that receive reimbursement for the healthcare services they provide to their patients from third-party payors, such as Medicare, Medicaid and other domestic and international government programs, private insurance plans and managed care programs. Most third-party payors may deny reimbursement if they determine that a medical product was not used in accordance with cost-effective treatment methods, as determined by the third-party payor, was used for an unapproved indication or if they believe the cost of the product outweighs its benefits. Third-party payors also may refuse to reimburse for experimental procedures and devices. Furthermore, because our programs are still in development, we are unable at this time to determine their cost-effectiveness and the level or method of reimbursement for them. Increasingly, the third-party payors

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who reimburse patients are requiring that drug companies provide them with predetermined discounts from list prices, and are challenging the prices charged for medical products. If the price we are able to charge for any products we develop is inadequate in light of our development and other costs, our profitability could be adversely affected.

We currently expect that any drugs we develop may need to be administered under the supervision of a physician. Under currently applicable law, drugs that are not usually self-administered may be eligible for coverage by the Medicare program if:

- They are incidental to a physician s services;
- They are reasonable and necessary for the diagnosis or treatment of the illness or injury for which they are administered according to accepted standard of medical practice;
- They are not excluded as immunizations; and
- They have been approved by the FDA.

Insurers may refuse to provide insurance coverage for newly approved drugs, or insurance coverage may be delayed or be more limited than the purpose for which the drugs are approved by the FDA. Moreover, eligibility for insurance coverage does not imply that any drug will be reimbursed in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Interim payments for new drugs, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement may be based on payments for other services and may reflect budgetary constraints or imperfections in Medicare data. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement rates. Our inability to promptly obtain coverage and profitable reimbursement rates from both government-funded and private payors for new drugs that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to develop products and our overall financial condition.

Additionally, third-party payors are increasingly attempting to contain healthcare costs by limiting both coverage and the level of reimbursement for medical products and services. Levels of reimbursement may decrease in the future, and future legislation, regulation or reimbursement policies of third-party payors may adversely affect the demand for and price levels of our products. If our customers are not reimbursed for our products, they may reduce or discontinue purchases of our products, which could have a material adverse effect on our business, financial condition and results of operations.

Comprehensive healthcare reform legislation, which became law in 2010, could adversely affect our business and financial condition. Among other provisions, the legislation provides that a biosimilar product may be approved by the FDA on the basis of analytical tests and certain clinical studies demonstrating that such product is highly similar to an existing, approved product and that switching between an existing product and the biosimilar product will not result in diminished safety or efficacy. This abbreviated regulatory approval process may result in increased competition if we are able to bring a product to market. The legislation also includes more stringent compliance programs for companies in various sectors of the life sciences industry with which we may need to comply and enhanced penalties for non-compliance with the new healthcare regulations. Complying with new regulations may divert management resources, and inadvertent failure to comply with new regulations may result in penalties being imposed on us.

Some states and localities have established drug importation programs for their citizens, and federal drug import legislation has been introduced in Congress. The Medicare Prescription Drug Plan legislation, which became law in 2003, required the Secretary of Health and Human Services to promulgate regulations for drug reimportation from Canada into the United States under some circumstances, including when the drugs are sold

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at a lower price than in the United States. The Secretary, however, retained the discretion not to implement a drug reimportation plan if he finds that the benefits do not outweigh the costs, and has so far declined to approve a reimportation plan. Proponents of drug reimportation may attempt to pass legislation that would directly allow reimportation under certain circumstances. Legislation or regulations allowing the reimportation of drugs, if enacted, could decrease the price we receive for any products that we may develop and adversely affect our future revenues and prospects for profitability.

Even if we obtain regulatory approvals, our marketed drugs will be subject to ongoing regulatory review. If we fail to comply with continuing U.S. and foreign regulations, we could lose our approvals to market drugs and our business would be materially and adversely affected.

Following regulatory approval of any drugs we may develop, we will remain subject to continuing regulatory review, including the review of adverse drug experiences and clinical results that are reported after our drug products are made available to patients. This would include results from any post-marketing tests or vigilance required as a condition of approval. The manufacturer and manufacturing facilities we use to make any of our drug products will also be subject to periodic review and inspection by the FDA. The discovery of any new or previously unknown problems with the product, manufacturer or facility may result in restrictions on the drug or manufacturer or facility, including withdrawal of the drug from the market. We would continue to be subject to the FDA requirements governing the labeling, packaging, storage, advertising, promotion, recordkeeping and submission of safety and other post-market information for all of our product candidates, even those that the FDA had approved. If we fail to comply with applicable continuing regulatory requirements, we may be subject to fines, suspension or withdrawal of regulatory approval, product recalls and seizures, operating restrictions and other adverse consequences.

If we fail to attract, hire and retain qualified personnel, we may not be able to design, develop, market or sell our products or successfully manage our business.

Our business prospects are dependent on our management team and all of our employees. The loss of any of our key employees, including Drs. Cauwenbergh and Pavco, who serve as our Chief Executive Officer and our Chief Development Officer, respectively, or our inability to identify, attract, retain and integrate additional qualified key personnel, could make it difficult for us to manage our business successfully and achieve our business objectives.

Competition for skilled research, product development, regulatory and technical personnel is intense, and we may not be able to recruit and retain the personnel we need. The loss of the services of any key research, product development, regulatory and technical personnel, or our inability to hire new personnel with the requisite skills, could restrict our ability to develop our product candidates.

Risks Relating to Our Common Stock

Our common stock is considered a penny stock and does not qualify for exemption from the penny stock restrictions, which may make it more difficult for you to sell your shares.

Our common stock is classified as a penny stock by the Securities and Exchange Commission (**SEC**) and is subject to rules adopted by the SEC regulating broker-dealer practices in connection with transactions in penny stocks. The SEC has adopted regulations that define a penny stock to be any equity security that has a market price of less than $5.00 per share, subject to certain exceptions, and that is not listed for trading on a national securities exchange. For any transaction involving a penny stock, unless exempt, these rules require delivery, prior to any transaction in a penny stock, of a disclosure schedule relating to the penny stock market. Disclosure is also required to be made about current quotations for the securities and about commissions payable to both the broker-dealer and the registered representative. Finally, broker-dealers must send monthly statements to purchasers of penny stocks disclosing recent price information for the penny stock held in the account and information on the limited market in penny stocks. As a result of our shares of common stock being subject to the rules on penny stocks, the liquidity of our common stock may be adversely affected.

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Stocks that trade on the OTC markets, such as ours, are often thinly traded, which means that investors may be unable to sell at or near ask prices or in a timely manner as compared to more actively traded securities.

Our common stock is traded on the OTCQX market. Stocks that trade on this or other OTC markets are often thinly traded, meaning the number of persons interested in purchasing the securities at or near bid prices at any given time may be relatively small or non-existent. Although we have had periods of relatively high liquidity in our stock, this may not be sustained, in particular due to the fact that we are a small company and are relatively unknown to stock analysts, stock brokers, institutional investors and others in the investment community that generate or influence sales volume. As a consequence, there may be periods of several days or more when trading activity in our shares is minimal as compared to a seasoned issuer, which has a large and steady volume of trading activity that will generally support continuous sales without an adverse effect on share price. We cannot assure you that a broader or more active public trading market for our common stock will develop or be sustained, or that current trading levels will be sustained. The price at which you purchase our common stock may not be indicative of the price that will prevail in the trading market. You may be unable to sell your common stock at or above your purchase price if at all, which may result in substantial losses to you.

We have issued preferred stock in the past and possibly may issue more preferred stock in the future, and the terms of the preferred stock may reduce the value of our common stock.

We are authorized to issue up to 10,000,000 shares of preferred stock in one or more series. There were 9,771 shares of our Series A Preferred Stock issued and outstanding at June 30, 2013. Our board of directors may determine the terms of future preferred stock offerings without further action by our stockholders. The issuance of our preferred stock could affect your rights or reduce the value of our outstanding common stock. In particular, rights granted to holders of preferred stock may include voting rights, preferences as to dividends and liquidation, conversion and redemption rights and restrictions on our ability to merge with or sell our assets to a third party. Additionally, the sale of a significant number of shares of common stock received upon conversion of our Series A Preferred Stock could cause the market price of our common stock to decline.

We may acquire other businesses or form joint ventures that may be unsuccessful and could dilute your ownership interest in our company.

As part of our business strategy, we may pursue future acquisitions of other complementary businesses and technology licensing arrangements. We also may pursue strategic alliances. We have no experience with respect to acquiring other companies and limited experience with respect to the formation of collaborations, strategic alliances and joint ventures. We may not be able to integrate such acquisitions successfully into our existing business, and we could assume unknown or contingent liabilities. We also could experience adverse effects on our reported results of operations from acquisition related charges, amortization of acquired technology and other intangibles and impairment charges relating to write-offs of goodwill and other intangible assets from time to time following the acquisition. Integration of an acquired company requires management resources that otherwise would be available for ongoing development of our existing business. We may not realize the anticipated benefits of any acquisition, technology license or strategic alliance. For example, pursuant to the OPKO Asset Purchase, we acquired substantially all of OPKO s RNAi-related assets, including patents, licenses, clinical and preclinical data and other assets. These assets are at an early stage of development and will require a significant investment of time and capital if we are to be successful in developing them. There is no assurance that we will be successful in developing the assets that we acquired in the OPKO Asset Purchase, and a failure to successfully develop these assets could diminish our prospects. Further, if we fail to use commercially reasonable efforts to develop the OPKO assets for at least one clinical indication, OPKO would have the right, after a 180-day cure period, to reacquire the assets from us without any consideration.

To finance future acquisitions, we may choose to issue shares of our common stock or preferred stock as consideration, which would dilute your ownership interest in us. Alternatively, it may be necessary for us to raise additional funds through public or private financings. Additional funds may not be available on terms that are

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favorable to us and, in the case of equity financings, may result in dilution to our stockholders. Any future acquisitions by us also could result in large and immediate write-offs, the incurrence of contingent liabilities or amortization of expenses related to acquired intangible assets, any of which could harm our operating results.

The holders of our Series A Preferred Stock may be able to delay or prevent a change in corporate control that would be beneficial to our stockholders.

The holders of our Series A Preferred Stock have the right to convert at any time their shares of our Series A Preferred Stock into shares of our common stock, except to the extent that the holder would own more than 9.999% of our common stock outstanding immediately after giving effect to the conversion. Although our Series A Preferred Stock generally is non-voting stock, the holders of our Series A Preferred Stock will be entitled to vote on an as-converted basis together with our common stock with respect to any transaction that would constitute a deemed liquidation event under our charter, including any proposed merger or sale of Company. Although the Series A Preferred Stock holders have no rights to influence our day-to-day operations or even vote on the election of directors, by virtue of their voting rights in the context of a deemed liquidation event, the holders of our Series A Preferred Stock will be able to significantly influence the outcome of the vote on any such extraordinary transaction that is required to be submitted to a vote of our stockholders. This right may adversely affect the market price of our common stock by:

- Delaying, deferring or preventing a change in control of our company;
- Impeding a merger, consolidation, takeover or other business combination involving our company; or
- Discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of our company in a hostile transaction.

We do not anticipate paying cash dividends in the foreseeable future.

Our business requires significant funding. We currently plan to invest all available funds and future earnings in the development and growth of our business and do not anticipate paying any cash dividends on our common stock in the foreseeable future. As a result, capital appreciation, if any, of our common stock will be your sole source of potential gain for the foreseeable future.

Provisions of our certificate of incorporation and bylaws and Delaware law might discourage, delay or prevent a change of control of our company or changes in our management and, as a result, depress the trading price of our common stock.

Our certificate of incorporation and bylaws contain provisions that could discourage, delay or prevent a change of control of our company or changes in our management that the stockholders of our company may deem advantageous. These provisions:

- Authorize the issuance of blank check preferred stock that our board could issue to increase the number of outstanding shares and to discourage a takeover attempt;
- Prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- Provide that the board of directors is expressly authorized to adopt, alter or repeal our bylaws; and
- Establish advance notice requirements for nominations for election to our board or for proposing matters that can be acted upon by stockholders at stockholder meetings.

Although we believe these provisions collectively provide for an opportunity to receive higher bids by requiring potential acquirers to negotiate with our board, they would apply even if the offer may be considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management team by making it more difficult for stockholders to replace members of our board, which is responsible for appointing the members of our management.

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Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by words such as intends, believes, anticipates, indicates, plans, intends, expects, sugge should, potential, designed to, will and similar references. Such statements include, but are not limited to, statements about: our ability to successfully develop RXI-109 and our other product candidates; the future success of our clinical trials with RXI-109; the timing for the commencement and completion of clinical trials; and our ability to implement cost-saving measures. Forward-looking statements are neither historical facts nor assurances of future performance. These statements are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others: the risk that our clinical trials with RXI-109 may not be successful in evaluating the safety and tolerability of RXI-109 or providing preliminary evidence of surgical scar reduction; the successful and timely completion of clinical trials; uncertainties regarding the regulatory process; the availability of funds and resources to pursue our research and development projects, including our clinical trials with RXI-109; general economic conditions; and those identified in this prospectus under the heading Risk Factors and in other filings we periodically make with the Securities and Exchange Commission. Forward-looking statements contained in this prospectus speak as of the date hereof and we do not undertake to update any of these forward-looking statements to reflect a change in its views or events or circumstances that occur after the date of this prospectus.

PLAN OF DISTRIBUTION

The Shares offered by this prospectus may be sold by the Selling Stockholders. Such sales may be made in one or more transactions at fixed prices that may be changed, at market prices prevailing at the time of sale, at prices related to such prevailing market prices, or at negotiated prices, and may be made in the over-the-counter market or any exchange or trading facility on which our Common Stock is traded, or otherwise. In addition, the Selling Stockholders may sell some or all of the Shares through:

a block trade in which a broker-dealer may resell a portion of the block, as principal, in order to facilitate the transaction;

purchases by a broker-dealer, as principal, and resale by the broker-dealer for its account;

ordinary brokerage transactions and transactions in which a broker solicits purchasers;

in negotiated transactions;

in a combination of any of the above methods of sale; or

any other method permitted under applicable law.

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The Selling Stockholders may also engage in short sales against the box, puts and calls and other hedging transactions in the Shares or derivatives of the Shares and may sell or deliver the Shares in connection with these trades. For example, the Selling Stockholders may:

- enter into transactions involving short sales of our Common Stock by broker-dealers;
- sell our Common Stock short themselves and redeliver any portion of the Shares to close out their short positions;
- enter into option or other types of transactions that require the Selling Stockholder to deliver Shares to a broker-dealer, who will then resell or transfer the Shares under this prospectus; or
- loan or pledge Shares to a broker-dealer, who may sell the loaned Shares or, in the event of default, sell the pledged Shares.

There is no assurance that any of the Selling Stockholders will sell any or all of the Shares offered by them.

The Selling Stockholders may negotiate and pay broker-dealers commissions, discounts or concessions for their services. Broker-dealers engaged by the Selling Stockholders may allow other broker-dealers to participate in resales. However, the Selling Stockholders and any broker-dealers involved in the sale or resale of the Shares may qualify as underwriters within the meaning of the Section 2(a)(11) of the Securities Act. In addition, the broker-dealers commissions, discounts or concessions may qualify as underwriters compensation under the Securities Act. The Selling Stockholders have advised us that there is no underwriter or coordinating broker acting in connection with the proposed sale of the shares by the Selling Stockholders.

One of the Selling Stockholders, Adam Malamed, is Chief Operating Officer of Ladenburg Thalmann Financial Services (**LTFS**). LTFS has four subsidiaries that are broker dealers: Ladenburg Thalmann & Co. (**LTC**), Investacorp Inc., Triad Advisors, Inc. and Securities America, Inc. Mr. Malamed acquired the shares that he is selling pursuant to this prospectus in his capacity as a personal investor. One of the Selling Stockholders, David Rosenberg is co-Chief Executive Officer of LTC. Mr. Rosenberg acquired the shares that he is selling pursuant to this prospectus in his capacity as a personal investor. One of the Selling Stockholders, Frost Gamma Investments Trust, an entity controlled by Dr. Phillip Frost, owns more than 10% of LTFS. Frost Gamma Investments Trust acquired the shares that it is selling pursuant to this prospectus in its capacity as a private investor. Howard M. Lorber is a partner of Lorber Alpha II LP, one of the Selling Stockholders. Mr. Lorber is a director of LTFS and acquired the shares that he is selling pursuant to this prospectus in his capacity as a personal investor. Jacqueline Simkin has voting and dispositive power over the shares purchased by the Jacqueline Simkin Revocable Trust as Amended and Restated 12/16/03, one of the Selling Stockholders. Ms. Simkin is a director of LTFS and the Jacqueline Simkin Revocable Trust as Amended and Restated 12/16/03 acquired the shares it is selling pursuant to this prospectus in its capacity as an investor. Mark Zeitchick is a manager of MZ Trading LLC, one of the Selling Stockholders. Mr. Zeitchick is an Executive Vice President and a director of LTFS and MZ Trading LLC acquired the shares that it is selling pursuant to this prospectus in its capacity as an investor. One of the Selling Stockholders, Richard Lampen, is President, Chief Executive Officer and a director of LTFS. Mr. Lampen acquired the shares that he is selling pursuant to this prospectus in his capacity as a personal investor. One of the Selling Stockholders, Richard Rosenstock, is a director of LTFS and a registered representative of LTC. Mr. Rosenstock acquired the shares that he is selling pursuant to this prospectus in his capacity as a personal investor.

The Selling Stockholders will be subject to the prospectus delivery requirements of the Securities Act, unless exempted therefrom.

In addition to selling the Shares under this prospectus, the Selling Stockholders may:

- transfer their Shares in other ways not involving market makers or established trading markets, including, but not limited to, directly by gift, distribution, privately negotiated transactions in compliance with applicable law or other transfer; or

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sell their Shares under Rule 144 of the Securities Act rather than under this prospectus, if the transaction meets the requirements of Rule 144. Each Selling Stockholder will bear all expenses with respect to the offering of the Shares by such Selling Stockholder. Each Selling Stockholder will be subject to the applicable provisions of the Securities Exchange Act of 1934, as amended (the **Exchange Act**) and the associated rules and regulations under the Exchange Act, including Regulation M, which provisions may limit the timing of purchases and sales of shares of our Common Stock by the Selling Stockholders.

The Selling Stockholders may from time to time pledge or grant a security interest in some or all of the Shares owned by them and, if they default in the performance of their secured obligations, the pledges or secured parties may offer and sell the Shares from time to time under this prospectus after an amendment has been filed under Rule 424(b) or other applicable provision of the Securities Act amending the list of Selling Stockholders to include the pledge, transferee or other successors in interest as Selling Stockholders under this prospectus.

The Selling Stockholders also may transfer the Shares in other circumstances, in which case the respective pledgees, donees, transferees or other successors in interest may be the selling beneficial owners for purposes of this prospectus and may sell such Shares from time to time under this prospectus after an amendment or supplement has been filed under Rule 424(b) or other applicable provision of the Securities Act amending or supplementing the list of Selling Stockholders to include the pledge, transferee or other successors in interest as Selling Stockholders under this prospectus.

We will make copies of this prospectus available to the Selling Stockholders and have informed them of the need to deliver copies of this prospectus to purchasers at or prior to the time of any sale of the Shares.

We will bear all costs, expenses and fees in connection with the registration of the Shares. The Selling Stockholders will bear all commissions and discounts, if any, attributable to the resale of the Shares. The Selling Stockholders may agree to indemnify any broker-dealer or agent that participates in transactions involving sales of the Shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the Selling Stockholders against certain liabilities, including liabilities under the Securities Act, the Exchange Act and state securities laws, relating to the registration of the Shares offered by this prospectus.

Once sold under the registration statement of which this prospectus is a part, the Shares will be freely tradable in the hands of persons other than our affiliates.

USE OF PROCEEDS

The Selling Stockholders will receive all of the proceeds from the sale of the Shares offered for sale under this prospectus. We will not receive any proceeds from the sale of the Shares by the Selling Stockholders.

SELLING STOCKHOLDERS

This prospectus covers the sale of an aggregate of up to 3,765,230 shares of our Common Stock, $0.0001 par value per share, by the Selling Stockholders. See Description of Capital Stock beginning on page 58 for a description of the Common Stock.

Each Selling Stockholder represented to us that it was an accredited investor and that it was acquiring the Common Stock for investment only and not with a view towards, or for resale in connection with, the public sale or distribution thereof in a manner that would violate the Securities Act or any applicable state securities laws. At

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the time of the purchase of the securities to be resold, no selling stockholder had any agreements or understandings, directly or indirectly, with any person to distribute the securities.

Beneficial ownership is determined in accordance with SEC rules, and generally includes voting or investment power with respect to our Common Stock. Shares of Common Stock subject to options, warrants, our Series A Preferred Stock and other convertible securities that are currently exercisable or convertible within 60 days are deemed to be outstanding and to be beneficially owned by the person holding the options, warrants or convertible securities for the purpose of computing the percentage ownership of the person, but are not treated as outstanding for the purpose of computing the percentage ownership of any other person.

The following table sets forth certain information regarding the Selling Stockholders, the Shares that may be offered by this prospectus and other shares of Common Stock beneficially owned by them as of July 23, 2013. Selling Stockholders may offer Shares under this prospectus from time to time and may elect to sell none, some or all of the Shares set forth below. As a result, we cannot estimate the number of Shares of Common Stock that a Selling Stockholder will beneficially own after termination of sales under this prospectus. However, for the purposes of the table below, we have assumed that, after completion of the offering, none of the Shares covered by this prospectus will be held by the Selling Stockholders. In addition, a Selling Stockholder may have sold, transferred or otherwise disposed of all or a portion of that holder s Shares since the date on which they provided information for this table. We are relying on the Selling Stockholders to notify us of any changes in their beneficial ownership after the date they originally provided this information. See Plan of Distribution beginning on page 19. Unless otherwise disclosed in the footnotes to the table below, except for the ownership of the Common Stock, the Selling Stockholders have not had any material relationship with us within the past three years.

Selling Stockholder (1)	Number of Shares Beneficially Owned before Offering	Number of Shares Covered by This Prospectus	Number of Shares Beneficially Owned after Offering (2)	Percentage of Shares Beneficially Owned after Offering (3)
Adam Malamed	6,896	6,896		
Birchtree Capital LLC (4)	11,494	11,494		
Boxer Capital, LLC (5)	114,942	114,942		
Broadfin Healthcare Master Fund, Ltd. (6)	1,034,482	1,034,482		
David I. Rosenberg	5,747	5,747		
Fidaco Investments C.V. (7)	22,988	22,988		
Frost Gamma Investments Trust (8)	229,885	229,885		
Geert Cauwenbergh (9)	387,835	8,333	379,502	3.211%
Horberg Enterprises Limited Partnership (10)	22,988	22,988		
Hsu Gamma Investments L.P. (11)	57,471	57,471		
IsZo Capital LP (12)	229,885	229,885		
IVC Investors, LLLP (13)	22,988	22,988		
Jacqueline Simkin Revocable Trust as Amended and Restated 12/16/03 (14)	57,471	57,471		
John A. Paganelli	3,448	3,448		
Juan F. Rodriguez	4,597	4,597		
Kate Inman	3,448	3,448		
Lerner Family Trust U/A DTD 11/14/94 (15)	22,988	22,988		
Lorber Alpha II LP (16)	20,459	13,793	6,666	*
Marie V. Wolf (17)	10,229	6,896	3,333	*
Michael Brauser	22,988	22,988		
Michael S. Liebowitz	6,896	6,896		
MVA Investors, LLC (18)	22,988	22,988		

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Selling Stockholder (1)	Number of Shares Beneficially Owned before Offering	Number of Shares Covered by This Prospectus	Number of Shares Beneficially Owned after Offering (2)	Percentage of Shares Beneficially Owned after Offering (3)
MZ Trading LLC (19)	15,229	6,896	8,333	*
OPKO Health, Inc. (20)	2,241,378	574,712	1,666,666	14.569%
Portal Venture LLC (21)	114,942	114,942		
Prine Intervest Limited (22)	34,482	34,482		
Richard J. Lampen (23)	10,229	6,896	3,333	*
Richard C. Pfenninger, Jr.	6,896	6,896		
Richard Rosenstock (24)	22,757	16,091	6,666	*
Robert A. Baron	3,448	3,448		
RTW Investments, LLC (25)	603,055	68,965	534,090	4.460%
Steven D. Rubin	6,896	6,896		
Subbarao Uppaluri	5,747	5,747		
Tang Capital Partners, LP (26)	1,168,786	916,666	1,270,627	9.999%
Three Arch Opportunity Fund, LP (27)	68,965	68,965		

* Less than 1%.

(1) If required, information about other selling stockholders, except for any future transferees, pledgees, donees or successors of Selling Stockholders named in this table, will be set forth in a prospectus supplement or amendment to the registration statement of which this prospectus is a part. Additionally, post-effective amendments to the registration statement will, to the extent necessary, be filed to disclose any material changes to the plan of distribution from the description contained in the final prospectus.

(2) This number assumes the sale of all shares of Common Stock offered by this prospectus.

(3) This percentage is based upon 11,439,986 shares of Common Stock outstanding on July 1, 2013.

(4) The address for Birchtree Capital LLC is 4400 Biscayne Blvd., Suite 850, Miami, Florida 33137. Michael Brauser, a natural person, has voting and dispositive power over these shares. Mr. Brauser disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.

(5) The address for Boxer Capital, LLC is 440 Stevens Avenue, Suite 100, Solana Beach, California 92075. Aaron Davis, a natural person, has voting and dispositive power over these shares. Mr. Davis disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.

(6) The address for Broadfin Healthcare Master Fund, Ltd. is 237 Park Avenue, 9th Floor, New York, New York 10017. Kevin Kotler, a natural person, has voting and dispositive power over these shares. Mr. Kotler disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.

(7) The address for Fidaco Investments C.V. is Blaak 40 Basement, 3011TA, Rotterdam, The Netherlands.

(8) The address for Frost Gamma Investments Trust is 4400 Biscayne Blvd., Miami, Florida 33137. Phillip Frost, M.D., a natural person, has voting and dispositive power over these shares. Dr. Frost disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.

(9) Geert Cauwenbergh has served as our President, Chief Executive Officer and Chief Financial Officer since April 2012. Shares beneficially owned before the offering includes 379,502 shares of common stock issuable upon the exercise of options exercisable within 60 days of July 1, 2013.

(10) The address for Horberg Enterprises Limited Partnership is 289 Prospect Avenue, Highland Park, Illinois 60035. Howard Todd Horberg, a natural person, has voting and dispositive power over these shares. Mr. Horberg disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.

(11) The address for Hsu Gamma Investments L.P. is c/o OPKO Health, Inc., 4400 Biscayne Blvd., Miami, Florida 33137. Jane Hsiao, a natural person, has voting and dispositive power over these shares. Ms. Hsiao disclaims beneficial ownership of all shares beneficially owned, except to the extent of her pecuniary interests therein.

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(12) The address for IsZo Capital LP is 415 Madison Avenue, 14th Floor, New York, New York 10017. Brian Sheehy, a natural person, has voting and dispositive power over these shares.

(13) The address for IVC Investors, LLLP is 4400 Biscayne Blvd., Suite 950, Miami, Florida 33137. Ernest M. Halpryn and Glenn L. Halpryn, natural persons, share voting and dispositive power over these shares. Both Ernest Halpryn and Glenn Halpryn disclaim beneficial ownership of all shares beneficially owned, except to the extent of their pecuniary interests therein.

(14) The address for the Jacqueline Simkin Revocable Trust as Amended and Restated 12/16/03 is 801 Brickell Avenue, Suite 2350, Miami, Florida 33131. Jacqueline Simkin, a natural person, has voting and dispositive power over these shares. Ms. Simkin disclaims beneficial ownership of all shares beneficially owned, except to the extent of her pecuniary interests therein.

(15) The address for the Lerner Family Trust U/A DTD 11/14/94 is 7750 East Roseland Drive, La Jolla, California 92037. Richard A. Lerner and Nicola G. Lerner, natural persons, share voting and dispositive power over these shares. Both Richard Lerner and Nicola Lerner disclaim beneficial ownership of all shares beneficially owned, except to the extent of their pecuniary interests therein.

(16) Includes 6,666 shares of Common Stock purchased on the open market. The address for Lorber Alpha II LP is 125 Jericho Turnpike #501, Jericho, New York 11753. Howard M. Lorber, a natural person, has voting and dispositive power over these shares. Mr. Lorber disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.

(17) Includes 3,333 shares of Common Stock purchased on the open market.

(18) The address for MVA Investors, LLC is 440 Stevens Avenue, Suite 100, Solana Beach, California 92075. Aaron Davis, a natural person, has voting and dispositive power over these shares. Mr. Davis disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.

(19) Includes 8,333 shares of Common Stock purchased on the open market. The address for MZ Trading LLC is 4400 Biscayne Blvd., 12th Floor, Miami, Florida 33137. Mark Zeitchick, a natural person, has voting and dispositive power over these shares. Mr. Zeitchick disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.

(20) The address for OPKO is 4400 Biscayne Blvd., Miami, Florida 33137. OPKO acquired 1,666,666 shares of Common Stock pursuant to that certain Asset Purchase Agreement dated as of March 1, 2013 and acquired 574,712 shares of Common Stock pursuant to that certain Securities Purchase Agreement dated as of March 6, 2013. As a result, as of July 1, 2013, and without giving effect to the offering of 574,712 Shares of Common Stock by OPKO covered by this prospectus, OPKO beneficially owned 19.6% of our outstanding Common Stock.

(21) The address for Portal Venture LLC is 4400 Biscayne Blvd., 12th Floor, Miami, Florida 33137. Stephen Liu, M.D., a natural person, has voting and dispositive power over these shares. Dr. Liu disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.

(22) The address for Prine Intervest Limited is 4400 Biscayne Blvd., Suite 950, Miami, Florida 33137. Ernest M. Halpryn and Glenn L. Halpryn, natural persons, share voting and dispositive power over these shares. Both Ernest Halpryn and Glenn Halpryn disclaim beneficial ownership of all shares beneficially owned, except to the extent of their pecuniary interests therein.

(23) Includes 3,333 shares of Common Stock purchased on the open market.

(24) Includes 6,666 shares of Common Stock purchased on the open market: 3,333 shares are held by the Richard Rosenstock Rollover IRA, 1,666 shares are held by the Richard Rosenstock IRA and 1,666 shares are held by the Roni Rosenstock IRA. Mr. Rosenstock disclaims beneficial ownership of the shares held by the Roni Rosenstock IRA except to the extent of his pecuniary interest therein.

(25) The address for RTW Investments, LLC (**RTW**) is 1350 Avenue of the Americas, 28th Floor, New York, New York 10019. Roderick T. Wong is the Managing Member of RTW. Mr. Wong has sole voting and investment power over the shares shown and, as such, may be deemed to be a beneficial owner of such shares. Shares beneficially owned before the offering includes 534,090 shares of common stock that can be acquired upon the conversion of preferred stock held by RTW within 60 days of July 1, 2013.

(26) The address for Tang Capital Partners, LP (**TCP**) is 4747 Executive Drive, Suite 510, San Diego, California 92121. Tang Capital Management, LLC is the general partner of TCP. Kevin C. Tang is the Managing Director of Tang Capital Management, LLC. Mr. Tang shares voting and dispositive power over the shares shown

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above with TCP and Tang Capital Management, LLC and, as such, may be deemed to be a beneficial owner of such shares. Mr. Tang disclaims beneficial ownership of such shares, except to the extent of his pecuniary interest therein. Shares beneficially owned before the offering includes 3,070 shares of common stock owned by TCP on July 1, 2013 and 249,050 shares of common stock that can be acquired upon the conversion of preferred stock held by TCP within 60 days of July 1, 2013. Shares beneficially owned after the offering consists of 3,070 shares of common stock owned by TCP on July 1, 2013 and 1,267,557 shares of common stock that can be acquired upon the conversion of preferred stock held by TCP within 60 days of July 1, 2013.

(27) The address for Three Arch Opportunity Fund, LP is 3200 Alpine Road, Portola Valley, California 94028. Richard Lin, a natural person, has voting and dispositive power over these shares. Mr. Lin disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.

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MANAGEMENT S DISCUSSION AND ANALYSIS OF

FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the notes to those consolidated financial statements included elsewhere in this prospectus. This discussion contains forward-looking statements that involve significant risks and uncertainties. As a result of many factors, such as those set forth under Risk Factors and elsewhere in this prospectus, our actual results may differ materially from those anticipated in these forward-looking statements. Please refer to the discussion under the heading Forward-Looking Statements above.

Overview

We are a biotechnology company focused on discovering, developing and commercializing innovative therapies based on our proprietary, new-generation RNAi platform. Therapeutics that use RNAi have great promise because of their ability to silence, or down-regulate, the expression of a specific gene that may be over-expressed in a disease condition. Prior to September 8, 2011, our business was operated as an unincorporated division within Galena, our former parent company. We were incorporated in Delaware as a wholly owned subsidiary of Galena on September 8, 2011 in preparation for our planned spinoff from Galena, which was completed on April 27, 2012. Since that date, we have operated as an independent, publicly traded company.

By utilizing the expertise in RNAi and the comprehensive RNAi platform that we have established, we believe that we will be able to discover and develop lead compounds and progress them into and through clinical development for potential commercialization. Our proprietary therapeutic platform is comprised of novel RNAi compounds, referred to as rxRNA® compounds, that are distinct from, and we believe convey significant advantages over, classic siRNA (conventionally-designed small interfering RNA compounds), and offer many of the properties that we believe are important to the clinical development of RNAi-based drugs. We have developed a number of unique forms of rxRNA® compounds, all of which have been shown to be highly potent both *in vitro* and in preclinical *in vivo* models. These RNAi compounds include rxRNAori® and sd-rxRNA® , or self-delivering RNA. Based on our research, we believe that these different, novel siRNA configurations have various potential advantages for therapeutic use. These potential advantages include high potency, increased resistance to nucleases and modifications to eliminate off-target effects, and, in the case of the sd-rxRNA® compounds, access to cells and tissues with no additional formulation required, and, hence, reduced cell toxicity, which is known to be an issue with unmodified siRNAs.

Our lead clinical product candidate is RXI-109, a self-delivering RNAi compound (sd-rxRNA®) being developed for the reduction of dermal scarring in planned surgeries. RXI-109 is designed to reduce the expression of CTGF, a critical regulator of several biological pathways involved in scarring and fibrotic diseases. RXI-109 is being developed to prevent or reduce dermal scarring following surgery or trauma, as well as for the management of hypertrophic scars and keloids.

In June 2012, we initiated our first clinical trial of RXI-109, known as Study 1201. Study 1201 was designed to evaluate the safety and tolerability of several dose levels of RXI-109 in humans and may provide preliminary evidence of reduction of surgical scarring. In December 2012, we initiated a second Phase 1 clinical trial with RXI-109, known as Study 1202. Study 1202 was designed to evaluate the safety of multi-dose administration of RXI-109 in healthy volunteers, including an evaluation of surrogate end points of clinical efficacy.

In Study 1201, RXI-109 has shown excellent safety and tolerability with ascending single doses. Study 1202 uses multiple doses and is designed to evaluate the safety and side effects of those doses, while also exploring possible effects of RXI-109 on scarring. In Study 1201, RXI-109 was found to be well tolerated and produced a statistically significant and dose dependent reduction of CTGF, a protein that may cause abnormal scarring when

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it is over-expressed in a wound. In Study 1202, multiple dermal injections were well tolerated in all doses, and treatment with RXI-109 resulted in dose-dependent silencing of CTGF mRNA in treated areas. In the second half of 2013, we expect to initiate Phase 2 clinical trials in which RXI-109 is administered following scar revision surgery.

Overexpression of CTGF is implicated in dermal scarring and fibrotic disease and because of this we believe that RXI-109 or other CTGF-targeting RNAi compounds may be able to treat other fibrotic indications, including pulmonary fibrosis, liver fibrosis, acute spinal injury, ocular scarring, joint fibrosis and vascular restenosis. If the current clinical trials of RXI-109 produce successful results in dermal anti-scarring, we may explore opportunities in these indications, as well as other possible dermatology applications (i.e. cutaneous scleroderma).

While focusing our efforts on our RXI-109 development program, we also intend to continue to advance additional development programs both on our own and through collaborations with academic and corporate third parties. Current programs in the discovery and preclinical stages include a collaboration with Dr. Robert Brown at UMMS for the treatment of ALS, an SBIR grant to evaluate and develop sd-rxRNAs® as potential therapeutics for the treatment of retinoblastoma and a collaboration evaluating the potential to use a CTGF-targeting sd-rxRNA® as a therapeutic to reduce or inhibit retinal scarring, which often occurs as a consequence of some retinal diseases and following retinal detachment.

On March 1, 2013, we entered into an asset purchase agreement with OPKO pursuant to which we have acquired substantially all of OPKO s RNAi-related assets, including patents, licenses, clinical and preclinical data and other assets. The assets purchased from OPKO are at an early stage of development, and we expect to commence development work with preclinical testing to identify potential lead compounds and targets.

On July 18, 2013, the Board of Directors of the Company approved a 1-for-30 reverse stock split of the Company s outstanding common stock, which was effected on July 23, 2013. Stockholders entitled to fractional shares as a result of the reverse stock split were entitled to receive a cash payment in lieu of receiving fractional shares. Shares of common stock underlying outstanding stock options and other equity instruments were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased in accordance with the terms of the agreements governing such securities. Shares of common stock reserved for issuance upon the conversion of the Company s Series A Preferred Stock were proportionately reduced and the respective conversion prices were proportionately increased. All share and per share amounts in this prospectus and in the financial statements have been retroactively adjusted for all periods presented to give effect to the reverse stock split, including reclassifying an amount equal to the reduction in par value to additional paid-in capital.

Research and Development

To date, our research programs have focused on identifying product candidates and optimizing the delivery method and technology necessary to make RNAi compounds available by local or systemic administration, as appropriate, for diseases for which we intend to develop an RNAi therapeutic. Since we commenced operations, research and development has comprised a significant proportion of our total operating expenses and is expected to comprise the majority of our spending for the foreseeable future.

There are risks in any new field of drug discovery that preclude certainty regarding the successful development of a product. We cannot reasonably estimate or know the nature, timing and costs of the efforts necessary to complete the development of, or the period in which material net cash inflows are expected to commence from, any product candidate. Our inability to make these estimates results from the uncertainty of numerous factors, including but not limited to:

Our ability to advance product candidates into preclinical research and clinical trials;

The scope and rate of progress of our preclinical program and other research and development activities;

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- The scope, rate of progress and cost of any clinical trials we commence;
- The cost of filing, prosecuting, defending and enforcing patent claims and other intellectual property rights;
- Clinical trial results;
- The terms and timing of any collaborative, licensing and other arrangements that we may establish;
- The cost and timing of regulatory approvals;
- The cost of establishing clinical and commercial supplies of our product candidates and any products that we may develop;
- The cost and timing of establishing sales, marketing and distribution capabilities;
- The effect of competing technological and market developments; and
- The effect of government regulation and insurance industry efforts to control healthcare costs through reimbursement policy and other cost management strategies.

Failure to complete any stage of the development of our product candidates in a timely manner could have a material adverse effect on our operations, financial position and liquidity.

License Agreements

We have entered into licensing relationships with academic institutions, research foundations and commercial entities, and may seek to enter into additional licenses with pharmaceutical and biotechnology companies. We also may enter into strategic alliances to expand our intellectual property portfolio and to potentially accelerate our development programs by gaining access to technology and funding, including equity sales, license fees and other revenues. For each product that we develop that is covered by the patents licensed to us, including our material licenses discussed elsewhere in this prospectus, we are obligated to make additional payments upon the attainment of certain specified product development milestones.

See Business Intellectual Property and note 11 to our consolidated financial statements for information on our material license agreements.

Critical Accounting Policies and Estimates

The discussion and analysis of our financial condition and results of operations is based upon our financial statements, which have been prepared in accordance with United States generally accepted accounting principles (**GAAP**). The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our estimates, including those related to the impairment of long-lived assets, certain accrued expenses, stock-based compensation, and certain other expenses. We base our estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions and could have a material impact on our reported results. While our significant accounting policies are more fully described in the Notes to our financial statements included elsewhere in this prospectus, we believe the following accounting policies to be the most critical in understanding the judgments and estimates we use in preparing our financial statements:

Accounting for Predecessor s Financial Statements and Carve-Out Financial Statements

Prior to April 13, 2011, Galena (formerly known as RXi Pharmaceuticals Corporation) was engaged primarily in conducting discovery research and preclinical development activities based on RNAi, and Galena s financial statements for periods prior to April 13, 2011 reflected solely the assets, liabilities and results of

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operations attributable to Galena s RNAi-based assets, liabilities and results of operations. On April 13, 2011, Galena broadened its strategic direction by adding the development and commercialization of cancer therapies that utilize peptide-based immunotherapy products, including a main product candidate, NeuVax, for the treatment of various cancers. On September 24, 2011, Galena contributed to RXi Pharmaceuticals Corporation (**RXi**, **Registrant**, or the **Company**), a newly formed subsidiary of Galena, substantially all of Galena s RNAi-related technologies and assets. The newly formed RXi was incorporated on September 8, 2011 with the issuance of 100 initial shares at a price of $0.01 per share, for total consideration of $1.00. RXi was not engaged in any activities other than its initial incorporation from September 8, 2011 to September 23, 2011.

As a result of these transactions, certain historical financial information for the fiscal year ended December 31, 2011, as well as the cumulative period from inception (January 1, 2003) through December 31, 2012, has been carved out of the financial statements of Galena, as our Predecessor, for such periods, and includes carved out activities through September 23, 2011. Such financial information is limited to Galena s RNAi-related activities, assets and liabilities only, and excludes activities, assets and liabilities that are attributable to Galena s cancer therapy activities.

The carved-out financial information includes both direct and indirect expenses. The historical direct expenses consist primarily of the various costs for technology license agreements, sponsored research agreements, fees paid to scientific advisors and employee expenses of employees directly involved in RNAi-related activities. Indirect expenses represent expenses incurred by Galena that were allocable to the RNAi business. The indirect expenses are based upon: (1) estimates of the percentage of time spent by Galena employees working on RNAi business matters; and (2) allocations of various expenses associated with the employees, including salary, benefits, rent associated with the employees office space, accounting and other general and administrative expenses. The percentage of time spent by Galena employees was multiplied by these allocable expenses to arrive at the total employee expenses allocable to the RNAi business and reflected in the carved out financial statements.

Management believes the assumptions underlying the carve-out financial information are reasonable; however, the financial position, expenses and cash flows may have been materially different if the RNAi business had operated as a stand-alone entity during the periods presented.

Research and Development Expenses

Research and development costs are expensed as incurred. Included in research and development costs are wages, benefits, facilities, supplies, external services, and other operating costs and overhead related to the our research and development departments, as well as costs to acquire technology licenses and expenses associated with preparation of clinical trials.

Stock-based Compensation

We follow the provisions of Financial Accounting Standards Board (**FASB**) Accounting Standards Codification (**ASC**) Topic 718, *Compensation Stock Compensation* (**ASC 718**), which requires the measurement and recognition of compensation expense for all stock based payment awards made to employees, non-employee directors, and consultants, including employee stock options. Stock compensation expense based on the grant date fair value estimated in accordance with the provisions of ASC 718 is recognized as an expense over the requisite service period. Determining the amount of stock-based compensation to be recorded requires us to develop highly subjective estimates to be used in calculating the grant-date fair value of stock options. We use the Black-Scholes option pricing model to value our option grants and determine the related compensation expense. The use of the model requires us to make estimates of the following assumptions:

Expected volatility Due to our limited trading history, we are responsible for estimating volatility and currently use the expected volatilities of similar entities. We have considered a number of factors in making our determination as to entities that are considered similar, such as the industry, size of the company, and financial leverage.

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Expected term We use the simplified method to estimate the expected term assumption. The simplified method is based on the vesting period and the contractual term for each grant, or for each vesting-tranche for awards with graded vesting.

Risk-free interest rate The yield on zero-coupon U.S. Treasury securities for a period that is commensurate with the expected term assumption is used as the risk-free interest rate.

Dividend Yield We utilize a dividend yield of zero based on the fact that we have never paid cash dividends and currently have no intention to pay cash dividends.

The amount of stock-based compensation expense recognized during a period is based on the value of the portion of the awards that are ultimately expected to vest. ASC 718 requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. In developing a forfeiture rate estimate, the Company considered forfeiture rates used by similar entities as well as its historical experience and actual forfeitures for the year. We have estimated an annualized forfeiture rate of 5.0% for options granted to our employees and no forfeiture rate for the directors as of December 31, 2012. The Company will continue to evaluate its forfeiture rate as compared to the actual number of forfeitures in future periods to determine if adjustments to compensation expense may be required.

Stock based compensation expense prior to the completion of the spinoff was allocated to the carved out financial statements based on an estimate of time spent by Galena employees, board members, scientific advisory board members, and outside consultants on RXi related matters. Galena options held by current RXi employees were cancelled at the date of the completion of the spinoff except for options to purchase an aggregate of 477,191 shares of Galena common stock. The Company will continue to recognize stock compensation expense on the non-cancelled options as they vest. Under the terms of the option awards, these options will continue to vest as long as the individuals are employed by RXi.

For stock options granted as consideration for services rendered by non-employees, the Company recognizes compensation expense in accordance with the requirements of FASB ASC Topic 505-50, *Equity Based Payments to Non-Employees.* Non-employee option grants that do not vest immediately upon grant are recorded as an expense over the requisite service period of the underlying stock options. At the end of each financial reporting period prior to vesting, the value of these options, as calculated using the Black-Scholes option-pricing model, will be re-measured using the fair value of the Company s common stock and the non-cash compensation recognized during the period will be adjusted accordingly. Since the fair market value of options granted to non-employees is subject to change in the future, the amount of the future compensation expense will include fair value re-measurements until the stock options are fully vested.

Accounting for Convertible Preferred Stock

On April 27, 2012, the Company received net proceeds of $8.1 million from the issuance of its Series A Convertible Preferred Stock (**Series A Preferred Stock**). The Company first assessed the Series A Preferred Stock under ASC 480, *Distinguishing Liabilities from Equity* , and it was determined it was not within the scope of ASC 480. The Series A Preferred Stock was then assessed under ASC 815, *Derivatives and Hedging.*

The Series A Preferred Stock is convertible into common stock at the holders option, subject to the terms of the Series A Preferred Stock Certificate of Designations. This embedded feature meets the definition of a derivative. The Company believes that the Series A Preferred Stock is an equity host for the purposes of assessing the embedded conversion option for potential bifurcation. The Company concluded that the conversion option feature is clearly and closely related to the preferred stock host. As such, the conversion feature did not require bifurcation under ASC 815.

The Series A Preferred Stock was then assessed under ASC 470, *Debt with Conversion Features and Other Options,* to determine if there was a beneficial conversion feature (BCF). The BCF compares the carrying value

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of the preferred stock, after the value of any derivatives has been allocated, from the proceeds to the transaction date value of the number of shares of common stock that the holder would receive upon conversion. The calculation resulted in a BCF of $9.5 million and was recorded in additional paid-in capital.

The Company has recorded the Series A Preferred Stock in temporary equity, as the Company may not be able to control the actions necessary to issue the maximum number of common shares needed to provide for a conversion in full of the then outstanding Series A Preferred Stock, at which time a holder of the Series A Preferred Stock may elect to redeem its Series A Preferred Stock outstanding in the amount equal to the face value per share, plus unpaid accrued dividends. The initial carrying value of the preferred stock was $9.5 million. Upon completion of the spinoff, the conversion option of the Series A Preferred Stock was immediately exercisable. Therefore, the $9.5 million discount related to the BCF was immediately accreted to preferred dividends, resulting in an increase in the carrying value of the Series A Preferred Stock to $9.5 million.

Holders of Series A Preferred Stock are entitled to receive cumulative mandatory dividends at the rate per share of seven percent (7%) of the face amount ($1,000 per share) per annum, payable quarterly on each March 31, June 30, September 30 and December 31. Dividends are payable in additional shares of Series A Preferred Stock, valued for this purpose at the face amount. In the event there are not sufficient authorized preferred shares available to pay such a dividend, the dividend shall instead accrete to and increase the value of the outstanding Series A Preferred Stock. The fair value of the Series A Preferred Stock dividend, which is included in the Company s net loss applicable to common shareholders, is calculated by multiplying the number of common shares that a preferred holder would receive upon conversion by the closing price of the Company s common stock on the dividend payable date.

Results of Operations

The following data summarizes the results of our operations for the periods indicated, in thousands:

	Three Months Ended March 31,	
	2013	2012
Revenues	$ 53	$
Research and development expense	(13,771)	(1,154)
General and administrative expense	(676)	(751)
Operating loss	(14,394)	(1,905)
Net loss	(14,397)	(1,926)
Net loss applicable to common stockholders	$ (17,944)	$ (1,926)

	For the Years Ended December 31,	
	2012	2011
Revenues	$ 97	$
Research and development expense	(10,451)	(6,624)
General and administrative expense	(2,621)	(6,146)
Operating loss	(12,975)	(12,770)
Net loss	(12,880)	(10,219)
Net loss applicable to common stockholders	$ (25,695)	$ (10,219)

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Comparison of the Three Months Ended March 31, 2013 and 2012

Revenues

We generate revenues through government grants. The following table summarizes our total revenues from government grants, for the periods indicated, in thousands:

	For the Three Months Ended March 31,	
	2013	**2012**
Grant revenues	$ 53	$
Total revenues	$ 53	$

Total revenues were approximately $53,000 for the three months ended March 31, 2013, compared with no revenues for the three months ended March 31, 2012. The increase of $53,000 was due to the recognition of work completed on government grants during the quarterly period. During the same period in 2012, the Company was assigned the grants from Galena pursuant to a contribution agreement; however, the assignment of the grants was subject to the approval from the granting institutions, which was not received until the second quarter of 2012.

We also had $464,000 of deferred revenue at March 31, 2013, which consists of receipt of grant awards from the government, but have not yet recognized, pursuant to our revenue recognition policies, as the work has not been completed.

For the foreseeable future, we expect our revenues to continue to be derived primarily from government grants.

Operating Expenses

Research and Development Expenses

Research and development expense consists primarily of compensation-related costs for our employees dedicated to research and development activities and for our Scientific Advisory Board (**SAB**) members, as well as clinical trial costs, licensing fees, patent prosecution costs, and the cost of lab supplies used in our research and development programs. We expect research and development expenses to increase as we expand our discovery, development and clinical activities. The following table summarizes our research and development expenses for the periods indicated, in thousands:

	For the Three Months Ended March 31,	
	2013	**2012**
Research and development expense	$ 1,096	$ 1,017
Research and development employee stock-based compensation expense	373	38
Research and development non-employee stock-based compensation expense	52	99
Fair value of common stock issued in exchange for patent and technology rights	12,250	
Total research and development expense	$ 13,771	$ 1,154

Total research and development expense was approximately $13,771,000 for the three months ended March 31, 2013, compared with $1,154,000 for the three months ended March 31, 2012. The increase of $12,617,000, or 1,093%, was primarily due to the expense related to the fair value of common stock issued to OPKO in exchange for patent and technology rights of $12,250,000, an increase of $79,000 in research and

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development expense related to expenses for the Company s two ongoing clinical trials, and an increase of $335,000 in employee stock-based compensation expense offset by a decrease of $47,000 related to changes in fair value of stock options granted to non-employees.

General and Administrative Expense

General and administrative expense consists primarily of compensation-related costs for our employees dedicated to general and administrative activities, legal fees, audit and tax fees, consultants and professional services, and general corporate expenses. The following table summarizes our general and administrative expenses for the periods indicated, in thousands:

	For the Three Months Ended March 31,	
	2013	2012
General and administrative expense	$ 473	$ 674
General and administrative employee stock-based compensation expense	203	77
Total general and administrative expense	$ 676	$ 751

General and administrative expense was approximately $676,000 for the three months ended March 31, 2013, compared with $751,000 for the three months ended March 31, 2012. The decrease of $75,000, or 10%, was primarily due to a decrease of $201,000 in general and administrative expense due to lower personnel related costs, board fees and expenses allocated to the Company from Galena offset by an increase of $126,000 in employee stock-based compensation.

Interest Income (Expense)

The key objectives of our investment policy are to preserve principal and ensure sufficient liquidity, so our invested cash may not earn as high of a level of income as longer-term or higher risk securities, which generally have less liquidity and more volatility.

Interest expense was negligible for the three months ended March 31, 2013, compared with $22,000 for the three months ended March 31, 2012. The decrease of $22,000 was primarily due to the interest expense from bridge notes funded by the Series A Preferred Stock holders. The bridge notes were converted into shares of Series A Preferred Stock at the completion of the spinout from Galena in the second quarter of 2012.

Series A Preferred Stock Accretion and Dividends

The following table summarizes our Series A Preferred Stock dividends for the periods indicated, in thousands:

	For the Three Months Ended March 31,	
	2013	2012
Series A Preferred Stock dividend	$ 3,547	$
Accretion of Series A Preferred Stock and dividends	$ 3,547	$

Accretion of Series A Preferred Stock and dividends was approximately $3,547,000 for the three months ended March 31, 2013, compared with no Series A Preferred Stock accretion and dividends for the three months ended March 31, 2012. The increase of $3,547,000 relates to the fair value of dividends paid to the Series A Preferred Stock holders during the quarterly period. As of April 27, 2012, the date of completion of the Company s spinoff from Galena, RXi issued 9,500 shares of Series A Preferred Stock to institutional investors

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pursuant to the Series A Preferred Stock Purchase Agreement (the **Series A SPA**). Holders of Series A Preferred Stock are entitled to receive cumulative mandatory dividends payable quarterly in additional shares of Series A Preferred Stock.

The rights and preferences of the Series A Preferred Stock and the calculation of the dividend payable, are described further in Note 3 of the financial statements.

Comparison of the Years Ended December 31, 2012 and 2011

Revenues

We generate revenues through government grants. The following table summarizes our total revenues from government grants, for the periods indicated, in thousands:

	For the Years Ended December 31,	
	2012	**2011**
Grant revenues	$ 97	$
Total revenues	$ 97	$

Total revenues were approximately $97,000 for the year ended December 31, 2012, compared with no revenues for the year ended December 31, 2011. The increase of $97,000, or 100%, was due to the recognition of work completed on government grants during 2012. During the same period in 2011, the Company was assigned the grants from Galena pursuant to a contribution agreement; however, the assignment of the grants was subject to the approval from the granting institutions, which was not received until 2012.

We also had $518,000 of deferred revenue at December 31, 2012, which consists of receipt of grant awards from the government, but have not yet recognized pursuant to our revenue recognition policies.

For the foreseeable future, we expect our revenues to continue to be derived primarily from government grants.

Operating Expenses

Research and Development Expenses

Research and development expense consists primarily of compensation-related costs for our employees dedicated to research and development activities and for our Scientific Advisory Board (**SAB**) members, as well as clinical trial costs, licensing fees, patent prosecution costs, and the cost of lab supplies used in our research and development programs. We expect research and development expenses to increase as we expand our discovery, development and clinical activities. The following table summarizes our research and development expenses for the periods indicated, in thousands:

	For the Years Ended December 31,	
	2012	**2011**
Research and development expense	$ 3,746	$ 6,190
Research and development employee stock-based compensation expense	418	513
Research and development non-employee stock-based compensation expense	114	(79)
Fair value of common stock issued in exchange for patent and technology rights	6,173	
Total research and development expense	$ 10,451	$ 6,624

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Total research and development expense was approximately $10,451,000 for the year ended December 31, 2012, compared with $6,624,000 for the year ended December 31, 2011. The increase of $3,827,000, or 58%, was primarily due to the expense related to the fair value of common stock issued in 2012 in exchange for patent and technology rights of $6,173,000 and an increase of $193,000 related to changes in fair value of stock options granted to non-employees, offset by a decrease of $2,444,000 in research and development expense due to decreased personnel and lab supply costs and a decrease of $95,000 in employee stock-based compensation expense.

General and Administrative Expense

General and administrative expense consists primarily of compensation-related costs for our employees dedicated to general and administrative activities, legal fees, audit and tax fees, consultants and professional services, and general corporate expenses. The following table summarizes our general and administrative expenses for the periods indicated, in thousands:

	For the Years Ended December 31,	
	2012	**2011**
General and administrative expense	$ 2,172	$ 4,357
General and administrative employee stock-based compensation expense	436	1,675
Common stock warrants issued for general and administrative expense	13	
Fair value of Parent Company common stock and common stock warrants issued in exchange for general and administrative expense		114
Total general and administrative expense	**$ 2,621**	**$ 6,146**

Total general and administrative expense was approximately $2,621,000 for the year ended December 31, 2012, compared with $6,146,000 for the year ended December 31, 2011. The decrease of $3,525,000, or 57%, was primarily due to a decrease of $2,185,000 in general and administrative expense due to lower personnel related costs, board fees and expenses, and professional outside services, a decrease of $1,239,000 in employee stock-based compensation and a decrease of $114,000 related to the fair value of our Parent Company s common stock issued for services, offset by an increase of $13,000 related to the fair value of common stock warrants issued in exchange for services.

Interest Income (Expense)

The key objectives of our investment policy are to preserve principal and ensure sufficient liquidity, so our invested cash may not earn as high of a level of income as longer-term or higher risk securities, which generally have less liquidity and more volatility.

Interest expense was approximately $30,000 for the year ended December 31, 2012, compared with negligible net interest for the year ended December 31, 2011. The increase of $30,000 was primarily due to the interest expense from bridge notes funded by the Series A Preferred Stock holders.

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Other Income (Expense)

The following table summarizes our other income (expense) for the periods indicated, in thousands:

	For the Years Ended December 31,	
	2012	2011
Loss on warrant exchange	$	$ (900)
Change in fair value of Parent Company derivatives issued		3,451
Other income	125	
Other income, net	$ 125	$ 2,551

Other income was $125,000 for the year ended December 31, 2012, compared with $2,551,000 for the year ended December 31, 2011. The decrease of $2,426,000, or 95%, was primarily related to the change in fair value of Galena s derivatives potentially settleable in cash issued in connection with several financing transactions, which change occurred in 2011. On September 24, 2011, the fair value of Galena s derivatives was reclassified to divisional deficit immediately prior to the recapitalization of the Company, as the Company was effectively released of any liability or obligation to settle the derivatives pursuant to the contribution agreement with Galena.

Series A Preferred Stock Accretion and Dividends

The following table summarizes our other income (expense) for the periods indicated, in thousands:

	For the Years Ended December 31,	
	2012	2011
Accretion of Series A Preferred Stock	$ 9,500	$
Series A Preferred Stock dividend	3,315	
Accretion of Series A Preferred Stock and dividends	$ 12,815	$

Accretion of Series A Preferred Stock and dividends was approximately $12,815,000 for the year ended December 31, 2012, compared with no Series A Preferred Stock accretion and dividends for the year ended December 31, 2011. As of April 27, 2012, the date of completion of the Company s spinoff from Galena, RXi issued 9,500 shares of Series A Preferred Stock to Tang Capital Partners, LP (**TCP**) and RTW Investments, LLC (**RTW**) pursuant to the Series A Preferred Stock Purchase Agreement (the **Series A SPA**). Of the total accretion of Series A Preferred Stock and dividends, $9,500,000 relates to the beneficial conversion feature of the Series A Preferred Stock and $3,315,000 relates to the fair value of the dividends paid to the Series A Preferred Stock holders for the year ended December 31, 2012.

The rights and preferences of the Series A Preferred Stock, as well as the beneficial conversion feature as a result of the issuance of Series A Preferred Stock and the calculation of dividend payable, are described further in Note 8 to the notes of the financial statements.

Liquidity and Capital Resources

We had cash and cash equivalents of approximately $19.6 million as of March 31, 2013 and $5.1 million as of December 31, 2012, compared with approximately $0.5 million as of December 31, 2011. On April 27, 2012, the Company completed its spinoff from Galena and issued 9,500 of Series A Preferred Stock upon the conversion of approximately $1.0 million in principal and accrued interest under bridge notes outstanding and the receipt of approximately $8.5 million under the Series A SPA. At the closing of the spin-off transaction, RXi paid $400,000 in total to reimburse transaction-related expenses.

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On March 6, 2013, RXi entered into a Securities Purchase Agreement with OPKO and certain accredited and institutional investors, pursuant to which RXi agreed to issue 3,765,230 shares of common stock at a price of $4.35 per share. The gross proceeds from the offering, which closed on March 12, 2013, were approximately $16.4 million, and the net proceeds, after payment of commissions and other costs of the March 2013 Offering, were approximately $15.6 million.

The Company believes that its existing cash and cash equivalents will be sufficient to fund the Company s operations, including the planned Phase 2 program for RXI-109, into fiscal 2015.

We expect to incur significant operating losses as we advance our product candidates through the drug development and regulatory process. We have generated significant losses to date, have not generated any product revenue to date and may not generate product revenue in the foreseeable future, if ever. In the future, RXi will be dependent on obtaining funding from third parties, such as proceeds from the issuance of debt, sale of equity, funded research and development programs and payments under partnership and collaborative agreements, in order to maintain RXi s operations and meet RXi s obligations to licensors. There is no guarantee that debt, additional equity or other funding will be available to the Company on acceptable terms, or at all. If the Company fails to obtain additional funding when needed, RXi would be forced to scale back, terminate the Company s operations or seek to merge with or to be acquired by another company.

Net Cash Flow from Operating Activities

Net cash used in operating activities was approximately $1,128,000 for the three months ended March 31, 2013, compared with $1,209,000 for the three months ended March 31, 2012. The decrease of approximately $81,000 related primarily to the net loss of $14,397,000 for the three months ended March 31, 2013 as compared to $1,926,000 for the same period in the prior year, as described above, as adjusted for non-cash items to arrive at the net cash used in operating activities. The non-cash items adjusted for the three months ended March 31, 2013 was approximately $12,904,000, compared with $254,000 for the three months ended March 31, 2012. The increase from the same period in the prior year is primarily related to the fair value of common stock issued for the purchase of RNAi assets from OPKO for $12,250,000.

Net Cash Flow from Investing Activities

There were no cash flows related to investing activities for the three months ended March 31, 2013 and 2012, respectively.

Net Cash Flow from Financing Activities

Net cash provided by financing activities was $15,644,000 for the three months ended March 31, 2013, compared with $1,010,000 for the three months ended March 31, 2012. The increase of $14,634,000 was primarily due to the net proceeds received from the issuance of common stock of $15,647,000 during the three months ended March 31, 2013 as compared with the same period in 2012.

Recently Issued Accounting Standards

In February 2013, the FASB issued amendments to the accounting guidance for presentation of comprehensive income to improve the reporting of reclassifications out of accumulated other comprehensive income. The amendments do not change the current requirements for reporting net income or other comprehensive income, but do require an entity to provide information about the amounts reclassified out of accumulated other comprehensive income by component. In addition, an entity is required to present, either on the face of the statement where the net income is presented or in the notes, significant amounts reclassified out of accumulated other comprehensive income by the respective line items of net income but only if the amount reclassified is required under GAAP to be reclassified to net income in its entirety in the same reporting period.

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For other amounts that are not required under GAAP to be reclassified in their entirety to net income, an entity is required to cross-reference to other disclosures required under GAAP that provide additional detail about these amounts. This new standard is required to be applied retrospectively and is effective for fiscal years and interim periods within those years beginning after December 15, 2012. The adoption of this standard did not impact the Company s financial statements as the Company s comprehensive loss is equal to its net loss for all periods presented.

Off-Balance Sheet Arrangements

In connection with certain license agreements, we are required to indemnify the licensor for certain damages arising in connection with the intellectual property rights licensed under the agreement. In addition, we are a party to a number of agreements entered into in the ordinary course of business that contain typical provisions that obligate us to indemnify the other parties to such agreements upon the occurrence of certain events. These indemnification obligations are considered off-balance sheet arrangements in accordance with ASC Topic 460 (**ASC 460**), *Guarantor s Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others*. To date, we have not encountered material costs as a result of such obligations and have not accrued any liabilities related to such obligations in our financial statements. See Note 11 of the notes to our consolidated financial statements for further discussion of these indemnification agreements.

BUSINESS

Overview

We are a biotechnology company focused on discovering, developing and commercializing innovative therapies based on our proprietary, new-generation RNAi platform. Therapeutics that use RNAi have great promise because of their ability to silence, or down-regulate, the expression of a specific gene that may be over-expressed in a disease condition. Prior to September 8, 2011, our business was operated as an unincorporated division within Galena, our former parent company. We were incorporated in Delaware as a wholly owned subsidiary of Galena on September 8, 2011 in preparation for our planned spin-off from Galena, which was completed on April 27, 2012. Since that date, we have operated as an independent, publicly traded company.

By utilizing the expertise in RNAi and the comprehensive RNAi platform that we have established, we believe that we will be able to discover and develop lead compounds and progress them into and through clinical development for potential commercialization. Our proprietary therapeutic platform is comprised of novel RNAi compounds, referred to as rxRNA® compounds, that are distinct from, and we believe convey significant advantages over, classic siRNA (conventionally-designed small interfering RNA compounds), and offer many of the properties that we believe are important to the clinical development of RNAi-based drugs. We have developed a number of unique forms of rxRNA® compounds, all of which have been shown to be highly potent both *in vitro* and in preclinical *in vivo* models. These RNAi compounds include rxRNAori® and sd-rxRNA®, or self-delivering RNA. Based on our research, we believe that these different, novel siRNA configurations have various potential advantages for therapeutic use. These potential advantages include high potency, increased resistance to nucleases and modifications to eliminate off-target effects, and, in the case of the sd-rxRNA® compounds, access to cells and tissues with no additional formulation required, and, hence, reduced cell toxicity, which is known to be an issue with unmodified siRNAs.

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Our Therapeutic Pipeline

The following is a summary of our therapeutic development programs.

RXI-109 Clinical Development Program

Our lead clinical product candidate is RXI-109, a self-delivering RNAi compound (sd-rxRNA®) being developed for the reduction of dermal scarring in planned surgeries. RXI-109 is designed to reduce the expression of CTGF, a critical regulator of several biological pathways involved in scarring and fibrotic diseases. RXI-109 is being developed to prevent or reduce dermal scarring following surgery or trauma, as well as for the management of hypertrophic scars and keloids.

In June 2012, we initiated our first clinical trial of RXI-109, known as Study 1201. Study 1201 was designed to evaluate the safety and tolerability of several dose levels of RXI-109 in humans and may provide preliminary evidence of reduction of surgical scarring. Study 1201 enrolled fifteen subjects in a single-center, randomized, single-dose, double-blind, ascending dose, within-subject controlled study of RXI-109 for the treatment of incision scars, during which single, intradermal injections of escalating doses were administered. Subjects received an injection of RXI-109 in two separate areas on the abdomen and placebo injections in two other areas of the abdomen. RXI-109 was well tolerated by intradermal injection. No serious local or systemic side effects were observed in the subjects at any of the doses administered, and maximum systemic exposure after intradermal administration was assessed at approximately 5% of the total dose administered.

In December 2012, we initiated a second Phase 1 clinical trial with RXI-109, known as Study 1202. Study 1202 was designed to evaluate the safety of multi-dose administration of RXI-109 in healthy volunteers, including an evaluation of surrogate end points of clinical efficacy. Nine subjects (3 cohorts of 3 subjects each) were enrolled in a single-center, randomized, multi-dose, double-blind, ascending dose, within-subject controlled study of RXI-109 for the treatment of incision scars, during which subjects received intradermal injections of RXI-109. Subjects received injections of RXI-109 in four separate areas of the abdomen and placebo injections in four other areas of the abdomen, all of which were administered on multiple occasions over multiple weeks.

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While the primary focus of Studies 1201 and 1202 is to establish the safety and tolerability of RXI-109 in healthy subjects, there are also several surrogate end points being evaluated that may provide evidence of surgical scar prevention.

In Study 1201, RXI-109 has shown excellent safety and tolerability with ascending single doses. Study 1202 uses multiple doses and is designed to evaluate the safety and side effects of those doses, while also exploring possible effects of RXI-109 on scarring. In Study 1201, in addition to being found to be well tolerated, RXI-109 produced a statistically significant and dose dependent reduction of CTGF, a protein that may cause abnormal scarring when it is over-expressed in a wound. In Study 1202, multiple dermal injections were well tolerated in all doses, and treatment with RXI-109 resulted in dose-dependent silencing of CTGF mRNA in treated areas. In the second half of 2013, we expect to initiate Phase 2 clinical trials in which RXI-109 is administered following scar revision surgery.

As there are currently no FDA-approved drugs to prevent scar formation, a therapeutic of this type could have great benefit for trauma and surgical patients, as a treatment during the surgical revision of existing unsatisfactory scars, and in the treatment, removal and inhibition of keloids (scars that extend beyond the original skin injury).

Future Novel Applications of RXI-109

Overexpression of CTGF is implicated in dermal scarring and fibrotic disease, and because of this, we believe that RXI-109 or other CTGF-targeting RNAi compounds may be able to treat other fibrotic indications, including pulmonary fibrosis, liver fibrosis, acute spinal injury, ocular scarring, joint fibrosis and vascular restenosis. If the current clinical trials of RXI-109 produce successful results in dermal anti-scarring, we may explore opportunities in these additional indications, as well as other possible dermatology applications (e.g., cutaneous scleroderma).

Other Development Programs

While focusing our efforts on our RXI-109 development program, we also intend to continue to advance additional development programs both on our own and through collaborations with academic and corporate third parties. Current programs in the discovery and preclinical stages include:

- a collaboration with Dr. Robert Brown at UMMS for the treatment of ALS;
- an SBIR grant to evaluate and develop sd-rxRNAs® as potential therapeutics for the treatment of retinoblastoma; and
- a collaboration evaluating the potential to use a CTGF-targeting sd-rxRNA® as a therapeutic to reduce or inhibit retinal scarring, which often occurs as a consequence of some retinal diseases and following retinal detachment.

On March 1, 2013, we entered into an asset purchase agreement with OPKO pursuant to which we have acquired substantially all of OPKO s RNAi-related assets, including patents, licenses, clinical and preclinical data and other assets (the **OPKO Asset Purchase**). The assets purchased from OPKO are at an early stage of development, and we expect to commence development work with preclinical testing to identify potential lead compounds and targets.

Reverse Stock Split

On July 18, 2013, the Board of Directors of the Company approved a 1-for-30 reverse stock split of the Company s outstanding common stock, which was effected on July 23, 2013. Stockholders entitled to fractional shares as a result of the reverse stock split were entitled to receive a cash payment in lieu of receiving fractional shares. Shares of common stock underlying outstanding stock options and other equity instruments were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased in accordance with the terms of the agreements governing such securities. Shares of common stock reserved for issuance upon the

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conversion of the Company s Series A Preferred Stock were proportionately reduced and the respective conversion prices were proportionately increased. All share and per share amounts in this prospectus and in the financial statements have been retroactively adjusted for all periods presented to give effect to the reverse stock split, including reclassifying an amount equal to the reduction in par value to additional paid-in capital.

Market Opportunity

There are currently no FDA-approved therapeutics in the United States for the treatment and prevention of scars in the skin. However, there are over 42 million procedures in the United States each year that could benefit from a therapeutic that could successfully reduce or prevent scarring; thus, the market potential is quite large. In addition to cosmetic and reconstructive surgeries, medical interventions which could incorporate an anti-scarring agent include scarring that results from trauma, surgery or burns (especially relating to raised or hypertrophic scarring or contracture scarring), surgical revision of existing unsatisfactory scars, and in the treatment, removal and inhibition of keloids (scars which extend beyond the original skin injury).

Recent Business Developments

During 2012 and so far during 2013, we announced several important developments that are outlined below.

In April 2012, we completed the offering and sale of our Series A Convertible Preferred Stock. Pursuant to the Series A SPA, dated as of September 24, 2011, by and among the Investors, on April 27, 2012, the Investors purchased a total of 9,500 shares of Series A Preferred Stock in consideration for $9.5 million, payable in cash and through the extinguishment of approximately $1 million of aggregate indebtedness owed to the Investors by the Company.

In April 2012, we completed our spinoff from Galena.

In May 2012, our common stock began trading under the symbol RXII on the OTCQB tier of the OTC Markets Group Inc.

In May 2012, we presented new preclinical data at the annual meeting of the Association for Research in Vision and Ophthalmology (ARVO). The preclinical data showed a reduction of VEGF mRNA as a consequence of targeted reduction of CTGF in the rodent retina following intraocular administration of RXI-109.

In June 2012, we appointed two independent directors to our Board of Directors, Mr. Robert Bitterman and Mr. Keith Brownlie.

In June 2012, we initiated Study 1201, our first clinical trial with RXI-109. The trial was designed to evaluate the safety and tolerability of several single-dose levels of RXI-109 in humans and showed that RXI-109 significantly reduced the expression of CTGF protein in the wound area in a dose dependent manner 84 days after a single dose, suggesting a potent and long lasting effect on this key biomarker for abnormal scarring.

In July 2012, we appointed two new members to our SAB, Dr. Jeannette Graf, M.D. and Dr. Leroy Young, M.D., and re-appointed Craig Mello, Ph.D., Nobel Laureate for the discovery of the RNAi mechanism, as Chairman of the SAB.

In September 2012, we received an SBIR grant from the NCI of the NIH. The grant provides approximately $300,000 in funding for a project enabling the discovery and preclinical development of sd-rxRNAs® as potential therapy for retinoblastoma, a pediatric ocular malignancy. The project will be completed in collaboration with Dr. David Cobrinik and colleagues at USC Children s Hospital, Los Angeles and the Memorial Sloan-Kettering Cancer Center.

In December 2012, we initiated Study 1202, our second Phase 1 clinical trial of RXI-109. Study 1202 was designed to evaluate the safety and tolerability of multi-dose administration of RXI-109 in healthy

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volunteers and may also provide preliminary evidence of reduction of surgical scarring. In this study, multiple dermal injections were well tolerated at all doses, and treatment with RXI-109 resulted in dose dependent silencing of CTGF mRNA in the treated areas 3 days after the third dose.

In March 2013, we entered into an asset purchase agreement with OPKO pursuant to which we have acquired substantially all of OPKO s RNAi-related assets, including patents, licenses, clinical and preclinical data and other assets.

In March 2013, we raised $16.4 million in a financing led by OPKO Health, Inc. and Frost Gamma Investments Trust, a trust controlled by Phillip Frost, M.D., as described more fully below.

In April 2013, we appointed two independent directors to our Board of Directors, Mr. Paul Dorman and Mr. Curtis Lockshin.

In June 2013, we announced positive results in our first double blind study in healthy volunteers with RXI-109.

In June 2013, our common stock began trading on the OTCQX tier of the OTC Markets Group Inc.

In July 2013, we completed a 1-for-30 reverse stock split of our outstanding common stock, which was effected on July 23, 2013.

In July 2013, we announced positive results in our second double blind study in healthy volunteers with RXI-109.

Financial Condition

We have generated significant losses to date, have not generated any product revenue to date and may not generate product revenue in the foreseeable future, if ever. We expect to incur significant operating losses as we advance our product candidates through the drug development and regulatory process. We will need to generate significant revenues to achieve profitability and might never do so. In the absence of product revenues, our potential sources of operational funding are expected to be the proceeds from the issuance of debt, sale of equity, funded research and development payments and payments received under partnership and collaborative agreements.

On March 6, 2013, we entered into the Common Stock SPA pursuant to which we agreed to issue 3,765,230 shares of our common stock at a price of $4.35 per share (the **March 2013 Offering**). The gross proceeds from the March 2013 Offering, which closed on March 12, 2013, were approximately $16.4 million, and the net proceeds, after payment of commissions and other costs of the March 2013 Offering, were approximately $15.6 million. We intend to use the proceeds from the March 2013 Offering for general corporate purposes, including the advancement of our RXI-109 program, research and development and general and administrative expenses.

We believe that our existing cash and cash equivalents, including the proceeds from the March 2013 Offering, should be sufficient to fund our operations, including the Phase 2 program for RXI-109, into fiscal 2015. In the future, we will be dependent on obtaining funding from third parties, such as proceeds from the issuance of debt, sale of equity, funded research and development programs and payments under partnership and collaborative research and business development agreements, in order to maintain our operations and meet our obligations to licensors. There is no guarantee that debt, additional equity or other funding will be available to us on acceptable terms, or at all. If we fail to obtain additional funding when needed, we would be forced to scale back, or terminate, our operations or to seek to merge with or to be acquired by another company.

Introduction to the Field of RNAi Therapeutics

RNAi is a naturally occurring phenomenon where short, double-stranded RNA molecules interfere with the expression of targeted genes. RNAi technology takes advantage of this phenomenon and potentially allows us to

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effectively interfere with particular genes within living cells by designing RNA-derived molecules targeting those genes. RNAi offers a novel approach to the drug development process because, as described below under The RNAi Mechanism, RNAi compounds can potentially be designed to target any one of the thousands of human genes, many of which are undruggable by other modalities. The specificity of RNAi is achieved by an intrinsic, well-understood biological mechanism based on designing the sequence of an RNAi compound to match the sequence of the targeted gene. The sequence of the entire human genome is now known, and the mRNA coding sequence for many proteins is already available. Supported by numerous gene-silencing reports and our own research, we believe that this sequence information can be used to design RNAi compounds to interfere with the expression of almost any specific gene.

The RNAi Mechanism

The genome is made of a double-strand of DNA (the double helix) that acts as an instruction manual for the production of the roughly 30,000 to 50,000 human proteins. Proteins are important molecules that allow cells and organisms to live and function. With rare exceptions, each cell in the human body has the entire complement of genes. However, only a subset of these genes directs the production of proteins in any particular cell type. For example, a muscle cell produces muscle-specific protein, whereas a skin cell does not.

In order for a gene to guide the production of a protein, it must first be copied into a single-stranded chemical messenger (messenger RNA or mRNA), which is then translated into protein. RNAi is a naturally occurring process by which a particular messenger RNA can be destroyed before it is translated into protein. The process of RNAi can be artificially induced by introducing a small, double-stranded fragment of RNA corresponding to a particular messenger RNA into a cell. A protein complex within the cell called RISC (RNA-Induced Silencing Complex) recognizes this double-stranded RNA fragment and binds to it. RISC then splits the double strands apart, retaining one strand in the RISC complex. The RISC then helps this guide strand of RNA bind to and destroy its corresponding cellular messenger RNA target. Thus, RNAi provides a method to potentially block the creation of the proteins that cause disease.

Since gene expression controls most cellular processes, the ability to inhibit gene expression provides a potentially powerful tool to treat human diseases. Furthermore, since the human genome has already been decoded, and based on numerous gene-silencing reports, we believe that RNAi compounds can readily be designed to interfere with the expression of any specific gene. Based on our internal research and our review of certain scientific literature, we also believe that our RNAi platform may allow us to develop therapeutics with significant potential advantages over therapeutics developed using traditional methods, including:

- High specificity for targeted genes;
- High potency (low doses);
- Ability to interfere with the expression of potentially any gene;
- Accelerated generation of lead compounds; and
- Low toxicity due to a natural mechanism of action.

RXi s RNAi Therapeutic Platform

RNAi Compound Design

Synthetic RNAi compounds are made from a strand or strands of RNA that are manufactured by a nucleic acid synthesizer. The synthesizer is programmed to assemble a strand of RNA of a particular sequence using primarily four nucleotide units (Adenine (**A**), Uracil (**U**), Cytidine (**C**) and Guanosine (**G**)) that match a small segment of the targeted gene. The hallmark of an RNAi compound is that it has a double-stranded region. The compounds can be of various lengths of nucleotide units (nt) and can contain various modifications of the nucleotide units or linkages. The two strands can have overhangs or blunt ends. A single strand can form an RNAi compound by forming a structure referred to as a hairpin.

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The length and shape of the compound can affect the activity and hence the potency of the RNAi in cells. The first design of RNAi compounds to be pursued for development as human therapeutics were short, double-stranded RNAs that included at least one overhanging single-stranded region and limited modifications, known as small-interfering RNA, or siRNA, which we also refer to as classic siRNA.

We believe that classic siRNAs have drawbacks that may limit the usefulness of those agents as human therapeutics, and that we may be able to utilize the technologies we have licensed and developed internally to optimize RNAi compounds for use as human therapeutic agents. It is the combination of the length, the nucleotide sequence and the configuration of chemical modifications that are important for effective RNAi therapeutics.

Our internal research leads us to believe that next generation rxRNA ® compounds offer significant advantages over classic siRNA used by other companies developing RNAi therapeutics, highlighted by the following characteristics:

Potent RNAi activity;

More resistant to nuclease degradation;

Readily manufactured;

Potentially more specific for the target gene;

More reliable at blocking immune side effects than classic siRNA; and

In the case of sd-rxRNA®, the unique ability to be self-delivering, without the need for any additional delivery vehicle.

Based on our own research, we have developed a variety of novel siRNA configurations with potential advantages for therapeutic use. The first of these has been termed rxRNAori®. This configuration has some similarities to classic siRNA in that it is composed of two, short RNA strands. We have found that by using a somewhat longer length (25-29 bp), removing the overhangs and using proprietary chemical modification patterns, we achieve a higher hit rate of very potent (picomolar potency) compounds in a given target sequence. These rxRNAori® compounds are modified to increase resistance to nucleases and to prevent off-target effects including induction of an immune response. These novel RNAi compounds are distinct from the siRNA compounds used by many other companies developing RNAi therapeutics in that they are designed specifically for therapeutic use and offer many of the properties that we believe are important to the clinical development of RNAi-based drugs.

The second novel configuration has been called sd-rxRNA to indicate its novel self-delivering properties, which make additional delivery vehicles unnecessary for efficient cellular uptake and RISC-mediated silencing. A combination of at least three characteristics is required for activity: (1) specific, proprietary chemical modifications; (2) a precise number of chemical modifications; and (3) reduction in oligonucleotide content. Kinetic analyses of fluorescently-labeled compounds demonstrate that efficient cellular internalization is observed within minutes of exposure. These molecules are taken up efficiently and cause target gene silencing in diverse cell types (cell lines and primary cells). This novel class of RNAi compounds may afford a broad opportunity for therapeutic development.

We believe that both chemical modification and formulation of RNAi compounds may be utilized to develop RNA drugs suitable for therapeutic use. The route by which an RNAi therapeutic is brought into contact with the body depends on the intended organ or tissue to be treated. Delivery routes can be simplified into two major categories: (1) local (when a drug is delivered directly to the tissue of interest); and (2) systemic (when a drug accesses the tissue of interest through the circulatory system). Local delivery may avoid some hurdles associated with systemic approaches such as circulation clearance and tissue extravasation (crossing the endothelial barrier from the blood stream). However, the local delivery approach can only be applied to a limited number of organs or tissues (*e.g.*, skin, eye, lung and potentially the central nervous system).

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The key to therapeutic success with RNAi lies in delivering intact RNAi compounds to the target tissue and the interior of the target cells. To accomplish this, we have developed a comprehensive platform that includes local and systemic delivery approaches. We work with chemically synthesized RNAi compounds that are optimized for stability and efficacy and combine delivery at the site of action and formulation with delivery agents to achieve optimal delivery to specific target tissues.

Local Delivery

sd-rxRNA® molecules have unique properties that improve tissue and cell uptake. Delivery of sd-rxRNA® by a local route of administration may avoid hurdles associated with systemic approaches such as rapid clearance from the bloodstream and inefficient extravasation (*e.g.*, crossing the endothelial barrier from the blood stream). We have studied sd-rxRNA® molecules in a rat model of dermal delivery. Direct application of sd-rxRNA® with no additional delivery vehicle to the skin (incision introduced) demonstrates that target gene silencing can be measured after local administration. The dose levels required for these direct-injection methods are small and suitable for clinical development, suggesting that local delivery indications will be very accessible with the sd-rxRNA® technology platform. Target tissues that are potentially accessible for local delivery using sd-rxRNA® compounds include the skin, the eye, the lung, the CNS, mucosal tissues, sites of inflammation and tumors (direct administration).

Systemic Delivery

Systemic delivery occurs when a drug accesses the tissue of interest through the circulatory system. In some cases, such as in targeting a treatment to the liver, the optimal route of delivery may be by a systemic route. We have developed a portfolio of systemic delivery solutions utilizing our RNAi therapeutic platforms. One novel approach involves the use of sd-rxRNA® compounds. The self-delivering technology introduces properties required for *in vivo* efficacy such as cell and tissue penetration and improved blood clearance and distribution properties. Systemic delivery of these compounds to mice has resulted in gene specific inhibition in the liver with no additional delivery vehicle required, albeit at high concentrations. A proof-of-concept study using rxRNA® in conjunction with a standard lipid-based delivery vehicle has enabled us to demonstrate gene-specific inhibition in liver at much lower doses in a mouse model after intravenous, system delivery. While delivery of RNAi to the liver may be critical for the treatment of many diseases, additional target tissues that are potentially accessible using rxRNA® compounds by systemic delivery include kidney, fat, heart, lung, bone marrow, sites of inflammation, tumors and vascular endothelium.

Intellectual Property

We protect our proprietary information by means of United States and foreign patents, trademarks and copyrights. In addition, we rely upon trade secret protection and contractual arrangements to protect certain of our proprietary information and products. We have pending patent applications that relate to potential drug targets, compounds we are developing to modulate those targets (described throughout herein as rxRNA®), methods of making or using those compounds and proprietary elements of our drug discovery platform.

Much of our technology and many of our processes depend upon the knowledge, experience and skills of key scientific and technical personnel. To protect our rights to our proprietary know-how and technology, we require all employees, as well as our consultants and advisors when feasible, to enter into confidentiality agreements that require disclosure and assignment to us of ideas, developments, discoveries and inventions made by these employees, consultants and advisors in the course of their service to us, and we vigorously defend that position with partners, as well as with employees who leave the Company.

We have also obtained rights to various patents and patent applications under licenses with third parties, which require us to pay royalties or milestone payments, or both. The degree of patent protection for biotechnology products and processes, including ours, remains uncertain, both in the United States and in other important markets, because the scope of protection depends on decisions of patent offices, courts and lawmakers in these countries. There is no certainty that our existing patents or others, if obtained, will afford us substantial

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protection or commercial benefit. Similarly, there is no assurance that our pending patent applications or patent applications licensed from third parties will ultimately be granted as patents or that those patents that have been issued or are issued in the future will stand if they are challenged in court. We assess our license agreements on an ongoing basis, and may from time to time terminate licenses to technology that we do not intend to employ in our immunotherapy or RNAi technology platforms, or in our product discovery or development activities.

Patents and Patent Applications

We are actively prosecuting eleven patent families covering our rxRNA® compounds and technologies, including RXI-109. Additionally, as part of our acquisition of the OPKO RNAi-related assets in March 2013, we acquired rights to a total of 97 patents and 62 patent applications. A summary of these patents and patent applications is set forth below in the following table.

	RXi Platform Pending Applications	OPKO Platform Pending Applications	OPKO Platform Issued Patents
United States	12	14	13
Canada	4	6	0
Europe	5	11	71
Japan	4	9	0
Other Markets	4	22	13

RXi RNAi Platform Patent Applications

Our portfolio does not include any issued patents. The patent applications encompass what we believe to be important new RNAi compounds and their use as therapeutics, chemical modifications of RNAi compounds that improve the compounds suitability for therapeutic uses (including delivery) and compounds directed to specific targets (*i.e*., that address specific disease states). Any patents that may issue from these pending patent applications will be set to expire between 2028 and 2031, not including any patent term extensions that may be afforded under the Federal Food, Drug and Cosmetic Act (and the equivalent provisions in foreign jurisdictions) for any delays incurred during the regulatory approval process relating to human drug products (or processes for making or using human drug products).

OPKO RNAi Platform Patent Applications

The OPKO RNAi patents and patent applications encompass 12 patent families, covering RNAi compounds and their use as therapeutics and compounds directed to specific targets (*i.e*., that address specific disease states). The patents and any patents that may issue from the pending applications will be set to expire between 2022 and 2030, not including any patent term extensions that may be afforded under the Federal Food, Drug and Cosmetic Act (and the equivalent provisions in foreign jurisdictions) for any delays incurred during the regulatory approval process relating to human drug products (or processes for making or using human drug products).

License Agreements

We have secured exclusive and non-exclusive rights to develop RNAi therapeutics by licensing key RNAi technologies and patent rights from third parties. These rights relate to chemistry and configuration of RNAi compounds, delivery technologies of RNAi compounds to cells and therapeutic targets. As we continue to develop our own proprietary compounds, we continue to evaluate both our in-licensed portfolio as well as the field for new technologies that could be in-licensed to further enhance our intellectual property portfolio and unique position in the RNAi space.

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University of Massachusetts Medical School. We hold a non-exclusive license from the University of Massachusetts Medical School (**UMMS**). This license grants to us rights under certain UMMS patent applications to make, use and sell products related to applications of RNAi technologies in particular fields, including HCMV and retinitis, amyotrophic lateral sclerosis, known as ALS or Lou Gehrig s Disease, diabetes and obesity. Throughout the term of the license, we must pay UMMS an annual maintenance fee of $15,000. We also will be required to pay to UMMS customary royalties of up to 10% of: (i) any future net sales of licensed products; (ii) income received from any sublicensees under this license; and (iii) net sales of commercial clinical laboratory services, subject to a minimum royalty of $50,000 beginning in 2016. We also agreed to pay expenses incurred by UMMS in prosecuting and maintaining the licensed patents.

The UMMS license was effective on April 15, 2003, and will remain in effect until the expiration of all issued patents within the patent rights (as defined), unless earlier terminated in accordance with the provisions of the license. In the event that either party commits a material breach of its obligations under the UMMS license and fails to cure that breach within 60 days after receiving written notice thereof, the other party may terminate the UMMS license immediately upon written notice to the party in breach.

The UMMS license may be amended, supplemented, or otherwise modified only by signed written agreement of the parties.

Dharmacon. We have entered into a license agreement with Dharmacon, Inc. (now part of Thermo Fisher Scientific Inc.), pursuant to which we obtained an exclusive license to certain RNAi sequences for a number of target genes for the development of our rxRNA® compounds. Furthermore, we hold the right to license additional RNAi sequences, under the same terms, disclosed by Thermo Fisher Scientific Inc. in its pending patent applications against target genes and have received an option for exclusivity for other siRNA configurations. As partial consideration for this license, we have agreed to pay future clinical milestone payments in an aggregate amount of up to $2,000,000 and royalty payments of either 0.25% or 0.5% based on the level of any future sales of siRNA compositions developed in connection with the licensed technology.

The Dharmacon license may be amended, supplemented or otherwise modified only by signed written agreement of the parties. The Dharmacon license will remain in effect for the duration of any patents issued with respect to the technologies covered by such agreement, unless otherwise terminated earlier by us. During the second quarter of 2013, the Company terminated the license agreement with Dharmacon, Inc.

Advirna. We have entered into agreements with Advirna, LLC pursuant to which Advirna assigned to us its existing patent and technology rights related to sd-rxRNA® technology in exchange for our agreement to pay Advirna an annual maintenance fee of $100,000 and a one-time milestone payment of $350,000 upon the issuance of the first patent with valid claims covering the assigned technology. Additionally, we will be required to pay a 1% royalty to Advirna on any licensing revenue received by us with respect to future licensing of the assigned Advirna patent and technology rights. We also granted back to Advirna a license under the assigned patent and technology rights for fields of use outside human therapeutics and diagnostics, and issued to Advirna, upon the completion of the spin-off transaction from Galena, 1,394,997 shares of common stock.

Our rights under the Advirna agreement will expire upon the later of: (i) the expiration of the last-to-expire of the patent rights (as defined) included in the Advirna agreement; or (ii) the abandonment of the last-to-be abandoned of such patents, unless earlier terminated in accordance with the provisions of the agreement.

We may terminate the Advirna agreement at any time upon 90 days written notice to Advirna, and Advirna may terminate the agreement upon 90 days prior written notice in the event that we cease using commercially reasonable efforts to research, develop, license or otherwise commercialize the patent rights or royalty-bearing products (as defined), provided that we may refute such claim within such 90-day period by showing budgeted expenditures for the research, development, licensing or other commercialization consistent with other technologies of similar stage of development and commercial potential as the patent rights or royalty-bearing

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products. Further, either party at any time may provide to the other party written notice of a material breach of the agreement. If the other party fails to cure the identified breach within 90 days after the date of the notice, the aggrieved party may terminate the agreement by written notice to the party in breach.

The Advirna agreement may only be altered or supplemented by written mutual agreement by the parties.

OPKO. In March 2013, we acquired from OPKO substantially all of its RNAi-related assets, which included patents and patent applications, licenses, clinical and preclinical data and other related assets (collectively, the **OPKO RNAi Assets**). In exchange for the OPKO RNAi Assets, we issued to OPKO 1,666,666 shares of our common stock (after giving effect to the reverse stock split effected on July 23, 2013) and agreed to pay, if applicable: (i) up to $50,000,000 in development and commercialization milestones for the successful development and commercialization of each Qualified Drug (as defined in the Asset Purchase Agreement with OPKO) (collectively, the Milestone Payments); and (ii) royalty payments equal to: (a) a mid-single-digit percentage of Net Sales (as defined in the Asset Purchase Agreement) with respect to each Qualified Drug sold for an ophthalmologic use during the applicable Royalty Period (as defined in the Asset Purchase Agreement); and (b) a low-single-digit percentage of Net Sales with respect to each Qualified Drug sold for a non-ophthalmologic use during the applicable Royalty Period (collectively, the Royalty Payments). The OPKO RNAi Assets are at an early stage of development, and we expect to commence development work with preclinical testing to identify potential lead compounds and targets.

Research and Development

To date, our research programs have focused on identifying product candidates and optimizing the delivery method and technology necessary to make RNAi compounds available by local or systemic administration, as appropriate, for diseases for which we intend to develop an RNAi therapeutic. Since we commenced operations, research and development has comprised a significant proportion of our total operating expenses and is expected to comprise the majority of our spending for the foreseeable future.

There are risks in any new field of drug discovery that preclude certainty regarding the successful development of a product. We cannot reasonably estimate or know the nature, timing and costs of the efforts necessary to complete the development of, or the period in which material net cash inflows are expected to commence from, any product candidate.

For more information on our research and development activity, see Management s Discussion and Analysis of Financial Condition and Results of Operations Research and Development in this prospectus.

Competition

We believe numerous companies are investigating or plan to investigate a variety of proposed anti-scarring therapies in clinical trials. The companies include large and small pharmaceutical, chemical and biotechnology companies, as well as universities, government agencies and other private and public research organizations. Such companies include Renovo Group plc, CoDa Therapeutics, Inc., Sirnaomics, Inc., FirstString Research, Inc., Merz Pharmaceuticals, LLC, Capstone Therapeutics, Halscion, Inc., Garnet Bio Therapeutics, Inc., AkPharma Inc., Promedior, Inc., Kissei Pharmaceutical Co., Ltd., Eyegene, Derma Sciences, Inc., FibroGen, Inc. and Pharmaxon. In particular, Excaliard Pharmaceuticals, Inc., which has been acquired by Pfizer, Inc., has successfully advanced an anti-CTGF antisense oligonucleotide through several Phase 1 and Phase 2 trials and has demonstrated improved scar outcome over placebo.

We believe that other companies working in the RNAi area, generally, include Alnylam Pharmaceuticals, Inc., Marina Biotech, Inc., Tacere Therapeutics, Inc., Benitec Limited, Silence Therapeutics plc, Quark Pharmaceuticals, Inc., Rosetta Genomics Ltd., Lorus Therapeutics, Inc., Tekmira Pharmaceuticals Corporation, Arrowhead Research Corporation, Regulus Therapeutics Inc. and Santaris, as well as a number of large

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pharmaceutical companies. Many other companies are pursuing non-RNAi-based therapies for one or more fibrotic disease indications, including ocular scarring or other indications that we may seek to pursue. See Risk Factors Risks Relating to RXi s Business and Industry.

Government Regulation

The United States and other developed countries extensively regulate the preclinical and clinical testing, manufacturing, labeling, storage, record-keeping, advertising, promotion, export, marketing and distribution of drugs and biologic products. The FDA regulates pharmaceutical and biologic products under the Federal Food, Drug, and Cosmetic Act, the Public Health Service Act and other federal statutes and regulations.

To obtain approval of our future product candidates from the FDA, we must, among other requirements, submit data supporting safety and efficacy for the intended indication as well as detailed information on the manufacture and composition of the product candidate. In most cases, this will require extensive laboratory tests and preclinical and clinical trials. The collection of these data, as well as the preparation of applications for review by the FDA involve significant time and expense. The FDA also may require post-marketing testing to monitor the safety and efficacy of approved products or place conditions on any approvals that could restrict the therapeutic claims and commercial applications of these products. Regulatory authorities may withdraw product approvals if we fail to comply with regulatory standards or if we encounter problems at any time following initial marketing of our products.

The first stage of the FDA approval process for a new biologic or drug involves completion of preclinical studies and the submission of the results of these studies to the FDA. These data, together with proposed clinical protocols, manufacturing information, analytical data and other information submitted to the FDA, in an investigational new drug application (**IND**), must become effective before human clinical trials may commence. Preclinical studies generally involve FDA regulated laboratory evaluation of product characteristics and animal studies to assess the efficacy and safety of the product candidate.

After the IND becomes effective, a company may commence human clinical trials. These are typically conducted in three sequential phases, but the phases may overlap. Phase 1 trials consist of testing the product candidate in a small number of patients or healthy volunteers, primarily for safety at one or more doses. Phase 2 trials, in addition to safety, evaluate the efficacy of the product candidate in a patient population somewhat larger than Phase 1 trials. Phase 3 trials typically involve additional testing for safety and clinical efficacy in an expanded population at multiple test sites. A company must submit to the FDA a clinical protocol, accompanied by the approval of the Institutional Review Boards (**IRB**) at the institutions participating in the trials, prior to commencement of each clinical trial.

To obtain FDA marketing authorization, a company must submit to the FDA the results of the preclinical and clinical testing, together with, among other things, detailed information on the manufacture and composition of the product candidate, in the form of a new drug application (an **NDA**), or, in the case of a biologic, a biologics license application (a **BLA**).

The amount of time taken by the FDA for approval of an NDA or BLA will depend upon a number of factors, including whether the product candidate has received priority review, the quality of the submission and studies presented, the potential contribution that the compound will make in improving the treatment of the disease in question and the workload at the FDA.

The FDA may, in some cases, confer upon an investigational product the status of a fast track product. A fast track product is defined as a new drug or biologic intended for the treatment of a serious or life threatening condition that demonstrates the potential to address unmet medical needs for this condition. The FDA can base approval of an NDA or BLA for a fast track product on an effect on a surrogate endpoint, or on another endpoint that is reasonably likely to predict clinical benefit. If a preliminary review of clinical data suggests that a fast

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track product may be effective, the FDA may initiate review of entire sections of a marketing application for a fast track product before the sponsor completes the application.

We anticipate that our products will be manufactured by our strategic partners, licensees or other third parties. Before approving an NDA or BLA, the FDA will inspect the facilities at which the product is manufactured and will not approve the product unless the manufacturing facilities are in compliance with the FDA s current good manufacturing practices (**cGMP**), which are regulations that govern the manufacture, holding and distribution of a product. Manufacturers of biologics also must comply with the FDA s general biological product standards. Our manufacturers also will be subject to regulation under the Occupational Safety and Health Act, the Nuclear Energy and Radiation Control Act, the Toxic Substance Control Act and the Resource Conservation and Recovery Act and other applicable environmental statutes. Following approval, the FDA periodically inspects drug and biologic manufacturing facilities to ensure continued compliance with the good manufacturing practices regulations. Our manufacturers will have to continue to comply with those requirements. Failure to comply with these requirements subjects the manufacturer to possible legal or regulatory action, such as suspension of manufacturing or recall or seizure of product. Adverse patient experiences with the product must be reported to the FDA and could result in the imposition of marketing restrictions through labeling changes or market removal. Product approvals may be withdrawn if compliance with regulatory requirements is not maintained or if problems concerning safety or efficacy of the product occur following approval.

The labeling, advertising, promotion, marketing and distribution of a drug or biologic product also must be in compliance with FDA and Federal Trade Commission requirements which include, among others, standards and regulations for off-label promotion, industry sponsored scientific and educational activities, promotional activities involving the internet, and direct-to-consumer advertising. We also will be subject to a variety of federal, state and local regulations relating to the use, handling, storage and disposal of hazardous materials, including chemicals and radioactive and biological materials. In addition, we will be subject to various laws and regulations governing laboratory practices and the experimental use of animals. In each of these areas, as above, the FDA has broad regulatory and enforcement powers, including the ability to levy fines and civil penalties, suspend or delay issuance of product approvals, seize or recall products and deny or withdraw approvals.

We will also be subject to a variety of regulations governing clinical trials and sales of our products outside the United States. Whether or not FDA approval has been obtained, approval of a product candidate by the comparable regulatory authorities of foreign countries and regions must be obtained prior to the commencement of marketing the product in those countries. The approval process varies from one regulatory authority to another and the time may be longer or shorter than that required for FDA approval. In the European Union, Canada and Australia, regulatory requirements and approval processes are similar, in principle, to those in the United States.

Environmental Compliance

Our research and development activities involve the controlled use of potentially harmful biological materials as well as hazardous materials, chemicals and various radioactive compounds. We are subject to federal, state and local laws and regulations governing the use, storage, handling and disposal of these materials and specific waste products. We are also subject to numerous environmental, health and workplace safety laws and regulations, including those governing laboratory procedures, exposure to blood-borne pathogens and the handling of bio-hazardous materials. The cost of compliance with these laws and regulations could be significant and may adversely affect capital expenditures to the extent we are required to procure expensive capital equipment to meet regulatory requirements.

Human Resources

As of July 1, 2013, we had eleven full-time employees, seven of whom were engaged in research and development, and four of whom were engaged in management, administration and finance. None of our employees is represented by a labor union or covered by a collective bargaining agreement, nor have we experienced any work stoppages.

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MANAGEMENT

Our current executive officers and key employees and their respective ages and positions as of July 1, 2013 are set forth in the following table.

Name	Age	Position
Geert Cauwenbergh, Dr. Med. Sc.	59	President and Chief Executive Officer
Pamela Pavco, Ph.D.	57	Chief Development Officer

Geert Cauwenbergh, Dr. Med. Sc. was appointed to the Board of Directors and was elected as President and Chief Executive Officer of the Company on April 27, 2012. Prior to joining us, from June 2011 to April 2012, Dr. Cauwenbergh was active, through his consulting company Phases123 LLC, in advising various small biotech and healthcare companies. From July 2008 to June 2011, Dr. Cauwenbergh was the Chief Executive Officer of Rhei Pharmaceuticals HK Ltd, a Chinese company that licenses western drugs for development and commercialization in China, and Managing Director of the Center for Medical Innovation, a government subsidized center for translational medicine for the Belgian Region of Flanders. In February 2008 and May 2009, Dr. Cauwenbergh founded Phases123 LLC and Aramis LLC, a dermatology company, respectively. From 2002 to 2008, Dr. Cauwenbergh served as Chief Executive Officer and Chairman of Barrier Therapeutics, Inc., a publicly-traded biopharmaceutical company that he founded in 2001. Barrier, which focused on dermatology drug development, was acquired by Stiefel Laboratories, Inc. in 2008. Prior to founding Barrier, Dr. Cauwenbergh held a number of ascending senior management positions at Johnson & Johnson, where he was employed for 23 years. As Vice President, Research and Development for Johnson & Johnson s Skin Research Center, he was responsible for the worldwide research and development of all skin care products for the Johnson & Johnson consumer companies. He is a member of the board of directors of Moberg Derma AB, a Swedish pharmaceutical company. In 2005, Dr. Cauwenbergh was inducted into the New Jersey High-Tech Hall of Fame, and, from 2009 to 2010, he served as Chairman of the Board of Trustees of BioNJ. He has authored more than 100 publications and has been a guest editor for numerous books addressing mycology and infectious diseases. Dr. Cauwenbergh received his Doctorate in Medical Sciences from the Catholic University of Leuven, Faculty of Medicine (Belgium), where he also completed his masters and undergraduate work.

Pamela Pavco, Ph.D. Dr. Pavco currently serves as our Chief Development Officer. Prior to this, Dr. Pavco served as our Senior Vice President of Pharmaceutical Development from September 24, 2011 until April 2012. From March 2007 to September 24, 2011, she served as the Vice President of Pharmaceutical Development of Galena Biopharma, Inc. Dr. Pavco has over 20 years of research and development experience in oligonucleotides. Dr. Pavco was Senior Director, Research and Development Project Management at Sirna Therapeutics, Inc., from 2002 until 2006, when it was acquired by Merck & Co., Inc. for $1.1 billion. While at Sirna, she was responsible for the discovery research and development of Sirna-027, the first chemically modified siRNA to enter clinical trials. Dr. Pavco also managed Sirna s alliance with Allergan, Inc. that was initiated to continue discovery research in the area of ophthalmology and take Sirna-027 forward into Phase 2 clinical studies. While at Sirna, Dr. Pavco served in various additional capacities, including Director of Biology Research and Director of Pharmacology and she also managed numerous corporate collaborations and internal programs focusing on the development of therapeutic oligonucleotides in the fields of oncology, anti-angiogenesis, hepatitis, respiratory disease and Huntington s disease. Dr. Pavco has authored numerous scientific articles and contributed to approximately 58 patents and patent applications in the oligonucleotide therapeutics field. Dr. Pavco received a Ph.D. in Biochemistry from Virginia Commonwealth University in 1983 and did her post-doctoral work at Duke University. She is a member of the American Association of Cancer Research and the Association for Research and Vision in Ophthalmology.

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EXECUTIVE COMPENSATION

The following describes the compensation earned in fiscal 2012 by each of the current and former executive officers identified below in the Summary Compensation Table, who are referred to collectively as our named executive officers. Our named executive officers with respect to the fiscal year that ended on December 31, 2012 are Geert Cauwenbergh, Dr. Med. Sc., President, Chief Executive Officer, acting Chief Financial Officer and Director, and Pamela Pavco, Ph.D., Chief Development Officer, Anastasia Khvorova, Ph.D., our former Chief Scientific Officer, and Mark J. Ahn, our former President and Chief Financial Officer. Dr. Ahn served as our President and Chief Financial Officer from September 24, 2011 to April 27, 2012. During that time, Dr. Ahn also served as the President and Chief Executive Officer of Galena and, as a result, was not compensated by us for his services. Anastasia Khvorova and Pamela Pavco became employed by us on September 24, 2011, and Dr. Khvorova served with the Company until April 27, 2012. On April 27, 2012, Dr. Cauwenbergh was appointed our President and Chief Executive Officer concurrent with Dr. Ahn s resignation.

The principal terms of our employment agreements with Drs. Cauwenbergh, Pavco and Khvorova are described below in the Executive Compensation Employment Agreements section of this prospectus.

Summary Compensation Table

Name and Principle Position	Year	Salary ($)	Bonus ($)	Stock Awards ($) (2)	Option Awards ($) (4)	All Other Compensation ($)	Total ($)
Geert Cauwenbergh, Dr. Med. Sc. (7) President and Chief Executive Officer	2012	236,769	180,000(10)		2,114,207	535(9)	2,531,511
Pamela Pavco, Ph.D.	2012	300,000	90,000(10)		1,590,561	275(6)	1,980,836
Chief Development Officer	2011	292,500(1)	7,255(1)		90,304(5)	300(6)	390,359
Anastasia Khvorova, Ph.D. (8)	2012	130,229				75(6)	130,304
Former Chief Scientific Officer	2011	331,667(1)	7,326(1)	50,000(3)		300(6)	389,293

(1) The salary and bonus attributable to the period prior to September 24, 2011 were paid by Galena, our predecessor. Drs. Khvorova and Pavco served in the capacities indicated with Galena during that period.
(2) The amounts shown reflect the grant date fair value computed in accordance with FASB ASC 718 for the indicated year.
(3) Represents shares of common stock of Galena, our predecessor.
(4) The amounts shown reflect the grant date fair value computed in accordance with FASB ASC 718 for the indicated year, adjusted to disregard the effects of any estimate of forfeitures related to service-based vesting. The assumptions we used in valuing options are described more fully in the Management s Discussion and Analysis section and the Notes to Financial Statements included elsewhere in this prospectus.
(5) Represents options to purchase common stock of Galena, our predecessor.
(6) Represents amounts for the dollar value of life insurance premiums paid.
(7) Dr. Cauwenbergh was appointed our President and Chief Executive Officer on April 27, 2012, concurrent with Dr. Ahn s resignation. As such, he received no executive compensation during fiscal 2011, and figures for fiscal 2012 are stated as of April 27, 2012.
(8) Dr. Khvorova served with the Company until April 27, 2012.
(9) Represents amounts for the dollar value of life insurance premiums paid and $335 as a gross-up for the related tax liability in 2012 in connection with Dr. Cauwenbergh s health insurance premiums.
(10) The amount of bonus was determined on June 7, 2013 at our Annual Meeting of Stockholders.

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Outstanding Equity Awards at Fiscal Year-End

The following table shows information regarding outstanding equity awards at December 31, 2012 for our named executive officers:

	Option Awards				Number of Shares or Units of Stock that Have Not Vested (#)	Market Value of Shares or Units of Stock that Have Not Vested ($) (1)
Name	Number of Securities Underlying Unexercised Options Exercisable	Unexercisable	Option Exercise Price ($)	Option Expiration Date		
Geert Cauwenbergh, Dr. Med. Sc. (2)		1,138,506	$ 2.55	06/08/2022	1,138,506	$ 2,561,639
Pamela Pavco, Ph.D. (3)	174,404	383,687	$ 3.90	05/04/2022	383,687	$ 863,296
Anastasia Khvorova, Ph.D.			$			$

(1) Calculated by multiplying the number of unvested shares by $2.25, the closing price per share of our common stock on the OTCQB on December 31, 2012.

(2) Dr. Cauwenbergh s options vested in a one-quarter installment of 284,626 shares on April 27, 2013 and 35 equal monthly installments thereafter of 23,718 shares beginning on May 27, 2013 with the last monthly installment of 23,750 shares on April 27, 2016.

(3) Dr. Pavco s option is exercisable as to 244,146 shares as of July 1, 2013. The remainder of the award will vest in 26 equal monthly installments of 11,626 shares beginning on July 24, 2013 with the last monthly installment of 11,669 shares on September 24, 2015.

Nonqualified Deferred Compensation

We do not have any nonqualified deferred compensation plans.

Employment and Change of Control Agreements

Geert Cauwenbergh, Dr. Med. Sc.

Dr. Cauwenbergh was appointed Chief Executive Officer pursuant to an employment agreement, dated April 27, 2012, pursuant to which he is entitled to receive an initial base salary of $360,000 per annum, as well as a performance bonus of up to 50% of his base salary, subject to the achievement of performance goals to be established annually. On June 8, 2012, Dr. Cauwenbergh received an option entitling him to purchase 1,138,506 shares of Company common stock at an exercise price equal to the fair value of the underlying common stock on the date of grant. The option vested and became exercisable with respect to one quarter of the underlying shares on April 27, 2013, and then will vest on a ratable basis monthly thereafter over the next three years such that the option is fully vested and exercisable on April 27, 2016.

Dr. Cauwenbergh s employment agreement provides that, upon termination of Dr. Cauwenbergh s employment without cause (as defined) by us or by Dr. Cauwenbergh for good reason (as defined), he will be entitled to payment of: (1) any accrued but unpaid salary, business expenses and unused vacation as of the date of his termination as well as any unpaid bonus compensation awarded for the prior year; (2) six months of salary from the date of termination; and (3) continued participation, at our expense, during the applicable severance period in our sponsored group medical and dental plans. In the event his employment is terminated within twelve months following a change of control of RXi, he will be entitled to: (x) twelve months of salary from the date of termination; (y) accelerated vesting of any unvested RXi stock options held by him; and (z) continued participation, at our expense, during the severance period in our sponsored group medical and dental plans.

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Anastasia Khvorova, Ph.D.

Dr. Khvorova served as our Senior Vice President and Chief Scientific Officer until April 27, 2012. Under her employment agreement, Dr. Khvorova was entitled to receive an annual salary of $310,000. She was also entitled to receive an option to purchase up to 2% of the fully diluted common stock of RXi. Due to Dr. Khvorova s termination of employment on April 27, 2012, the option was never granted. Dr. Khvorova received no consideration from RXi in connection with the termination of her employment.

Pamela Pavco, Ph.D.

Dr. Pavco serves as our Chief Development Officer. Under her employment agreement dated September 24, 2011, Dr. Pavco receives an annual salary of $300,000. She also received an option to purchase up to 558,091 shares of common stock at an exercise price equal to the fair value of the underlying common stock on the date of grant. The option is exercisable as to 244,146 shares as of July 1, 2013 and the remainder will vest in equal monthly installments of 11,626 shares beginning July 24, 2013 with a final monthly installment of 11,669 shares on September 24, 2015, subject to accelerated vesting in some events.

Dr. Pavco s employment agreement provides that, upon termination of Dr. Pavco s employment without cause (as defined) by us or by Dr. Pavco for good reason (as defined), she will be entitled to payment of: (1) any accrued but unpaid salary and unused vacation as of the date of her termination; (2) twelve months (in the event of such termination within twelve months of the effective date of her employment) or six months (in the event of such termination after twelve months from the effective date of her employment), as the case may be, of salary from the date of termination; and (3) continued participation, at our expense, during the applicable severance period in our sponsored group medical and dental plans. In the event her employment is terminated within twelve months following a change of control of RXi, she will be entitled to: (x) twelve months of salary from the date of termination; (y) accelerated vesting of any unvested RXi stock options held by her as to 50% of the unvested option shares or the portion of the unvested option shares that would have vested over the following twenty-four months, whichever is greater; and (z) continued participation, at our expense, during the severance period in our sponsored group medical and dental plans.

DIRECTOR COMPENSATION

Dr. Ahn received no compensation from us for his service as our director. Similarly, as our only director who is also an employee, Dr. Cauwenbergh receives no separate compensation for board service.

Non-Employee Director Compensation

Messrs. Brownlie and Bitterman were appointed to the Board on June 18, 2012 and June 19, 2012, respectively. The Company has entered into an agreement with each of Messrs. Brownlie and Bitterman pursuant to which each will receive the following compensation for their service on the Board: (i) an annual retainer of $20,000, payable in quarterly installments of $5,000, (ii) a one-time option grant representing the right to purchase up to 33,333 shares of common stock, which options will vest quarterly over a one-year period and will be granted pursuant to the Company s 2012 Incentive Plan, and (iii) commencing in 2013, an annual option grant representing the right to purchase up to 16,666 shares of common stock, which options will vest quarterly over a one-year period and will also be granted pursuant to the 2012 Incentive Plan.

Mr. Dorman and Dr. Lockshin were each appointed to the Board on April 18, 2013. The Company has entered into an agreement with each of Mr. Dorman and Dr. Lockshin pursuant to which each will receive the following compensation for their service on the Board: (i) an annual retainer of $20,000, payable in quarterly installments of $5,000, (ii) a one-time option grant representing the right to purchase up to 33,333 shares of common stock, which options will vest quarterly over a one-year period and will be granted pursuant to the

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Company s 2012 Incentive Plan, and (iii) commencing in 2014, an annual option grant representing the right to purchase up to 16,666 shares of common stock, which options will vest quarterly over a one-year period and will also be granted pursuant to the 2012 Incentive Plan.

Non-employee directors are also reimbursed for their travel and reasonable out-of-pocket expenses incurred in connection with attending Board and committee meetings and in attending continuing education seminars, to the extent that attendance is required by the Board or the committee(s) on which that director serves.

The Compensation Committee and the Board reassess the appropriate level of equity compensation for non-employee directors on an annual basis. Future equity compensation payments will be determined on a year-by-year basis for the foreseeable future due to the volatility of the Company s stock price.

The following table shows the compensation paid in fiscal year 2012 to the Company s non-employee directors:

Director Compensation Name	Fees Earned or Paid in Cash	Option Awards($) (1)	Total ($)
Keith L. Brownlie	$ 10,000	52,100	62,100
Robert J. Bitterman	$ 10,000	58,300	68,300
H. Paul Dorman (2)	$		
Curtis A. Lockshin, Ph.D. (2)	$		

(1) The value of the option awards has been computed in accordance with FASB ASC 718, excluding the effect of estimated forfeitures. The assumptions we used in valuing options are described more fully in the Management s Discussion and Analysis section and the Notes to Financial Statements included in elsewhere in this prospectus.

(2) Mr. Dorman and Dr. Lockshin were appointed to the Board in 2013, and thus received no compensation for Board service in fiscal year 2012.

CERTAIN RELATIONSHIPS AND RELATED-PARTY TRANSACTIONS

Agreements with Galena Biopharma, Inc. (*Galena*)

Prior to the completion of our spin-off from Galena, Galena was the owner of all of our outstanding capital stock. On September 24, 2011, we entered into a contribution agreement with Galena pursuant to which:

Galena assigned and contributed to us substantially all of its RNAi-related technologies and assets, which consist primarily of novel RNAi compounds and licenses from Dharmacon, Inc., Northwestern University, the Carnegie Institute of Washington, and the University of Massachusetts Medical School relating to its RNAi technologies, as well as the lease of its former Worcester, Massachusetts laboratory facility, fixed assets and other equipment located at the facility and its employment arrangements with certain scientific, corporate and administrative personnel who have become our employees, as well as research grants from the National Institute of Neurological Disorders and Stroke, National Institute of Allergy and Infectious Diseases, and the National Institute of General Medical Sciences of approximately $800,000 that were subject to the approval of the granting institutions, which was received in 2012; and

We agreed to assume certain accrued expenses of the RXI-109 development program and all future obligations under the contributed licenses, employment arrangements and other agreements, and we agreed to make future milestone payments to Galena of up to $45 million, consisting of two one-time payments of $15 million and $30 million, respectively, if we achieve annual net sales equal to or greater than $500 million and $1 billion, respectively, of any covered products that may be developed with the contributed RNAi technologies.

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Advirna Agreement

As part of the transactions contemplated by the contribution and securities purchase agreements, on September 24, 2011, we entered into agreements with Advirna, pursuant to which:

- Advirna assigned to us its existing patent and technology rights related to sd-rxRNA® technology in exchange for our agreement to pay Advirna an annual $100,000 maintenance fee and a one-time $350,000 milestone payment upon the future issuance of the first patent with valid claims covering the assigned patent and technology rights;

- We are required to pay a 1% royalty to Advirna for any licensing revenue received by us with respect to future licensing of the assigned Advirna patent and technology rights;

- We have granted back to Advirna a license under the assigned patent and technology for fields of use outside the fields of human therapeutics and diagnostics; and

- We agreed to issue to Advirna, upon the completion of the spin-off transaction, shares of our common stock equal to approximately 5% of the fully diluted shares of RXi common stock assuming the conversion in full of all outstanding Series A Preferred Stock.

See Business Intellectual Property License Agreements; Advirna elsewhere in this prospectus for more information about our license from Advirna.

Anastasia Khvorova, Ph.D., our former Senior Vice President and Chief Scientific Officer, is a director and 50% owner of Advirna. Dr. Khvorova s husband is the other director and 50% owner of Advirna.

Review and Approval of Related Party Transactions

Our Board of Directors has a policy to review and approve all transactions with directors, officers and holders of more than 5% of our voting securities and their affiliates. The policy provides that, prior to board consideration of a transaction with such a related party, the material facts as to the related party s relationship or interest in the transaction must be disclosed to the board, and the transaction will not be considered approved by the board unless a majority of the directors who are not interested in the transaction (if applicable) approve the transaction. Furthermore, when stockholders are entitled to vote on a transaction with a related party, the material facts of the related party s relationship or interest in the transaction must be disclosed to the stockholders, who must approve the transaction in good faith.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

Based on information available to us and filings with the SEC, the following table sets forth certain information regarding the beneficial ownership (as defined by Rule 13d-3 under the Securities Exchange Act of 1934) of our outstanding common stock for (i) each of our directors, (ii) each of our named executive officers, as defined in the Executive Compensation section above, (iii) all of our directors and executive officers as a group and (iv) persons known to us to beneficially own more than 5% of our outstanding common stock. The following information is presented as of July 1, 2013 or such other date as may be reflected below.

Beneficial ownership and percentage ownership are determined in accordance with the rules of the SEC and include voting or investment power with respect to shares of stock. This information does not necessarily indicate beneficial ownership for any other purpose. Under these rules, shares of common stock issuable under stock options or warrants that are exercisable within 60 days of July 1, 2013 are deemed outstanding for the purpose of computing the percentage ownership of the person holding the options or warrants, but are not deemed outstanding for the purpose of computing the percentage ownership of any other person.

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Unless otherwise indicated and subject to applicable community property laws, to our knowledge, each stockholder named in the following table possesses sole voting and investment power over their shares of common stock, except for those jointly owned with that person s spouse. Unless otherwise indicated below, the address of each person listed on the table is c/o RXi Pharmaceuticals Corporation, 1500 West Park Drive, Suite 210, Westborough, MA 01581.

	Shares Beneficially Owned	
Name and Address of Beneficial Owner	**Number (1)**	**Percent of Class (2)**
Greater than 5% Holders		
OPKO Health, Inc. (3)	2,241,378	19.592%
Broadfin Capital, LLC (4)	1,034,482	9.043%
Advanced RNA Technologies, LLC (5)	1,326,943	11.599%
Galena Biopharma, Inc. (6)	1,079,769	9.439%
Tang Capital Partners, LP (7)	1,168,786	9.999%
RTW Investments, LLC (8)	603,055	5.036%
Directors, Officers and Named Executive Officers:		
Mark J. Ahn (9)	2,042	*
Anastasia Khvorova, Ph.D. (10)	1,326,943	11.599%
Geert Cauwenbergh, Dr. Med. Sc. (11)	387,835	3.281%
Keith L. Brownlie (12)	33,333	*
Robert J. Bitterman (13)	33,333	*
H. Paul Dorman(14)	8,333	*
Curtis A. Lockshin, Ph.D. (15)	8,333	*
Pamela J. Pavco, Ph.D. (16)	273,202	2.332%
All current directors and executive officers as a group (six persons)	744,369	6.115%

* Indicates less than 1%.

(1) Represents shares of common stock and shares of restricted stock held as of July 1, 2013 plus shares of common stock that may be acquired upon exercise of options, warrants and other rights exercisable within 60 days of July 1, 2013.

(2) Based on 11,439,986 shares of the registrant s Common Stock that were issued and outstanding as of July 1, 2013. The percentage ownership and voting power for each person (or all directors and executive officers as a group) is calculated by assuming the exercise or conversion of all options, warrants and convertible securities exercisable or convertible within 60 days of July 1, 2013 held by such person and the non-exercise and non-conversion of all outstanding warrants, options and convertible securities held by all other persons.

(3) Based solely on a Schedule 13G filed with the SEC on March 22, 2013. The address for OPKO Health, Inc. is 4400 Biscayne Boulevard, Miami, Florida 33137.

(4) Based solely on a Schedule 13G filed with the SEC on March 19, 2013. Voting and dispositive power with respect to the shares is shared with Broadfin Healthcare Master Fund, Ltd. and Kevin Kotler. Kevin Kotler is the Managing Member of Broadfin Capital, LLC and Director of Broadfin Healthcare Master Fund, Ltd. The address for Broadfin Capital, LLC is 237 Park Avenue, Suite 900, New York, New York 10017.

(5) Based solely on a Form 4 filed with the SEC on July 3, 2013. Advanced RNA Technologies, LLC is also known as Advirna, LLC. The address for Advanced RNA Technologies, LLC is 1 Kendall Square, Cambridge, MA 02139.

(6) Based solely on a Form 4 filed with the SEC on May 2, 2013. The address for Galena is 310 N. State Street, Suite 208 Lake Oswego, Oregon 97034.

(7) Based on a Schedule 13G filed with the SEC on March 18, 2013, with an update for outstanding shares as of July 1, 2013. Represents 919,736 shares of common stock and 249,050 shares of common stock issuable upon the conversion of shares of Series A Preferred Stock that are owned of record by TCP. In accordance with the conversion limitation contained within the Series A Preferred Stock Certificate of Designations, in no event may TCP convert shares of Series A Preferred Stock into shares of our common stock if such

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conversion would result in beneficial ownership of more than 9.999% of the then issued and outstanding shares of our common stock. This conversion limitation may not be waived and any purported conversion that is inconsistent with this conversion limitation is null and void. Tang Capital Management, LLC is the general partner of TCP. Kevin C. Tang is the Managing Director of Tang Capital Management, LLC. Mr. Tang shares voting and dispositive power over the shares shown with TCP and Tang Capital Management, LLC and, as such, may be deemed to be a beneficial owner of such shares. Mr. Tang disclaims beneficial ownership of such shares, except to the extent of his pecuniary interest therein. The address for each of TCP, Tang Capital Management, LLC and Mr. Tang is c/o Tang Capital Partners, LP, 4747 Executive Drive, Suite 510, San Diego, California 92121.

(8) Based solely on a Schedule 13G filed with the SEC on July 9, 2012, with an update for outstanding shares as of July 1, 2013. Represents shares of common stock issuable upon the conversion of shares of Series A Preferred Stock that are owned of record by RTW. Roderick T. Wong is the Managing Member of RTW Investments, LLC. Mr. Wong has sole voting and investment power over the shares shown and, as such, may be deemed to be a beneficial owner of such shares. The address for each of RTW and Mr. Wong is c/o RTW Investments, LLC is 1350 Avenue of the Americas, 28th Floor, New York, New York 10019.

(9) The address for Dr. Ahn is c/o Galena Biopharma, Inc., 310 N. State Street Suite 208.

(10) The shares shown are held by Advanced RNA Technologies, LLC. Dr. Khvorova is a director and 50% member of Advanced RNA Technologies, LLC and, as such, may be deemed to be a beneficial owner of the shares held by Advanced RNA Technologies, LLC. Advanced RNA Technologies, LLC is also known as Advirna, LLC. The address for Dr. Khvorova is c/o Advanced RNA Technologies, LLC is 1 Kendall Square, Cambridge, MA 02139.

(11) Consists of (a) 8,333 shares of common stock and (b) 379,502 shares of common stock issuable upon the exercise of options exercisable within 60 days of July 1, 2013.

(12) Consists of 33,333 shares of common stock issuable upon the exercise of options exercisable within 60 days of July 1, 2013.

(13) Consists of 33,333 shares of common stock issuable upon the exercise of options exercisable within 60 days of July 1, 2013.

(14) Consists of 8,333 shares of common stock issuable upon the exercise of options exercisable within 60 days of July 1, 2013.

(15) Consists of 8,333 shares of common stock issuable upon the exercise of options exercisable within 60 days of July 1, 2013.

(16) Consists of (a) 3,005 shares of common stock and (b) 270,197 shares of common stock issuable upon the exercise of options exercisable within 60 days of July 1, 2013.

DESCRIPTION OF CAPITAL STOCK

Authorized Capital Stock

Our authorized capital stock consists of 1,500,000,000 shares of common stock, par value $0.0001 per share, and 10,000,000 shares of preferred stock, par value $0.0001 per share, of which 15,000 shares are designated as Series A Convertible Preferred Stock, or **Series A Preferred Stock.** As of March 31, 2013, 10,720,904 shares of our common stock were outstanding, assuming no exercise of stock options or conversion of Series A Preferred Stock, and 9,896 shares of our Series A Preferred Stock were outstanding.

Common Stock

The holders of our common stock are entitled to one vote for each share on all matters voted on by stockholders, including elections of directors, and, except as otherwise required by law or provided in any resolution adopted by our board with respect to any series of preferred stock, the holders of such shares will possess all voting power. Our certificate of incorporation does not provide for cumulative voting in the election of directors. The shares of common stock have no conversion rights or sinking fund provisions and are not liable for further call or assessment. Subject to any preferential rights of any outstanding series of our preferred stock

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created by our board from time to time, the holders of common stock are entitled to such dividends as may be declared from time to time by our board from funds available therefor and upon liquidation are entitled to receive their pro rata share of all assets available for distribution to such holders. Our common stock is not redeemable.

The holders of our common stock have no preemptive rights.

The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Our certificate of incorporation includes a provision permitting our board of directors to effect one or more reverse stock splits on or before July 24, 2013. Such a reverse stock split was effected on July 23, 2013, as described above under Reverse Stock Split.

Preferred Stock

Our board of directors, without further action by the holders of our common stock, may issue shares of our preferred stock in one or more series. Our board is vested with the authority to fix by resolution the designations, preferences and relative, participating, optional or other special rights, and such qualifications, limitations or restrictions thereof, including, without limitation, redemption rights, dividend rights, liquidation preferences and conversion or exchange rights of any class or series of preferred stock, and to fix the number of classes or series of preferred stock, the number of shares constituting any such class or series and the voting powers for each class or series.

The authority possessed by our board to issue preferred stock could potentially be used to discourage attempts by third parties to obtain control of us through a merger, tender offer, proxy contest or otherwise by making such attempts more difficult or more costly. Our board may issue preferred stock with voting rights or conversion rights that, if exercised, could adversely affect the voting power of the holders of common stock. There are no current agreements or understandings with respect to the issuance of preferred stock and our board has no present intention to issue any additional shares of preferred stock except for those from Series A dividends.

Series A Preferred Stock

The Series A Preferred Stock has a face value of $1,000 per share and will accrue dividends at a rate of 7% per annum from the date of issuance through the date of conversion or redemption, payable quarterly in shares of Series A Preferred Stock.

The holders of Series A Preferred Stock do not have any right to elect directors and have only limited voting rights, which consist primarily of the right to vote under certain protective provisions set forth in the Series A Preferred Stock Certificate of Designations (the **Certificate of Designations**), regarding: (i) any proposed amendment to the Series A Preferred Stock or its right and preferences; and (ii) any proposed Deemed Liquidation Event as defined in the Certificate of Designations.

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The Series A Preferred Stock is convertible by a holder at any time into shares of our common stock. The Series A Preferred Stock will convert into our common stock at a rate of 2,437.57 shares per $1,000 of face value to be converted. The conversion rate will be adjusted for certain events, such as stock splits, stock dividends, reclassifications and recapitalizations, and is subject to full-ratchet anti-dilution protection such that any subsequent issuance of common stock at a price, or in the case of common stock equivalents, at an effective conversion price, below the effective conversion price of the Series A Preferred Stock at the time of such issuance automatically adjusts the conversion price of the Series A Preferred Stock to such lower price. A holder of Series A Preferred Stock may not convert its preferred stock to common stock if such conversion would result in the holder beneficially owning more than 9.999% of our then-issued and outstanding shares of common stock. This limitation on conversion may not be waived.

Upon a Liquidation Event (as defined in the Certificate of Designations), no other class or series of capital stock can receive any payment unless the Series A Preferred Stock has first received a payment in an amount equal to $1,000 per share, plus all accrued and unpaid dividends, if applicable.

Anti-Takeover Effects of Provisions of the Certificate of Incorporation and Bylaws

Certificate of Incorporation and Bylaw Provisions. Our certificate of incorporation and bylaws include a number of provisions that may have the effect of encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. They are intended to enhance long-term value to our stockholders by increasing the likelihood of continued stability in the composition of our board of directors and its policies and discouraging certain types of transactions that may involve an actual or threatened acquisition of us. These provisions are also designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and, as a consequence, they also may inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts. These provisions include the items described below.

Filling Vacancies. Any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board of directors, may only be filled by the affirmative vote of a majority of our directors then in office even if less than a quorum.

No Written Consent of Stockholders. Our certificate of incorporation provides that all stockholder actions are required to be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting.

Meetings of Stockholders. Our certificate of incorporation provides that only our board of directors or holders of 5% or more of our outstanding shares of common stock may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our bylaws will limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

Advance Notice Requirements. Our bylaws include advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. The notice must contain certain information specified in the amended and restated bylaws.

Amendment to Bylaws and Certificate of Incorporation. As required by the Delaware General Corporation Law (the **DGCL**) any amendment of our certificate of incorporation must first be approved by a majority of

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our board of directors and, if required by law or our certificate of incorporation, thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment, and a majority of the outstanding shares of each class entitled to vote thereon as a class. Our bylaws may be amended by the affirmative vote of a majority vote of the directors then in office, subject to any limitations set forth in the bylaws.

Blank Check Preferred Stock. Our amended and restated certificate of incorporation provides for 10,000,000 authorized shares of preferred stock, of which 15,000 shares are designated as Series A Preferred Stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest, or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of our company or our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our amended and restated certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring, or preventing a change of control of us.

Delaware Business Combination Statute

Section 203 of the DGCL provides that, subject to exceptions set forth therein, an interested stockholder of a Delaware corporation shall not engage in any business combination, including mergers or consolidations or acquisitions of additional shares of the corporation, with the corporation for a three-year period following the date that such stockholder becomes an interested stockholder unless:

- Prior to such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- Upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, other than statutorily excluded shares; or
- On or subsequent to such date, the business combination is approved by the board of directors of the corporation and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least 66-2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Except as otherwise set forth in Section 203, an interested stockholder is defined to include:

- Any person that is the owner of 15% or more of the outstanding voting stock of the corporation, or is an affiliate or associate of the corporation and was the owner of 15% or more of the outstanding voting stock of the corporation at any time within three years immediately prior to the date of determination; and
- The affiliates and associates of any such person.

The restrictions contained in Section 203 are not applicable to any of our existing stockholders that owned 15% or more of our outstanding common stock upon the completion of our spin-off from Galena.

Section 203 may make it more difficult for a person who would be an interested stockholder to effect various business combinations with a corporation for a three-year period. We have not elected to be exempt from the restrictions imposed under Section 203. The provisions of Section 203 may encourage persons interested in acquiring us to negotiate in advance with our board, since the stockholder approval requirement would be

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avoided if a majority of the directors then in office approves either the business combination or the transaction which results in any such person becoming an interested stockholder. Such provisions also may have the effect of preventing changes in our management. It is possible that such provisions could make it more difficult to accomplish transactions, which our stockholders may otherwise deem to be in their best interests.

Transfer Agent and Registrar

Computershare Trust Company, N.A. is the transfer agent and registrar for our common stock.

MARKET PRICE OF THE REGISTRANT S COMMON EQUITY

Our common stock began trading on the OTCQB tier of the OTC Markets Group Inc. on May 10, 2012 under the symbol RXII . Prior to that time, there was no established public trading market for our common stock. The following table shows the high and low per-share sale prices of our common stock for the periods indicated:

	High	Low
2012		
Second Quarter (from May 10, 2012)	$ 7.050	$ .900
Third Quarter	7.650	2.853
Fourth Quarter	3.585	1,503
2013		
First Quarter	$ 10.740	$ 2.100

On August 7, 2013, the last reported sale price per share of our Common Stock on the OTCQX was $4.00.

Holders

As of July 1, 2013, there were approximately 850 holders of record of our common stock. Because many of our shares are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of individual stockholders represented by these holders of record.

DIVIDEND POLICY

We have never paid any cash dividends and do not anticipate paying any cash dividends on our common stock in the foreseeable future. We expect to retain future earnings, if any, for use in our development activities and the operation of our business. The payment of any future dividends will be subject to the discretion of our board of directors and will depend, among other things, upon our results of operations, financial condition, cash requirements, prospects and other factors that our board of directors may deem relevant. Additionally, our ability to pay future dividends may be restricted by the terms of any debt financing.

LEGAL MATTERS

Certain legal matters relating to the validity of the Shares offered by this prospectus will be passed upon for us by Ropes & Gray LLP, San Francisco, California.

EXPERTS

The financial statements as of December 31, 2012 and 2011 and for the years then ended and for the period from inception (January 1, 2003) through December 31, 2012 included in this prospectus have been so included in reliance on the report of BDO USA, LLP, an independent registered public accounting firm, appearing elsewhere herein, given on the authority of said firm as experts in auditing and accounting.

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WHERE YOU CAN FIND MORE INFORMATION

We are required to comply with the reporting requirements of the Exchange Act and file annual, quarterly and other reports with the SEC. We are also subject to the proxy solicitation requirements of the Exchange Act. We make available free of charge on our website our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. We also deliver to our holders of common stock annual reports containing consolidated financial statements prepared in accordance with United States generally accepted accounting principles and audited and reported on, with an opinion expressed thereto, by an independent registered public accounting firm.

You may read and copy all or any portion of the registration statement, of which this prospectus is a part, or any reports, statements or other information we file with the SEC at the SEC s public reference room at 100 F Street, NE, Washington, DE 20549. You can request copies of these documents upon payment of a duplicating fee, by writing to the SEC. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference rooms. Our SEC filings, including the registration statement, will also be available to you on the SEC s website at *www.sec.gov*. In addition, you may request a copy of these filings (excluding exhibits) at no cost by writing or telephoning us at the following address or telephone number:

RXi Pharmaceuticals Corporation

Investor Relations

1500 West Park Drive, Suite 210

Westborough, Massachusetts 01581

Telephone: (508) 767-3861

We maintain a website at *www.rxipharma.com*. Our website and the information contained on that site, or connected to that site, is not part of or incorporated by reference into this prospectus.

No person is authorized to give any information or to make any representations other than those contained in this prospectus, and, if given or made, such information or representations must not be relied upon as having been authorized. Neither the delivery of this prospectus nor any distribution of securities made hereunder shall imply that there has been no change in the information set forth herein or in our affairs since the date of this prospectus.

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RXi PHARMACEUTICALS CORPORATION (REGISTRANT)

(A Development Stage Company)

CONDENSED BALANCE SHEETS (REGISTRANT)

(Amounts in thousands, except share and per share data)

(Unaudited)

	March 31, 2013	December 31, 2012
ASSETS		
Current assets:		
Cash and cash equivalents	$ 19,643	$ 5,127
Restricted cash	53	53
Prepaid expenses and other current assets	102	212
Total current assets	19,798	5,392
Equipment and furnishings, net	172	198
Other assets	2	2
Total assets	$ 19,972	$ 5,592
LIABILITIES, CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS EQUITY (DEFICIT)		
Current liabilities:		
Accounts payable	$ 366	$ 416
Accrued expenses and other current liabilities	1,126	767
Deferred revenue	464	491
Current maturities of capital lease obligations	2	5
Total current liabilities	1,958	1,679
Deferred revenue, net of current portion		27
Total liabilities	1,958	1,706
Commitments and contingencies		
Series A convertible preferred stock, $0.0001 par value, 10,000,000 shares authorized; 9,896 and 9,726 shares issued and outstanding at March 31, 2013 and December 31, 2012, respectively (Liquidation preference of $9,896 and $9,726 at March 31, 2013 and December 31, 2012, respectively)	9,896	9,726
Stockholders equity (deficit):		
Common stock, $0.0001 par value, 1,500,000,000 shares authorized; 10,720,903 and 5,289,007 shares issued and outstanding at March 31, 2013 and December 31, 2012, respectively	1	
Additional paid-in capital	39,671	11,317
Deficit accumulated during the developmental stage	(31,554)	(17,157)
Total stockholders equity (deficit)	8,118	(5,840)
Total liabilities, convertible preferred stock and stockholders equity (deficit)	$ 19,972	$ 5,592

The accompanying notes are an integral part of these financial statements.

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RXi PHARMACEUTICALS CORPORATION (REGISTRANT) AND PREDECESSOR (RNAi)

(A Development Stage Company)

CONDENSED STATEMENTS OF OPERATIONS

(Amounts in thousands, except share and per share data)

(Unaudited)

	For the Three Months Ended March 31, 2013	For the Three Months Ended March 31, 2012	Predecessor (RNAi) and RXi (Registrant)(1) Period from January 1, 2003 (Date of Inception) to March 31, 2013
Revenues:			
Grant revenues	$ 53	$	$ 150
Total revenues	53		150
Expenses:			
Research and development expenses	1,096	1,017	37,715
Research and development employee stock-based compensation expense	373	38	3,711
Research and development non-employee stock-based compensation expense	52	99	6,150
Fair value of common stock issued in exchange for patent and technology rights	12,250		18,423
Fair value of Parent Company s common stock issued in exchange for licensing rights			3,954
Total research and development expenses	13,771	1,154	69,953
General and administrative expenses	473	674	28,110
General and administrative employee stock-based compensation	203	77	9,701
Fair value of common stock warrants issued for general and administrative expense			13
Fair value of Parent Company common stock and common stock warrants issued in exchange for general and administrative expenses			2,689
Total general and administrative expenses	676	751	40,513
Total operating expenses	(14,447)	(1,905)	(110,466)
Operating loss	(14,394)	(1,905)	(110,316)
Interest income (expense)		(22)	598
Other income (expense)	(3)	1	6,438
Net loss	(14,397)	(1,926)	(103,280)
Accretion of Series A convertible preferred stock and dividends	(3,547)		(16,362)
Net loss applicable to common stockholders	$ (17,944)	$ (1,926)	$ (119,642)

Net loss per common share applicable to common stockholders (Note 1):			
Basic and diluted loss per share	$ (2.76)	$ (1.20)	N/A
Weighted average common shares outstanding (Note 1):			
Basic and diluted	6,496,095	1,598,917	N/A

(1) The statement of expenses for the period from January 1, 2003 (date of inception) to March 31, 2013 include the results of operations of the carved-out Predecessor (RNAi) entity from the beginning of the periods presented to September 23, 2011 ($73,466) combined with the results of operations of RXi (Registrant) for the period September 24, 2011 to March 31, 2013 ($46,176).

The accompanying notes are an integral part of these financial statements.

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RXi PHARMACEUTICALS CORPORATION (REGISTRANT) AND PREDECESSOR (RNAi)

(A Development Stage Company)

CONDENSED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS EQUITY FOR THE PERIOD FROM DECEMBER 31, 2012 TO MARCH 31, 2013

(Amounts in thousands, except share data)

(Unaudited)

	RXi (Registrant)						Predecessor (RNAi)	Predecessor (CytRx)	
	Series A Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Deficit Accumulated Since Incorporation	Divisional Equity	Parent Company s Net Deficit	Total
	Shares Issued	Amount	Shares Issued	Amount					
Balance at December 31, 2012	9,726	$ 9,726	5,289,007	$	$ 11,317	$ (17,157)	$	$	$ (5,840)
Issuance of common stock, net of offering costs of $731			3,765,230	1	15,646				15,647
Issuance of common stock in exchange for patent and technology rights			1,666,666		12,250				12,250
Stock-based compensation					628				628
Fair value of Series A convertible preferred stock dividends					(3,547)				(3,547)
Dividends paid on Series A convertible preferred stock	170	170			3,377				3,377
Net loss RXi (Registrant)						(14,397)			(14,397)
Balance at March 31, 2013	9,896	$ 9,896	10,720,903	$ 1	$ 39,671	$ (31,554)	$	$	$ 8,118

See accompanying notes to financial statements.

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RXi PHARMACEUTICALS CORPORATION (REGISTRANT) AND PREDECESSOR (RNAi)

(A Development Stage Company)

CONDENSED STATEMENTS OF CASH FLOWS

(Amounts in thousands)

(Unaudited)

	For the Three Months Ended March 31, 2013	For the Three Months Ended March 31, 2012	Predecessor (RNAi) and RXi (Registrant)(1) Period from January 1, 2003 (Date of Inception) Through March 31, 2013
Cash flows from operating activities:			
Net loss	$ (14,397)	$ (1,926)	$ (103,280)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	26	40	837
(Gain) Loss on disposal of equipment			44
Non-cash rent expense			29
Accretion and receipt of bond discount			35
Non-cash share-based compensation	628	214	19,562
Fair value of common stock warrants issued in exchange for services			13
Loss on exchange of equity instruments			900
Fair value of Parent Company s shares mandatorily redeemable for cash upon exercise of warrants			(785)
Fair value of Parent Company s common stock and common stock warrants issued in exchange for services			2,689
Change in fair value of derivatives of Parent Company issued in connection with various equity financings			(5,604)
Fair value of common stock issued in exchange for patent and technology rights	12,250		18,423
Fair value of Parent Company common stock issued in exchange for licensing rights			3,954
Changes in operating assets and liabilities:			
Prepaid expenses and other current assets	110	128	(86)
Accounts payable	(50)	360	366
Due to former parent			390
Deferred revenue	(54)	(19)	464
Accrued expenses and other current liabilities	359	(6)	1,762
Net cash used in operating activities	(1,128)	(1,209)	(60,287)
Cash flows from investing activities:			
Change in restricted cash			(53)
Purchase of short-term investments			(37,532)
Maturities of short-term investments			37,497
Cash paid for purchase of equipment and furnishings			(760)
Proceeds from disposal of equipment and furnishings			32
Cash paid for lease deposit			(47)

Net cash used in investing activities					(863)
Cash flows from financing activities:					
Cash contributions from Parent Company, net			522		55,923
Proceeds from issuance of Series A convertible preferred stock					8,500
Proceeds from issuance of convertible notes payable			500		1,000
Net proceeds from the issuance of common stock		15,647			15,647
Repayments of capital lease obligations		(3)	(12)		(277)
Net cash provided by financing activities		15,644	1,010		80,793
Net increase (decrease) in cash and cash equivalents		14,516	(199)		19,643
Cash and cash equivalents at the beginning of period		5,127	503		
Cash and cash equivalents at end of period	$	19,643	$ 304	$	19,643

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	For the Three Months Ended March 31, 2013	For the Three Months Ended March 31, 2012	Predecessor (RNAi) and RXi (Registrant)(1) Period from January 1, 2003 (Date of Inception) Through March 31, 2013
Supplemental disclosure of cash flow information:			
Cash received during the period for interest	$	$	$ 724
Cash paid during the period for interest	$	$	$ 38
Supplemental disclosure of non-cash investing and financing activities:			
Settlement of corporate formation expenses in exchange for Parent Company common stock	$	$	$ 978
Fair value of derivatives issued in connection with Parent Company common stock	$	$	$ 14,051
Fair value of Parent Company shares mandatorily redeemable for cash upon exercise of warrants	$	$	$ 785
Allocation of management expenses	$	$	$ 551
Equipment and furnishings exchanged for Parent Company common stock	$	$	$ 48
Equipment and furnishings acquired through capital lease	$	$	$ 277
Non-cash lease deposit	$	$	$ 50
Value of Parent Company restricted stock units and common stock issued in lieu of bonuses included in accrued expenses	$	$	$ 427
Value of Parent Company restricted stock units issued in lieu of cash bonuses	$	$	$ 207
Reclassification of derivative liability upon elimination of obligation	$	$	$ 9,249
Fair value of Parent Company stock options modified	$	$	$ 960
Conversion of Series A convertible preferred stock into common stock	$	$	$ 224
Fair value of Series A convertible preferred stock beneficial conversion feature	$	$	$ 9,500
Accretion of Series A convertible preferred stock	$	$	$ 9,500
Fair value of Series A convertible preferred stock dividends	$ 3,547	$	$ 6,862
Conversion of notes payable into Series A convertible preferred stock	$	$	$ 1,000

(1) The statement of cash flow for the period from January 1, 2003 (date of inception) to September 30, 2012 include the cash flows of the carved-out Predecessor (RNAi) entity from the beginning of the period presented to September 23, 2011 combined with the cash flows of RXi (Registrant) for the period September 24, 2011 to March 31, 2013.

The accompanying notes are an integral part of these financial statements.

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RXi PHARMACEUTICALS CORPORATION (REGISTRANT) AND PREDECESSOR (RNAi)

(A Development Stage Company)

NOTES TO CONDENSED FINANCIAL STATEMENTS

(Unaudited)

1. Description of Business and Basis of Presentation

Prior to April 13, 2011, Galena Biopharma, Inc. (**Galena** or the **Parent Company**) (formerly known as RXi Pharmaceuticals Corporation) was engaged primarily in conducting discovery research and preclinical development activities based on RNAi, and Galena s financial statements for periods prior to April 13, 2011 reflected solely the assets, liabilities and results of operations attributable to Galena s RNAi-based assets, liabilities and results of operations. On April 13, 2011, Galena broadened its strategic direction by adding the development and commercialization of cancer therapies that utilize peptide-based immunotherapy products, including a main product candidate, NeuVax, for the treatment of various cancers. On September 24, 2011, Galena contributed to RXi Pharmaceuticals Corporation (**RXi**, **Registrant**, or the **Company**), a newly formed subsidiary of Galena, substantially all of Galena s RNAi-related technologies and assets. The newly formed RXi was incorporated on September 8, 2011 with the issuance of 100 initial shares at a price of $0.01 per share, for total consideration of $1.00. RXi was not engaged in any activities other than its initial incorporation from September 8, 2011 to September 23, 2011.

As a result of these transactions, historical financial information from the period January 1, 2003 through September 23, 2011 included in the Condensed Statements of Operations and Cash Flows for the cumulative period from inception (January 1, 2003) through March 31, 2013, has been carved out of the financial statements of Galena (the **Predecessor**) for such periods. Such financial information is limited to Galena s RNAi-related activities, assets and liabilities only, and excludes activities, assets and liabilities that are attributable to Galena s cancer therapy activities.

To date, RXi s principal activities, including that of its Predecessor, have consisted of conducting discovery research and preclinical development activities utilizing its RNAi therapeutic platform, initiating clinical development for its first lead therapeutic candidate, acquiring RNAi technologies and patent rights through exclusive, co-exclusive and non-exclusive licenses, recruiting an RNAi-focused management and scientific/clinical advisory team, capital raising activities and conducting business development activities aimed at establishing research and development partnerships with pharmaceutical and larger biotechnology companies.

On March 6, 2013, RXi entered into a Securities Purchase Agreement pursuant to which RXi agreed to issue 3,765,230 shares of common stock at a price of $4.35 per share. The gross proceeds from the offering, which closed on March 12, 2013, were approximately $16.4 million, and the net proceeds, after payment of commissions and other costs of the offering, were approximately $15.6 million. The Company believes that its existing cash and cash equivalents will be sufficient to fund the Company s operations, including the planned Phase 2 program for RXI-109, into fiscal 2015.

On July 18, 2013, the Board of Directors of the Company approved a 1-for-30 reverse stock split of the Company s outstanding common stock, which was effected on July 23, 2013. Stockholders entitled to fractional shares as a result of the reverse stock split were entitled to receive a cash payment in lieu of receiving fractional shares. Shares of common stock underlying outstanding stock options and other equity instruments were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased in accordance with the terms of the agreements governing such securities. Shares of common stock reserved for issuance upon the conversion of the Company s Series A Preferred Stock were proportionately reduced and the respective conversion prices were proportionately increased. All share and per share amounts in the financial statements have been retroactively adjusted for all periods presented to give effect to the reverse stock split, including reclassifying an amount equal to the reduction in par value to additional paid-in capital.

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We expect to incur significant operating losses as we advance our product candidates through the drug development and regulatory process. We have generated significant losses to date, have not generated any product revenue to date and may not generate product revenue in the foreseeable future, if ever. In the future, RXi will be dependent on obtaining funding from third parties, such as proceeds from the issuance of debt, sale of equity, funded research and development programs and payments under partnership and collaborative agreements, in order to maintain RXi s operations and meet RXi s obligations to licensors. There is no guarantee that debt, additional equity or other funding will be available to the Company on acceptable terms, or at all. If the Company fails to obtain additional funding when needed, RXi would be forced to scale back, or terminate the Company operations or to seek to merge with or to be acquired by another company.

Basis of Presentation

Historical financial information from the period January 1, 2003 through September 23, 2011 included in the Condensed Statements of Operations and Cash Flows for the cumulative period from inception (January 1, 2003) through March 31, 2013, has been carved out of the financial statements of Galena and the Predecessor for such periods. Such financial information is limited to Galena s RNAi-related activities, assets and liabilities only, and excludes activities, assets and liabilities that are attributable to Galena s cancer therapy activities. RXi was formed on September 8, 2011 and was not engaged in any activities other than its initial incorporation from September 8, 2011 to September 23, 2011.

Uses of estimates in preparation of financial statements

The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and 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 these estimates.

Cash and Cash Equivalents

The Company considers all highly liquid debt instruments with an original maturity of three months or less to be cash equivalents. Cash equivalents consist primarily of amounts invested in money market accounts.

Restricted Cash

Restricted cash consists of certificates of deposit on hand with the Company s financial institutions as collateral for its corporate credit cards.

Revenue Recognition

Revenue consists of grant revenues. Revenues from government grants are recognized over the respective contract periods as the services are performed, provided there is persuasive evidence of an arrangement, the fee is fixed or determinable and collection of the related receivable is reasonably assured, and no contingencies remain outstanding. Monies received prior to the recognition of revenue are recorded as deferred revenue.

Net loss per share

The Company accounts for and discloses net loss per common share in accordance with the Financial Accounting Standards Board (**FASB**) Accounting Standards Codification (**ASC**) Topic 260, *Earnings per Share.* Basic and diluted net loss per common share is computed by dividing net loss attributable to common stockholders by the weighted average number of common shares outstanding.

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To determine the shares outstanding for the Company for the periods prior to the distribution of the RXi common shares to the Galena stockholders, Galena s weighted average number of shares is multiplied by the distribution ratio of one share of RXi common stock for every thirty shares of Galena common stock. Basic loss per share is computed by dividing the Company s losses by the weighted average number of shares outstanding during the period. When the effects are not anti-dilutive, diluted earnings per share is computed by dividing the Company s net earnings by the weighted average number of shares outstanding and the impact of all dilutive potential common shares. There were no potential dilutive common shares for all periods presented.

The following table sets forth the potential common shares excluded from the calculation of net loss per common share because their inclusion would be anti-dilutive:

	March 31, 2013	2012
RXi options to purchase common stock	2,128,264	
Common stock underlying Series A Preferred Stock	24,122,332	
Warrants to purchase common stock	4,615	
Total	26,255,211	

Comprehensive Loss

The Company s net loss is equal to its comprehensive loss for all periods presented.

2. Fair Value Measurements

The Company follows the provisions of FASB ASC Topic 820, *Fair Value Measurements and Disclosures* .

The Company s financial assets and liabilities that are re-measured and reported at fair value at each reporting period, and are re-measured and reported at fair value at least annually using a fair value hierarchy that is broken down into three levels. Level inputs are as defined as follows:

Level 1 quoted prices in active markets for identical assets or liabilities.

Level 2 other significant observable inputs for the assets or liabilities through corroboration with market data at the measurement date.

Level 3 significant unobservable inputs that reflect management s best estimate of what market participants would use to price the assets or liabilities at the measurement date.

The Company categorized its cash equivalents and restricted cash as Level 1 hierarchy. The valuation for Level 1 was determined based on a market approach using quoted prices in active markets for identical assets. Valuations of these assets do not require a significant degree of judgment. Financial assets measured at fair value on a recurring basis are summarized as follows, in thousands:

Description	March 31, 2013	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
Assets:				
Cash equivalents	$ 10,000	$ 10,000	$	$
Restricted cash	53	53		
Total assets	$ 10,053	$ 10,053	$	$

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Description	December 31, 2012	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
Assets:				
Restricted cash	$ 53	$ 53	$	$
Total assets	$ 53	$ 53	$	$

Fair Value of Financial Instruments

The carrying amounts reported in the balance sheet for cash equivalents, restricted cash, accounts payable, and capital leases approximate their fair values due to their short-term nature and market rates of interest.

3. Preferred Stock

The Company has authorized up to 10,000,000 shares of preferred stock, $0.0001 par value per share, for issuance. The preferred stock will have such rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, as shall be determined by the Company s board of directors upon its issuance.

At March 31, 2013, there were 9,896 shares of Series A Preferred Stock outstanding. The increase from December 31, 2012 of 9,726 shares to 9,896 shares at March 31, 2013, represents quarterly dividends paid in additional shares of Series A Preferred Stock.

Dividends

Holders of Series A Preferred Stock shall be entitled to receive cumulative mandatory dividends at the rate per share of seven percent (7%) of the face amount ($1,000 per share) per annum, payable quarterly on each March 31, June 30, September 30 and December 31. Dividends shall be payable in additional shares of Series A Preferred Stock valued for this purpose at the face amount. In the event there are not sufficient authorized preferred shares available to pay such a dividend, the dividend shall instead accrete to and increase the value of the outstanding Series A Preferred Stock. The fair value of the Series A Preferred Stock dividend, which is included in the Company s net loss applicable to common shareholders, is calculated by multiplying the number of common shares that a preferred holder would receive upon conversion by the closing price of the Company s common stock on the dividend payment date.

For the quarter ended March 31, 2013, the fair value of the Series A Preferred Stock dividends of $3,547,000 was included in the Company s net loss applicable to common shareholders.

Conversion

Each holder of shares of Series A Preferred Stock may, at any time and from time to time, convert each of its shares into a number of fully paid and non-assessable shares of common stock at the defined conversion rate. Initially, each share of Series A Preferred Stock is convertible into 2,437.57 shares of common stock. In no event shall any holder of shares of Series A Preferred Stock have the right to convert shares of Series A Preferred Stock into shares of common stock to the extent that, after giving effect to such conversion, the holder, together with any of its affiliates, would beneficially own more than 9.999% of the then-issued and outstanding shares of common stock. For the quarter ended March 31, 2013, there were no conversions of Series A Preferred Stock.

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4. Stock Based Compensation

The Company follows the provisions of the FASB ASC Topic 718, *Compensation Stock Compensation* (**ASC 718**), which requires the measurement and recognition of compensation expense for all stock-based payment awards made to employees and non-employee directors including employee stock options. Stock compensation expense based on the grant date fair value estimated in accordance with the provisions of ASC 718 is recognized as an expense over the requisite service period.

For stock options granted as consideration for services rendered by non-employees, the Company recognizes compensation expense in accordance with the requirements of FASB ASC Topic 505-50, *Equity Based Payments to Non-Employees* . Non-employee option grants that do not vest immediately upon grant are recorded as an expense over the requisite service period of the underlying stock options. At the end of each financial reporting period prior to vesting, the value of these options, as calculated using the Black-Scholes option-pricing model, will be re-measured using the fair value of the Company s common stock and the non-cash compensation recognized during the period will be adjusted accordingly. Since the fair market value of options granted to non-employees is subject to change in the future, the amount of the future compensation expense will include fair value re-measurements until the stock options are fully vested.

RXi Stock-Based Compensation

The Company is currently using the Black-Scholes option-pricing model to determine the fair value of all its option grants. There were no option grants during the three months ended March 31, 2013 and 2012.

The following table summarizes the activity of Company s stock option plan for the period January 1, 2013 to March 31, 2013:

	Stock Options	Weighted Average Exercise Price
Outstanding, January 1, 2013	2,128,264	$ 3.00
Granted		
Exercised		
Cancelled		
Outstanding, March 31, 2013	2,128,264	$ 3.00
Exercisable, March 31, 2013	301,784	$ 3.60

The aggregate intrinsic value of outstanding options as of March 31, 2013 was $11,983,000. The aggregate intrinsic value of exercisable options as of March 31, 2013 was $1,540,000. The aggregate intrinsic value is calculated based on the positive difference between the closing fair market value of the Company s common stock on March 28, 2013 and the exercise price of the underlying options.

Predecessor (RNAi) Stock-Based Compensation Expense

Stock-based compensation expense prior to the completion of the spinoff was allocated to the carved out financial statements based on an estimate of time spent by Galena employees, board members, scientific advisory board members, and outside consultants on RXi related matters. Galena options held by current RXi employees were cancelled at the date of the completion of the spin-off except for options to purchase an aggregate of 477,191 shares of Galena common stock. The Company will continue to recognize stock compensation expense on the non-cancelled options as they vest. Under the terms of the option awards, these options will continue to vest as long as the individuals are employed by RXi. As of March 31, 2013, 477,191 options remain outstanding with a range of exercise prices from $0.65 to $7.50.

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Of the total stock-based compensation expense recorded by RXi, approximately $3,700 and $214,000 related to options issued by Galena for the three months ended March 31, 2013 and 2012, respectively.

5. Securities Purchase Agreement and Asset Purchase Transaction

On March 1, 2013, the Company entered into an asset purchase agreement with OPKO Health, Inc. (**OPKO**) pursuant to which RXi acquired substantially all of OPKO s RNAi-related assets, including patents, licenses, clinical and preclinical data and other related assets. Upon the close of the asset purchase agreement with OPKO on March 12, 2013, the Company issued to OPKO 1,666,666 shares of common stock. Under the asset purchase agreement, the Company will make, if applicable, up to $50 million per product in development and commercialization milestones for the successful development and commercialization of products utilizing the acquired OPKO intellectual property. In addition, if applicable, upon commercialization of these products the Company will make royalty payments to OPKO.

The Company assessed the acquired OPKO RNAi assets under FASB ASC Topic 805, *Business Combination* (**ASC 805**), and it was determined that the transaction be accounted for as a purchase of assets, as the acquired assets did not constitute a business under the guidance of ASC 805. The assets purchased from OPKO are at an early stage of development, and, as such, determining the future economic benefit of the OPKO RNAi assets at the date of acquisition is highly uncertain. The fair value of the assets was determined using the quoted market price of the Company s common stock, on the date of the transfer of the assets, of March 12, 2013. Accordingly, the fair value of the OPKO RNAi assets acquired of $12,250,000 was expensed as in-process research and development during the quarter ended March 31, 2013.

On March 6, 2013, the Company entered into a Securities Purchase Agreement with OPKO and certain other accredited and institutional investors, pursuant to which the Company agreed to sell a total of 3,765,230 shares of common stock at a price of $4.35 per share (the **March 2013 Offering**). The gross proceeds from the March 2013 Offering were approximately $16.4 million, resulting in net proceeds of approximately $15.6 million after payment of commissions and other costs of the March 2013 Offering. The Company intends to use the proceeds from the March 2013 Offering for general corporate purposes, including the advancement of the RXI-109 program, research and development and general and administrative expenses.

6. Subsequent Events

On April 18, 2013, the Company granted an option to purchase 33,333 shares of the Company s common stock to each of the two new members of the Board of Directors at an exercise price of $7.185 per share, which equaled the Company s closing stock price on that date. These options vest quarterly over a one-year period and expire ten years from the grant date.

On July 18, 2013, the Board of Directors of the Company approved a 1-for-30 reverse stock split of the Company s outstanding common stock, which was effected on July 23, 2013. Stockholders entitled to fractional shares as a result of the reverse stock split were entitled to receive a cash payment in lieu of receiving fractional shares. Shares of common stock underlying outstanding stock options and other equity instruments were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased in accordance with the terms of the agreements governing such securities. Shares of common stock reserved for issuance upon the conversion of the Company s Series A Preferred Stock were proportionately reduced and the respective conversion prices were proportionately increased.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors

RXi Pharmaceuticals Corporation

Westborough, Massachusetts

We have audited the accompanying balance sheets of RXi Pharmaceuticals Corporation (Registrant), a development stage company, as of December 31, 2012 and 2011, respectively, and the related statements of operations, convertible preferred stock and stockholders deficit for the period from September 24, 2011 to December 31, 2012, divisional equity for the period from April 3, 2006 to September 23, 2011 and the parent company s net deficit for the period from January 1, 2003 (date of inception) to December 31, 2006, and cash flows for the years then ended and for the period from inception (January 1, 2003) through December 31, 2012. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company at December 31, 2012 and 2011 and the results of its operations and its cash flows for the years then ended and for the period from inception (January 1, 2003) through December 31, 2012, in conformity with accounting principles generally accepted in the United States of America.

/s/ BDO USA, LLP

Boston, Massachusetts

March 29, 2013, (except for the stock split discussed in Note 13, as to which the date is July 24, 2013)

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RXi PHARMACEUTICALS CORPORATION (REGISTRANT)

(A Development Stage Company)

BALANCE SHEETS (REGISTRANT)

(Amounts in thousands, except share data)

	December 31, 2012	December 31, 2011
ASSETS		
Current assets:		
Cash and cash equivalents	$ 5,127	$ 503
Restricted cash	53	53
Due from Parent		597
Prepaid expenses and other current assets	212	186
Total current assets	5,392	1,339
Equipment and furnishings, net of accumulated depreciation of $585 and $646, in 2012 and 2011, respectively	198	355
Other assets	2	
Total assets	$ 5,592	$ 1,694
LIABILITIES, CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS DEFICIT		
Current liabilities:		
Accounts payable	$ 416	$ 387
Accrued expenses and other current liabilities	767	544
Deferred revenue	491	816
Current maturities of capital lease obligations	5	29
Total current liabilities	1,679	1,776
Convertible notes payable		500
Deferred revenue, net of current portion	27	
Capital lease obligations, net of current maturities		5
Total liabilities	1,706	2,281
Commitments and contingencies (Note 7)		
Series A convertible preferred stock, $0.0001 par value, 10,000,000 shares authorized; 9,726 and no shares issued and outstanding at December 31, 2012 and 2011, respectively (liquidation preference of $9,726 at December 31, 2012)	9,726	
Stockholders deficit:		
Common stock, $0.0001 par value, 1,500,000,000 shares authorized; 5,289,007 and 3,347,996 shares issued and outstanding at December 31, 2012 and 2011, respectively		
Additional paid-in capital	11,317	3,690
Deficit accumulated during the developmental stage	(17,157)	(4,277)
Total stockholders deficit	(5,840)	(587)
Total liabilities, convertible preferred stock and stockholders deficit	$ 5,592	$ 1,694

See accompanying notes to financial statements.

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RXi PHARMACEUTICALS CORPORATION (REGISTRANT) AND PREDECESSOR (RNAi)

(A Development Stage Company)

STATEMENTS OF OPERATIONS

(Amounts in thousands, except share and per share data)

	RXi (Registrant)	Predecessor (RNAi) and RXi (Registrant) (1)	Predecessor (RNAi) and RXi (Registrant) (1) Period from January 1, 2003 (Date of Inception) to December 31, 2012
	Years Ended December 31,		
	2012	2011	
Revenues:			
Grant revenues	$ 97	$	$ 97
Total revenues	97		97
Expenses:			
Research and development expense	3,746	6,190	36,619
Research and development employee stock-based compensation expense	418	513	3,338
Research and development non-employee stock-based compensation expense	114	(79)	6,098
Fair value of common stock issued in exchange for patent and technology rights	6,173		6,173
Fair value of Parent Company common stock issued in exchange for licensing rights			3,954
Total research and development expense	10,451	6,624	56,182
General and administrative expense	2,172	4,357	27,637
General and administrative employee stock-based compensation expense	436	1,675	9,498
Fair value of common stock warrants issued for general and administrative expense	13		13
Fair value of Parent Company common stock and common stock warrants issued for general and administrative expense		114	2,689
Total general and administrative expense	2,621	6,146	39,837
Operating loss	(12,975)	(12,770)	(95,922)
Interest income (expense)	(30)		598
Other income, net	125	2,551	6,441
Loss before provision for income taxes	(12,880)	(10,219)	(88,883)
Provision for income taxes			
Net loss	(12,880)	(10,219)	(88,883)
Accretion of Series A convertible preferred stock and dividends	(12,815)		(12,815)

Net loss applicable to common stockholders	$ (25,695)	$ (10,219)	$ (101,698)
Net loss per common share applicable to common stockholders (Note 2):			
Basic and diluted	$ (5.62)	$ (8.44)	
Weighted average common shares:			
Basic and diluted	4,573,787	1,211,147	

(1) The statement of operations for the year ended December 31, 2011 and for the period from January 1, 2003 (date of inception) to December 31, 2012 includes the results of operations of the carved-out Predecessor (RNAi) entity from the beginning of the periods presented to September 23, 2011 combined with the results of operations of RXi (Registrant) for the period September 24, 2011 to December 31, 2012.

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RXi PHARMACEUTICALS CORPORATION (REGISTRANT) AND PREDECESSOR (RNAi)

(A Development Stage Company)

STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STATEMENTS OF STOCKHOLDERS DEFICIT FOR THE PERIOD FROM SEPTEMBER 24, 2011 TO DECEMBER 31, 2012, DIVISIONAL EQUITY FOR THE PERIOD FROM APRIL 3, 2006 TO SEPTEMBER 23, 2011 AND PARENT COMPANY S NET DEFICIT FOR THE PERIOD FROM JANUARY 1,

2003 (DATE OF INCEPTION) TO DECEMBER 31, 2006

(Amounts in thousands, except share data)

	RXi (Registrant)						Predecessor (RNAi)	Predecessor (CytRx)	
	Series A Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Deficit Accumulated Since Incorporation	Divisional Equity	Parent Company s Net Deficit	
	Shares Issued	Amount	Shares Issued	Amount					Total
Inception, January 1, 2003							$	$	$
Net loss								(89)	(89)
Balance at December 31, 2003								(89)	(89)
Net loss								(3,272)	(3,272)
Net transactions with Parent Company								2,393	2,393
Balance at December 31, 2004								(968)	(968)
Net loss								(2,209)	(2,209)
Net transactions with Parent Company								2,727	2,727
Balance at December 31, 2005								(450)	(450)
Net loss								(2,405)	(2,405)
Net transactions with Parent Company								2,587	2,587
Balance at December 31, 2006							$	$ (268)	$ (268)
Balance at April 3, 2006							$	$	$
Cash contributions from Parent Company							2		2
Balance at December 31, 2006							2		2
Non-cash equity adjustments from Parent Company							4,318		4,318
Cash contributions from Parent Company							15,679		15,679
Stock-based compensation expense							1,814		1,814
Net loss							(10,990)		(10,990)
Balance at December 31, 2007							10,823		10,823
Non-cash equity adjustments from Parent Company							750		750
							7,944		7,944

Cash contributions from Parent Company		
Stock based compensation	3,824	3,824
Net loss	(14,373)	(14,373)
Balance at December 31, 2008	8,968	8,968
Non-cash equity adjustments from Parent Company, net	(1,756)	(1,756)
Cash contributions from Parent Company	7,714	7,714
Stock based compensation expense	4,202	4,202
Net loss	(18,387)	(18,387)

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	RXi (Registrant)						Predecessor (RNAi)	Predecessor (CytRx)	
	Series A Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Deficit Accumulated Since Incorporation	Divisional Equity	Parent Company s Net Deficit	
	Shares Issued	Amount	Shares Issued	Amount					Total
Balance at December 31, 2009							741		741
Non-cash equity adjustments from Parent Company, net							(2,326)		(2,326)
Cash contributions from Parent Company, net							11,640		11,640
Stock-based compensation expense							4,368		4,368
Net loss							(11,993)		(11,993)
Balance at December 31, 2010							2,430		2,430
Non-cash equity adjustments from Parent Company, net							(8,083)		(8,083)
Cash contributions to Parent Company, net							369		369
Stock-based compensation expense							1,987		1,987
Reclassification of derivative liability upon elimination of obligation							9,249		9,249
Net loss Predecessor (RNAi)							(7,682)		(7,682)
Recapitalization of divisional deficit	$	$	3,347,996	$	$ 10	$ (1,740)	1,730		
Stock-based compensation					122				122
Cash contribution from Parent Company					1,500				1,500
Expenses paid by Parent Company for RXi					2,058				2,058
Net loss RXi (Registrant)						(2,537)			(2,537)
Balance at December 31, 2011			3,347,996		3,690	(4,277)			(587)
Issuance of Series A convertible preferred stock	9,500	9,500							
Beneficial conversion feature related to Series A convertible preferred stock		(9,500)			9,500				9,500
Accretion of beneficial conversion feature related to Series A convertible preferred stock		9,500			(9,500)				(9,500)
Issuance of common stock in exchange for patent and technology rights			1,394,997		6,173				6,173
Stock-based compensation					968				968
Issuance of common stock warrants in exchange for services					13				13
Expenses paid by Parent Company for RXi					699				699
Conversion of Series A convertible preferred stock to common stock	(224)	(224)	546,014		224				224
Fair value of Series A convertible preferred stock dividends					(3,315)				(3,315)
Dividends paid on Series A convertible preferred stock	450	450			2,865				2,865
Net loss RXi (Registrant)						(12,880)			(12,880)
Balance at December 31, 2012	9,726	$ 9,726	5,289,007	$	$ 11,317	$ (17,157)	$	$	$ (5,840)

See accompanying notes to financial statements.

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RXi PHARMACEUTICALS CORPORATION (REGISTRANT) AND PREDECESSOR (RNAi)

(A Development Stage Company)

STATEMENTS OF CASH FLOWS

(Amounts in thousands)

	RXi (Registrant)	Predecessor (RNAi) and RXi (Registrant) (1)	Predecessor (RNAi) and RXi (Registrant) (1) Period from January 1, 2003 (Date of Inception) through December 31, 2012
	Years Ended December 31,		
	2012	2011	
Cash flows from operating activities :			
Net loss	$ (12,880)	$ (10,219)	$ (88,883)
Adjustment to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization expense	147	163	811
(Gain) Loss on disposal of equipment	(8)	40	44
Non-cash rent expense			29
Accretion and receipt of bond discount			35
Non-cash share-based compensation	968	2,109	18,934
Loss on exchange of Parent Company derivatives		900	900
Fair value of common stock warrants issued in exchange for services	13		13
Fair value of common stock issued in exchange for patent and technology rights	6,173		6,173
Fair value of Parent Company s shares mandatorily redeemable for cash upon exercise of warrants			(785)
Fair value of Parent Company common stock and common stock warrants issued in exchange for services		114	2,689
Change in fair value of derivatives of Parent Company issued in connection with various equity financings		(3,413)	(5,604)
Fair value of Parent Company s common stock issued in exchange for licensing rights			3,954
Changes in operating assets and liabilities:			
Prepaid expenses and other assets	(26)	(20)	(196)
Accounts payable	29	(337)	416
Due to former Parent Company	597		390
Accrued expenses and other current liabilities	223	(142)	1,403
Deferred revenue	(298)	816	518
Net cash used in operating activities	(5,062)	(9,989)	(59,159)
Cash flows from investing activities:			
Change in restricted cash		(53)	(53)
Purchase of short-term investments			(37,532)
Maturities of short-term investments			37,497
Cash paid for purchase of equipment and furnishings	(15)	(59)	(760)
Proceeds from disposal of equipment and furnishings	33		32
Cash refunded (paid) for lease deposit	(2)		(47)
Net cash provided by (used) in investing activities	16	(112)	(863)
Cash flows from financing activities:			

Cash contributions from Parent Company, net	699	3,330	55,923
Proceeds from the issuance of Series A convertible preferred stock	8,500		8,500
Proceeds from issuance of convertible notes payable	500	500	1,000
Repayments of capital lease obligations	(29)	(117)	(274)
Net cash provided by financing activities	9,670	3,713	65,149
Net (decrease) increase in cash and cash equivalents	4,624	(6,388)	5,127
Cash and cash equivalents at the beginning of period	503	6,891	
Cash and cash equivalents at end of period	$ 5,127	$ 503	$ 5,127

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	RXi (Registrant)	Predecessor (RNAi) and RXi (Registrant) (1)	Predecessor (RNAi) and RXi (Registrant) (1)
	Years Ended December 31,		Period from January 1, 2003 (Date of Inception) through December 31,
	2012	2011	2012
Supplemental disclosure of cash flow information:			
Cash received during the period for interest	$	$	$ 724
Cash paid during the period for interest	$ 30	$ 1	$ 38
Supplemental disclosure of non-cash investing and financing activities:			
Settlement of corporate formation expenses in exchange for Parent Company common stock	$	$	$ 978
Fair value of derivatives issued in connection with Parent Company common stock	$	$ 8,722	$ 14,051
Fair value of Parent Company shares mandatorily redeemable for cash upon exercise of warrants	$	$	$ 785
Allocation of management expenses	$	$	$ 551
Equipment and furnishings exchanged for Parent Company common stock	$	$	$ 48
Equipment and furnishings acquired through capital lease	$	$ 80	$ 277
Non-cash lease deposit	$	$	$ 50
Value of Parent Company restricted stock units and common stock issued in lieu of bonuses included in accrued expenses	$	$ 427	$ 427
Value of Parent Company restricted stock units issued in lieu of cash bonuses	$	$	$ 207
Reclassification of derivative liability upon elimination of obligation	$	$ 9,249	$ 9,249
Fair value of Parent Company stock options modified	$	$ 960	$ 960
Conversion of Series A convertible preferred stock into common stock	$ 224	$	$ 224
Fair value of Series A convertible preferred stock beneficial conversion feature	$ 9,500	$	$ 9,500
Accretion of Series A convertible preferred stock	$ 9,500	$	$ 9,500
Fair value of Series A convertible preferred stock dividends	$ 3,315	$	$ 3,315
Conversion of notes payable into Series A convertible preferred stock	$ 1,000	$	$ 1,000

(1) The statements of cash flow for the year ended December 31, 2011 and for the period from January 1, 2003 (date of inception) to December 31, 2012 include the cash flows of the carved-out Predecessor (RNAi) entity from the beginning of the periods presented to September 23, 2011 combined with the cash flows of RXi (Registrant) for the period September 24, 2011 to December 31, 2012.

See accompanying notes to financial statements.

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RXi PHARMACEUTICALS CORPORATION (REGISTRANT) AND PREDECESSOR (RNAi)

(A Development Stage Company)

NOTES TO FINANCIAL STATEMENTS

1. Nature of Business

Prior to April 13, 2011, Galena Biopharma, Inc. (**Galena** or the **Parent Company**) (formerly known as RXi Pharmaceuticals Corporation) was engaged primarily in conducting discovery research and preclinical development activities based on RNAi, and Galena s financial statements for periods prior to April 13, 2011 reflected solely the assets, liabilities and results of operations attributable to Galena s RNAi-based assets, liabilities and results of operations. On April 13, 2011, Galena broadened its strategic direction by adding the development and commercialization of cancer therapies that utilize peptide-based immunotherapy products, including a main product candidate, NeuVax, for the treatment of various cancers. On September 24, 2011, Galena contributed to RXi Pharmaceuticals Corporation (**RXi**, **Registrant**, or the **Company**), a newly formed subsidiary of Galena, substantially all of Galena s RNAi-related technologies and assets. The newly formed RXi was incorporated on September 8, 2011 with the issuance of 100 initial shares at a price of $0.01 per share, for total consideration of $1.00. RXi was not engaged in any activities other than its initial incorporation from September 8, 2011 to September 23, 2011.

As a result of these transactions, certain historical financial information for the fiscal year ended December 31, 2011, as well as the cumulative period from inception (January 1, 2003) through December 31, 2012, has been carved out of the financial statements of Galena (the **Predecessor**) for such periods, and includes carved out activities through September 23, 2011. Such financial information is limited to Galena s RNAi-related activities, assets and liabilities only, and excludes activities, assets and liabilities that are attributable to Galena s cancer therapy activities.

The carved-out financial information includes both direct and indirect expenses. The historical direct expenses consist primarily of the various costs for technology license agreements, sponsored research agreements, fees paid to scientific advisors and employee expenses of employees directly involved in RNAi-related activities. Indirect expenses represent expenses incurred by Galena that were allocable to the RNAi business. The indirect expenses are based upon: (1) estimates of the percentage of time spent by Galena employees working on RNAi business matters, and (2) allocations of various expenses associated with the employees, including salary, benefits, rent associated with the employees office space, accounting and other general and administrative expenses. The percentage of time spent by Galena employees was multiplied by these allocable expenses to arrive at the total employee expenses allocable to the RNAi business and reflected in the carved out financial statements.

Management believes the assumptions underlying the carve-out financial information are reasonable; however, the financial position, expenses and cash flows may have been materially different if the RNAi business had operated as a stand-alone entity during the periods presented.

The financial statements reflect the recapitalization of our Predecessor s divisional deficit as of September 24, 2011, the date Galena contributed assets to RXi. The recapitalization on September 24, 2011 reflects the elimination of the Predecessor s divisional deficit of $1,730,000 and the issuance of 3,347,996 shares of RXi common stock, par value $0.0001, with a corresponding charge of $1,740,000 to deficit accumulated since incorporation and increase in additional paid-in capital of $10,000 due to the divisional deficit at the date of recapitalization.

RXi was formed on September 8, 2011 and was not engaged in any activities other than its initial incorporation from September 8, 2011 to September 23, 2011. The RNAi business operated as a division of Galena prior to September 24, 2011. The balance of $17,157,000 in deficit accumulated since the development stage at December 31, 2012 includes RXi s net loss of $15,417,000 for the period September 24, 2011 to December 31, 2012 and the Predecessor s cumulative net loss of $73,466,000 through September 23, 2011 offset by cash and non-cash equity transactions of $71,726,000.

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To date, RXi s principal activities, including that of its Predecessor, have consisted of conducting discovery research and preclinical development activities utilizing its RNAi therapeutic platform, acquiring RNAi technologies and patent rights through exclusive, co-exclusive and non-exclusive licenses, recruiting an RNAi-focused management and scientific/clinical advisory team, capital raising activities and conducting business development activities aimed at establishing research and development partnerships with pharmaceutical and larger biotechnology companies.

The Company and the Predecessor have generated significant losses since inception. Additionally, the Company has not generated any product revenues, nor are any revenues expected for the foreseeable future, and as such the Company is considered a development stage company for accounting purposes. The Company expects to incur significant operating losses for the foreseeable future while the Company advances its future product candidates from discovery through preclinical studies and clinical trials and seeks regulatory approval and potential commercialization, even if the Company is collaborating with pharmaceutical and larger biotechnology companies. The Company will need to generate significant revenues to achieve profitability and may never do so. On September 24, 2011, RXi entered into a contribution agreement with Galena pursuant to which:

Galena assigned and contributed to RXi substantially all of its RNAi-related technologies and assets, which consist primarily of novel RNAi compounds and licenses from Dharmacon, Inc., Northwestern University, the Carnegie Institute of Washington, and the University of Massachusetts Medical School relating to its RNAi technologies, as well as the lease of its former Worcester, Massachusetts laboratory facility, fixed assets and other equipment located at the facility and its employment arrangements with certain scientific, corporate and administrative personnel who became employees of RXi, as well as research grants from the National Institute of Neurological Disorders and Stroke, National Institute of Allergy and Infectious Diseases, and the National Institute of General Medical Sciences of approximately $800,000 that were subject to the approval of the granting institutions, which was received in 2012; and

RXi agreed to assume certain accrued expenses of the RXI-109 development program and all future obligations under the contributed licenses, employment arrangements and other agreements, and RXi agreed to make future milestone payments to Galena of up to $45 million, consisting of two one-time payments of $15 million and $30 million, respectively, if RXi achieves annual net sales equal to or greater than $500 million and $1 billion, respectively, of any covered products that may be developed with the contributed RNAi technologies.

On September 24, 2011, RXi entered into a securities purchase agreement (the **Series A SPA**) with Galena, Tang Capital Partners, LP (**TCP**) and RTW Investments, LLC (**RTW**) pursuant to which:

TCP and RTW agreed to purchase a total of 9,500 shares of RXi s Series A Convertible Preferred Stock (the **Series A Preferred Stock**), for an aggregate purchase price of $9,500,000, at the closing of the spin-off transaction (see below) and to lend RXi up to $1,500,000 to fund RXi s operations prior to the closing, which would be applied against the $9,500,000 purchase price of the Series A Preferred Stock. The outstanding principal and accrued interest on the loan(s), along with the receipt of the remaining $9,500,000 purchase price, was converted into Series A Preferred Stock at the closing at a conversion price of $1,000 per share;

RXi agreed that the Series A Preferred Stock would be convertible by TCP or RTW at any time into shares of RXi common stock, except to the extent that the holder would own more than 9.999% of the shares of RXi common stock outstanding immediately after giving effect to such conversion;

Galena contributed $1.5 million of cash to RXi;

Galena agreed to distribute to its stockholders 8% of the fully-diluted shares of common stock of RXi that will be outstanding immediately upon the completion of the spin-off transaction; and

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RXi agreed to reimburse, upon completion of the spin-off transaction, Galena for up to a total of $300,000, and TCP and RTW for a total of up to $100,000, of transaction costs relating to the contribution agreement with Galena, the Series A SPA summarized above and the transactions contemplated by those agreements.

On April 27, 2012, the date of completion of RXi s spinoff from Galena, the Company issued 9,500 of Series A Preferred Stock to TCP and RTW upon the conversion of approximately $1.0 million in principal and accrued interest under the bridge notes and the receipt of the remaining $8.5 million from TCP and RTW, as provided for in the Series A SPA. At the closing of the spin-off transaction, RXi reimbursed Galena and TCP $300,000 and $100,000, respectively, for transaction related expenses.

As part of the transactions contemplated by the contribution agreement and Series A SPA, on September 24, 2011, RXi entered into an agreement with Advirna, LLC (**Advirna**), a company affiliated with the Company s former Senior Vice President and Chief Scientific Officer, pursuant to which:

Advirna assigned to RXi its existing patent and technology rights related to sd-rxRNA technology in exchange for RXi s agreement to pay Advirna an annual $100,000 maintenance fee and a one-time $350,000 milestone payment upon the future issuance of the first patent with valid claims covering the assigned patent and technology rights;

RXi will also be required to pay a 1% royalty to Advirna for any licensing revenue received by RXi with respect to future licensing of the assigned Advirna patent and technology rights;

RXi has granted back to Advirna a license under the assigned patent and technology for fields of use outside the fields of human therapeutics and diagnostics; and

RXi agreed to issue to Advirna, upon the completion of the spin-off transaction, shares of RXi s common stock equal to approximately 5% of the fully diluted shares of RXi common stock assuming the conversion in full of all outstanding Series A Preferred Stock. Accordingly, at the date of the completion of the spin-off, the Company issued 1,394,997 shares of common stock to Advirna. The Company recorded -research and development expense of $6,173,000 to recognize the fair value of the common shares issued in exchange for the sd-rxRNA patent and technology rights assigned to RXi by Advirna.

On March 6, 2013, RXi entered into a common stock purchase agreement (the **Common Stock SPA**) pursuant to which RXi agreed to issue 3,765,230 shares of common stock at a price of $4.35 per share. The gross proceeds from the offering, which closed on March 12, 2013, were approximately $16.4 million, and the net proceeds, after payment of commissions, were approximately $16.0 million. The Company believes that its existing cash and cash equivalents will be sufficient to fund the Company s operations, including the planned Phase 2 program for RXI-109, into fiscal 2015.

On July 18, 2013, the Board of Directors of the Company approved a 1-for-30 reverse stock split of the Company s outstanding common stock, which was effected on July 23, 2013. Stockholders entitled to fractional shares as a result of the reverse stock split were entitled to receive a cash payment in lieu of receiving fractional shares. Shares of common stock underlying outstanding stock options and other equity instruments were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased in accordance with the terms of the agreements governing such securities. Shares of common stock reserved for issuance upon the conversion of the Company s Series A Preferred Stock were proportionately reduced and the respective conversion prices were proportionately increased. All share and per share amounts in the financial statements have been retroactively adjusted for all periods presented to give effect to the reverse stock split, including reclassifying an amount equal to the reduction in par value to additional paid-in capital.

We expect to incur significant operating losses as we advance our product candidates through the drug development and regulatory process. We have generated significant losses to date, have not generated any product revenue to date and may not generate product revenue in the foreseeable future, if ever. In the future,

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RXi will be dependent on obtaining funding from third parties, such as proceeds from the issuance of debt, sale of equity, funded research and development programs and payments under partnership and collaborative agreements, in order to maintain RXi s operations and meet RXi s obligations to licensors. There is no guarantee that debt, additional equity or other funding will be available to the Company on acceptable terms, or at all. If the Company fails to obtain additional funding when needed, RXi would be forced to scale back, or terminate the Company operations or to seek to merge with or to be acquired by another company.

2. Summary of Significant Accounting Policies

Basis of Presentation For the period from January 1, 2003 (date of inception) to December 31, 2006, the Predecessor financial information consists of various transactions of CytRx Corporation (**CytRx**), which were identified as direct expenses related to RNAi therapeutics and disaggregated (carved out) from CytRx s financial statements. In addition, various indirect costs related to RNAi therapeutics (mainly senior management and accounting) were estimated and included as part of the Predecessor carved-out financial information. For the period from April 3, 2006 (date of incorporation of Galena) through December 31, 2007, Galena was operating as a subsidiary of CytRx. CytRx is the former parent of Galena. Galena was formed by CytRx and four prominent RNAi researchers to pursue the development of proprietary therapeutics based on RNAi for the treatment of human diseases. The financial information for the period from April 3, 2006 (date of incorporation of Galena) to December 31, 2012 was compiled from Galena s books and records through September 23, 2011, and includes an allocation of indirect costs from CytRx for overhead and general administrative costs provided through December 31, 2007 (that have been allocated based upon estimates developed by CytRx s management and include corporate salaries, benefits, accounting, rent and other general and administrative expenses). There are no Predecessor financial statements for the period from April 3, 2006 (date of incorporation of Galena) to December 31, 2006 as there was no activity. In addition, the financial information for the periods ended December 31, 2011 also includes the results of RXi, the registrant, for the period from September 24, 2011 to December 31, 2011. RXi was formed on September 8, 2011 and was not engaged in any activities other than its initial incorporation from September 8, 2011 to September 23, 2011.

In January 2012, the Company amended its by-laws to increase its authorized common shares from 1,000 shares to 1,500,000,000 shares and to provide for the authorization of 10,000,000 shares of preferred stock. On April 26, 2012, the Board of Directors declared a 33,479.91 for 1 split in the form of a stock dividend of the Company s common stock resulting in the distribution on April 26, 2012 of 3,347,996 additional shares to Galena, the Company s sole stockholder on the record date for the distribution. Contemporaneously, Galena distributed 2,231,996 shares of RXi common stock to its shareholders. Amounts per share and the number of common and preferred shares in the accompanying financial statements have been adjusted to give retroactive effect to the stock split and amount of authorized shares for all periods presented.

Uses of estimates in preparation of financial statements The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of expenses during the reporting period. Actual results could differ materially from those estimates.

Cash and Cash Equivalents The Company considers all highly liquid debt instruments with an original maturity of three months or less to be cash equivalents. Cash equivalents consist primarily of amounts invested in money market accounts.

Restricted Cash Restricted cash consists of certificates of deposit on hand with the Company s financial institutions as collateral for its corporate credit cards.

Fair Value of Financial Instruments The carrying amounts reported in the balance sheet for cash equivalents, restricted cash, accounts payable, capital leases and convertible notes payable approximate their fair values due to their short-term nature and market rates of interest.

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Equipment and Furnishings Equipment and furnishings are stated at cost and depreciated using the straight-line method based on the estimated useful lives (generally three-to-five years for equipment and furniture) of the related assets.

Depreciation and amortization expense for the years ended December 31, 2012 and 2011 was approximately $147,000 and $163,000, respectively.

Impairment of Long-Lived Assets The Company reviews long-lived assets, including finite-lived intangible assets, for impairment on an annual basis, as of December 31, or on an interim basis if an event occurs that might reduce the fair value of such assets below their carrying values. An impairment loss would be recognized based on the difference between the carrying value of the asset and its estimated fair value, which would be determined based on either discounted future cash flows or other appropriate fair value methods. The Company believes no impairment existed as of December 31, 2012 and 2011.

Patents and Patent Application Costs Although the Company believes that its patents and underlying technology have continuing value, the amount of future benefits to be derived from the patents is uncertain. Patent costs are, therefore, expensed as incurred.

Stock-based Compensation The Company follows the provisions of the Financial Accounting Standards Board (**FASB**) Accounting Standards Codification (**ASC**) Topic 718, *Compensation Stock Compensation* (**ASC 718**), which requires the measurement and recognition of compensation expense for all stock-based payment awards made to employees and non-employee directors, and consultants including employee stock options. Stock compensation expense based on the grant date fair value estimated in accordance with the provisions of ASC 718 is recognized as an expense over the requisite service period.

Stock based compensation expense prior to the completion of the spinoff was allocated to the carved out financial statements based on an estimate of time spent by Galena employees, board members, scientific advisory board members, and outside consultants on RXi related matters. Galena options held by current RXi employees were cancelled at the date of the completion of the spin-off except for options to purchase an aggregate of 477,191 shares of Galena common stock. The Company will continue to recognize stock compensation expense on the non-cancelled options as they vest. Under the terms of the option awards, these options will continue to vest as long as the individuals are employed by RXi.

For stock options granted as consideration for services rendered by non-employees, the Company recognizes compensation expense in accordance with the requirements of FASB ASC Topic 505-50, *Equity Based Payments to Non-Employees* (**ASC 505-50**). Non-employee option grants that do not vest immediately upon grant are recorded as an expense over the requisite service period of the underlying stock options. At the end of each financial reporting period prior to vesting, the value of these options, as calculated using the Black-Scholes option-pricing model, will be re-measured using the fair value of the Company s common stock and the non-cash compensation recognized during the period will be adjusted accordingly. Since the fair market value of options granted to non-employees is subject to change in the future, the amount of the future compensation expense will include fair value re-measurements until the stock options are fully vested.

The Company recognized $114,000 and ($79,000) of stock based compensation expense (benefit) related to non-employee stock options for the years ended December 31, 2012 and 2011, respectively.

Revenue Recognition Revenue consists of grant revenue. Revenue from government grants is recognized over the respective contract periods as the services are performed, provided there is persuasive evidence of an arrangement, the fee is fixed or determinable and collection of the related receivable is reasonably assured, and no contingencies remain outstanding. Monies received prior to the recognition of revenue are recorded as deferred revenue.

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Research and Development Expenses Research and development costs are expensed as incurred. Included in research and development costs are wages, benefits, facilities, supplies, external services and other operating costs and overhead related to the our research and development departments, as well as costs to acquire technology licenses and expenses associated with preparation of clinical trials.

Income Taxes The Company recognizes liabilities or assets for the deferred tax consequences of temporary differences between the tax basis of assets or liabilities and their reported amounts in the financial statements in accordance with FASB ASC 740-10, *Accounting for Income Taxes* (**ASC 740-10**) . These temporary differences will result in taxable or deductible amounts in future years when the reported amounts of the assets or liabilities are recovered or settled. ASC 740-10 requires that a valuation allowance be established when management determines that it is more likely than not that all or a portion of a deferred asset will not be realized. The Company evaluates the realizability of its net deferred income tax assets and valuation allowances as necessary, at least on an annual basis. During this evaluation, the Company reviews its forecasts of income in conjunction with other positive and negative evidence surrounding the realizability of its deferred income tax assets to determine if a valuation allowance is required. Adjustments to the valuation allowance will increase or decrease the Company s income tax provision or benefit. The recognition and measurement of benefits related to the Company s tax positions requires significant judgment, as uncertainties often exist with respect to new laws, new interpretations of existing laws, and rulings by taxing authorities. Differences between actual results and RXi s assumptions or changes in the Company s assumptions in future periods are recorded in the period they become known.

Concentrations of Credit Risk Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of cash and cash equivalents. The Company maintains cash balances in several accounts with one bank, which at times are in excess of federally insured limits. The Company s investment policy requires investment in any debt securities be at least investment grade by national ratings services. All of the non-interest bearing cash balances were fully insured at December 31, 2012 due to temporary federal program in effect from December 31, 2010 through December 31, 2012. Under the program, there is no limit to the amount of insurance for eligible accounts. Beginning 2013, insurance coverage will revert to $250,000 per depositor at each financial institution, and the non-interest bearing cash balances may again exceed federally insured limits. As of December 31, 2012, the Company did not have any balances in excess of federally insured limits.

Comprehensive Loss The Company s comprehensive loss is equal to its net loss for all periods presented.

Parent Company s Net Deficit The Parent Company s Net Deficit of the Predecessor consists of CytRx s initial investment in Galena and subsequent changes in Galena s net investment resulting from Galena being an integrated part of CytRx. All disbursements for the Predecessor were made by CytRx.

Non-cash equity adjustments from Parent Company Non-cash equity adjustments from Parent Company consist of credits for issuance of common stock for operational purposes, common stock and warrants issued to individuals engaged in RNAi activities, net of charges for the fair value of Galena warrants that were allocated to the RNAi business and accounted for as a cost of equity at the time of issuance.

Net loss per share The Company accounts for and discloses net loss per common share in accordance with FASB ASC Topic 260, *Earnings per Share* Basic and diluted net loss per common share is computed by dividing net loss attributable to common stockholders by the weighted average number of common shares outstanding.

To determine the shares outstanding for the Company for the periods prior to the distribution of the RXi common shares to the Galena stockholders, Galena s weighted average number of shares is multiplied by the distribution ratio of one share of RXi common stock for every thirty shares of Galena common stock. Basic loss per share is computed by dividing the Company s losses by the weighted average number of shares outstanding

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during the period. When the effects are not anti-dilutive, diluted earnings per share is computed by dividing the Company s net earnings by the weighted average number of shares outstanding and the impact of all dilutive potential common shares. There were no potential dilutive common shares for all periods presented.

The following table sets forth the potential common shares excluded from the calculation of net loss per common share because their inclusion would be anti-dilutive:

	December 31,	
	2012	2011
Options to purchase RXi common stock	2,128,264	
Common stock underlying Series A Preferred Stock	23,707,454	
Warrants to purchase common stock	4,615	
Total	25,840,333	

Reclassifications Certain prior period items have been reclassified to conform to the current year presentation, which affect balance sheet presentation only.

3. Recent Accounting Pronouncements

In February 2013, the FASB issued amendments to the accounting guidance for presentation of comprehensive income to improve the reporting of reclassifications out of accumulated other comprehensive income. The amendments do not change the current requirements for reporting net income or other comprehensive income, but do require an entity to provide information about the amounts reclassified out of accumulated other comprehensive income by component. In addition, an entity is required to present, either on the face of the statement where the net income is presented or in the notes, significant amounts reclassified out of accumulated other comprehensive income by the respective line items of net income but only if the amount reclassified is required under GAAP to be reclassified to net income in its entirety in the same reporting period. For other amounts that are not required under GAAP to be reclassified in their entirety to net income, an entity is required to cross-reference to other disclosures required under GAAP that provide additional detail about these amounts. This new standard is required to be applied retrospectively and is effective for fiscal years and interim periods within those years beginning after December 15, 2012. The adoption of this standard did not impact the Company s financial statements as the Company s comprehensive loss is equal to its net loss for all periods presented.

4. Fair Value Measurements

In January 2010, the FASB issued ASU 2010-06, *Improving Disclosures about Fair Value Measurements* (**ASU 2010-06**). The standard amends FASB ASC Topic 820, *Fair Value Measurements and Disclosures* (**ASC 820**), to require additional disclosures related to transfers in and out of Levels 1 and 2 and for activity in Level 3 and clarifies other existing disclosure requirements. The Company adopted ASU 2010-06 beginning January 1, 2010. This update had no impact on the Company s financial statements.

The Company s financial assets and liabilities that are re-measured and reported at fair value at each reporting period, and are re-measured and reported at fair value at least annually using a fair value hierarchy are broken down into three levels. Level inputs are as defined as follows:

Level 1 quoted prices in active markets for identical assets or liabilities;

Level 2 other significant observable inputs for the assets or liabilities through corroboration with market data at the measurement date;

Level 3 significant unobservable inputs that reflect management s best estimate of what market participants would use to price the assets or liabilities at the measurement date.

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The Company categorized its restricted cash as Level 1 hierarchy. The valuation for Level 1 was determined based on a market approach using quoted prices in active markets for identical assets. Valuations of these assets do not require a significant degree of judgment. The following tables summarize the Company s restricted cash at December 31, 2012 and 2011, respectively, in thousands:

Description	December 31, 2012	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
Assets:				
Restricted cash	$ 53	$ 53	$	$
Total assets	$ 53	$ 53	$	$

Description	December 31, 2011	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
Assets:				
Restricted cash	$ 53	$ 53	$	$
Total assets	$ 53	$ 53	$	$

5. Capital Lease Obligations

The Company acquires equipment under capital leases, which is included in equipment and furnishings in the balance sheet. The cost and accumulated amortization of capitalized leased equipment was approximately $26,000 and $17,000 at December 31, 2012, respectively, and $236,000 and $93,000 at December 31, 2011, respectively. Amortization expense for capitalized leased equipment was approximately $19,000 and $53,000 for the years ended December 31, 2012 and 2011, respectively. During the years ended December 31, 2012 and 2011, the interest expense on these capital leases was negligible. Future minimum lease payments under the capital leases are $5,000 for the year ending December 31, 2013.

6. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consist of the following, in thousands:

	December 31, 2012	2011
Professional fees	$ 108	$ 142
Research and development costs	256	93
Payroll related costs	403	309
Total accrued expenses and other current liabilities	$ 767	$ 544

7. Commitments and Contingencies

License Commitments

The Company acquires assets under development and enters into research and development arrangements with third parties that often require milestone and royalty payments based on the progress of the asset through development stages. Milestone payments may be required, for

example, upon approval of the product for marketing by a regulatory agency. In certain agreements, the Company is required to make royalty payments based upon a percentage of the sales of the products licensed pursuant to such agreements. Because of the contingent nature of these payments, they are not included in the table of contractual obligations shown below (see also Note 11).

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These arrangements may be material individually, and in the unlikely event that milestones for multiple products covered by these arrangements were reached in the same period, the aggregate charge to expense could be material to the results of operations. In addition, these arrangements often give the Company the discretion to unilaterally terminate development of the product, which would allow the Company to avoid making the contingent payments; however, the Company is unlikely to cease development if the compound successfully achieves clinical testing objectives.

License agreements generally relate to the Company s obligations associated with RNAi. The Company continually assesses the progress of its licensed technology and the progress of its research and development efforts as it relates to its licensed technology and may terminate with notice to the licensor at any time. In the event these licenses are terminated, no amounts will be due.

The Company s contractual license obligations that will require future cash payments as of December 31, 2012 are as follows, in thousands:

Year Ending December 31,	
2013	$ 153
2014	138
2015	138
2016	138
2017	138
2018 and thereafter	535
Total	$ 1,240

Operating Leases

The Company leases certain office and laboratory under various operating leases.

Total rent expense under the Company s operating leases was $138,000 and $220,000 for the years ended December 31, 2012 and 2011, respectively.

At December 31, 2012, the Company s future minimum payments required under operating leases are as follows, in thousands:

Year Ending December 31,	
2013	$ 57
2014	13
Total	$ 70

The Company applies the disclosure provisions FASB ASC Topic 460, *Guarantor s Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others* (**ASC 460**), to its agreements that contain guarantee or indemnification clauses. The Company provides: (i) indemnifications of varying scope and size to certain investors and other parties for certain losses suffered or incurred by the indemnified party in connection with various types of third-party claims; and (ii) indemnifications of varying scope and size to officers and directors against third party claims arising from the services they provide to us. These indemnifications give rise only to the disclosure provisions of ASC 460. To date, the Company has not incurred costs as a result of these obligations and does not expect to incur material costs in the future. Accordingly, the Company has not accrued any liabilities in its financial statements related to these indemnifications.

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8. Convertible Preferred Stock and Stockholder s Deficit

Preferred Stock

The Company has authorized up to 10,000,000 shares of preferred stock, $0.0001 par value per share, for issuance. The preferred stock will have such rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, as shall be determined by the Company s board of directors upon its issuance.

On April 27, 2012, the date of completion of RXi s spinoff from Galena, the Company issued 9,500 shares of Series A Preferred Stock. At December 31, 2012, there were 9,726 shares of Series A Preferred Stock outstanding. The increase from the original issuance of 9,500 shares to 9,726 shares at December 31, 2012, represents quarterly dividends paid in additional shares of Series A Preferred Stock, offset by Series A Preferred Stock converted into common shares. The Series A Preferred Stock has the rights and preferences set forth in the Certificate of Designations, Preferences and Rights of Series A Convertible Preferred Stock of the Company (the **Certificate of Designations**), as summarized below.

Dividends

Holders of Series A Preferred Stock shall be entitled to receive cumulative mandatory dividends at the rate per share of seven percent (7%) of the face amount ($1,000 per share) per annum, payable quarterly on each March 31, June 30, September 30 and December 31. Dividends shall be payable in additional shares of Series A Preferred Stock valued for this purpose at the face amount. In the event there are not sufficient authorized preferred shares available to pay such a dividend, the dividend shall instead accrete to and increase the value of the outstanding Series A Preferred Stock. The fair value of the Series A Preferred Stock dividend, which is included in the Company s net loss applicable to common shareholders, is calculated by multiplying the number of common shares that a preferred holder would receive upon conversion by the closing price of the Company s common stock on the dividend payment date. For the year ended December 31, 2012, the fair value of the Series A Preferred Stock dividends of $3,315,000 was included in the Company s net loss applicable to common shareholders.

Liquidation Preference

The Liquidation Preference with respect to a share of Series A Preferred Stock means an amount equal to the face amount of the shares plus all accrued and unpaid dividends on the Series A Preferred Stock (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares). In the event of a liquidation, dissolution, or winding up, whether voluntary or involuntary, no distribution shall be made to the holders of any shares of capital stock of the Company (other than Senior Securities pursuant to the rights, preferences and privileges thereof) unless, prior to this, the holders of shares of Series A Preferred Stock have received the Liquidation Preference with respect to each share then outstanding.

Conversion

Each holder of shares of Series A Preferred Stock may, at any time and from time to time, convert each of its shares into a number of fully paid and non-assessable shares of common stock at the defined conversion rate. Initially, each share of Series A Preferred Stock is convertible into 2,437.57 shares of common stock. In no event shall any holder of shares of Series A Preferred Stock have the right to convert shares of Series A Preferred Stock into shares of common stock to the extent that, after giving effect to such conversion, the holder, together with any of its affiliates, would beneficially owning more than 9.999% of the then-issued and outstanding shares of common stock.

If, at any time, the number of outstanding shares of common stock is increased by a stock split, stock dividend, combination, reclassification or other similar event (in each case, whether by merger or otherwise), then the conversion price shall be proportionately reduced. If the number of outstanding shares of common stock

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is decreased by a reverse stock split, combination or reclassification of shares, or other similar event (in each case, whether by merger or otherwise), then the conversion price shall be proportionately increased. Holders of Series A Preferred Stock are also entitled to adjustments to the conversion price and other rights in the event of a merger, change of control and other defined events.

Voting

The holders of Series A Preferred Stock do not have any right to elect directors and have only limited voting rights, which consist primarily of the right to vote under certain protective provisions set forth in the Certificate of Designations, regarding: (i) any proposed amendment to the Series A Preferred Stock or its right and preferences; and (ii) any proposed Deemed Liquidation Event as defined in the Certificate of Designations.

Accounting for the Series A Preferred Stock

Upon its issuance, the Series A Preferred Stock was first assessed under FASB ASC 480, *Distinguishing Liabilities from Equity* (**ASC 480**), and it was determined that it was not within the scope of ASC 480; therefore, the Series A Preferred Stock was not considered a liability under ASC 480.

The Series A Preferred Stock was then assessed under FASB ASC 815, *Derivatives and Hedging* (**ASC 815**). The Series A Preferred Stock is convertible into common stock at the holders option, subject to the terms of the Certificate of Designations. This embedded feature meets the definition of a derivative. The Company believes that the Series A Preferred Stock is an equity host for the purposes of assessing the embedded conversion option for potential bifurcation. The Company concluded that the conversion option feature is clearly and closely related to the preferred stock host. As such, the conversion feature did not require bifurcation under ASC 815.

The Series A Preferred Stock was then assessed under FASB ASC 470, *Debt with Conversion Features and Other Options* (**ASC 470**), to determine if there was a beneficial conversion feature (**BCF**). The BCF compares the carrying value of the preferred stock after the value of any derivatives has been allocated from the proceeds to the transaction date value of the number of shares of common stock that the holder would receive upon conversion. The calculation resulted in a BCF of $9.5 million. The BCF was recorded in additional paid-in capital.

The Company has recorded the Series A Preferred Stock in temporary equity as the Company may not be able to control the actions necessary to issue the maximum number of common shares needed to provide for a conversion in full of the then outstanding Series A Preferred Stock, at which time a holder of the Series A Preferred Stock may elect to redeem their preferred shares outstanding in the amount equal to the face value per share, plus unpaid accrued dividends. The initial carrying value of the Series A Preferred Stock was $9.5 million. Upon completion of the spinoff, the conversion option of the Series A Preferred Stock was immediately exercisable; therefore, the $9.5 million discount related to the BCF was immediately accreted to Series A Preferred Stock, resulting in an increase in the carrying value of the Series A Preferred Stock to $9.5 million. For the year ended December 31, 2012, the fair value of the BCF of $9.5 million was included in the Company s net loss applicable to common shareholders.

During the year ended December 31, 2012, 224 shares of Series A Preferred Stock were converted into 546,014 shares of common stock of the Company.

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Common Stock

The Company has authorized up to 1,500,000,000 shares of common stock, $0.0001 par value per share, for issuance. Shares of common stock are reserved as follows:

	As of December 31, 2012
Common stock underlying Series A Preferred Stock	23,707,454
Warrants outstanding	4,615
Stock options outstanding	2,128,264
Options reserved for future issuance under the Company s 2012 Incentive Plan	871,736
Total reserved for future issuance	26,712,069

Galena Derivative Liabilities

Derivatives classified as liabilities

Liability-classified derivatives consist of derivatives issued in connection with equity financings by Galena in April 2011, March 2011, March 2010, and March 2009. These warrants were determined not to be indexed to the Galena s common stock, as they are potentially settleable in cash.

The estimated fair value of outstanding derivatives accounted for as liabilities is determined at each balance sheet date. The change in the estimated fair value of the derivative liability is recorded in the statement of operations as other income (expense). On September 24, 2011, the fair value of Galena s derivatives was reclassified to divisional deficit immediately prior to the recapitalization of the Company, as the Company was effectively released of any liability or obligation to settle the warrants pursuant to the contribution agreement with Galena entered into on this date.

The fair value of the derivatives is estimated using the Black-Scholes option pricing model with the following inputs:

	As of September 24, 2011				
	April 2011 Warrants	March 2011 5 Year Warrants	March 2011 13 Month Warrants	March 2010 Warrants	August 2009 Warrants
Strike price	$ 1.00	$ 1.00	$ 1.00	$ 2.70	$ 4.50
Expected term	6.56	4.40	0.50	5.00	2.80
Volatility	98.87%	98.87%	98.87%	98.87%	98.87%
Risk-free rate	1.35%	0.63%	0.02%	0.89%	0.37%

Galena s expected volatility is based on a combination of implied volatilities of similar publicly traded entities. The expected life assumption is based on the remaining contractual terms of the warrants. The risk-free rate is based on the zero coupon rates for U.S. Treasury securities in effect at the time of issuance. The dividend yield used in the pricing model is zero, because Galena has no present intention to pay cash dividends.

The change in fair value of the warrant liability during the period ended September 24, 2011 was as follows (in thousands):

	April 2011 Warrants	March 2011 Warrants	March 2010 Warrants	August 2009 Warrants	Total

Derivative liability, January 1, 2011	$	$	$ 1,195	$ 1,943	$ 3,138
Derivative liability at issuance	6,932	1,790			8,722
Change in fair value of derivatives	561	(625)	(881)	(1,666)	(2,611)
Reclassification to divisional deficit	(7,493)	(1,165)	(314)	(277)	(9,249)
Derivative liability, September 24, 2011	$	$	$	$	$

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9. Stock-Based Compensation

The Company follows the provisions of the ASC 718, which requires the measurement and recognition of compensation expense for all stock-based payment awards made to employees and non-employee directors including employee stock options. Stock compensation expense based on the grant date fair value estimated in accordance with the provisions of ASC 718 is recognized as an expense over the requisite service period.

For stock options granted as consideration for services rendered by non-employees, the Company recognizes compensation expense in accordance with the requirements of ASC 505-50. Non-employee option grants that do not vest immediately upon grant are recorded as an expense over the requisite service period of the underlying stock options. At the end of each financial reporting period prior to vesting, the value of these options, as calculated using the Black-Scholes option-pricing model, will be re-measured using the fair value of the Company s common stock and the non-cash compensation recognized during the period will be adjusted accordingly. Since the fair market value of options granted to non-employees is subject to change in the future, the amount of the future compensation expense will include fair value re-measurements until the stock options are fully vested.

RXi Stock-Based Compensation

On January 23, 2012, the Company s board of directors and sole stockholder adopted the RXi Pharmaceuticals Corporation 2012 Long-Term Incentive Plan (the **2012 Incentive Plan**). Under the 2012 Incentive Plan, the Company may grant incentive stock options, nonqualified stock options, cash awards, stock appreciation rights, restricted and unrestricted stock and stock unit awards and other stock-based awards. As of December 31, 2012, an aggregate of 3,000,000 shares of common stock were reserved for issuance under the Company s 2012 Incentive Plan, including 2,128,264 shares subject to outstanding common stock options granted under this plan and 871,736 shares available for future grants.

The Company s board of directors currently acts as the administrator of the Company s 2012 Incentive Plan. The administrator has the power to select participants from among the key employees, directors and consultants of and advisors to the Company, establish the terms, conditions and vesting schedule, if applicable, of each award and to accelerate vesting or exercisability of any award.

The Company is currently using the Black-Scholes option-pricing model to determine the fair value of all its option grants. For option grants for the year ended December 31, 2012 and 2011, the following assumptions were used:

	Year Ended December 31,		
	2012		2011
Risk-free interest rate	0.69%	1.64%	N/A
Expected volatility	88.17%	115.21%	N/A
Expected option term (years)	5.20	10.00	N/A
Expected dividend yield	0.00%		N/A

The weighted-average fair value of options granted during the year ended December 31, 2012 was $2.10 per share.

The Company s expected common stock price volatility assumption is based upon the volatility of a composition of comparable companies. The expected life assumptions for employee grants were based upon the simplified method provided for under ASC 718-10. The expected life assumptions for non-employees were based upon the contractual term of the option. The dividend yield assumption of zero is based upon the fact that RXi has never paid cash dividends and presently has no intention of paying cash dividends. The risk-free interest rate

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used for each grant was also based upon the yield on zero-coupon U.S. Treasury securities. RXi has estimated an annualized forfeiture rate of 5.0% for options granted to its employees and 0% forfeiture rate for the directors.

RXi will record additional expense if the actual forfeitures are lower than estimated and will record a recovery of prior expense if the actual forfeiture rates are higher than estimated.

The following table summarizes the activity of Company s stock option plan for the period January 1, 2012 to December 31, 2012:

	Stock Options	Weighted Average Exercise Price
Outstanding, January 1, 2012		
Granted	2,128,264	3.00
Exercised		
Cancelled		
Outstanding, December 31, 2012	2,128,264	$ 3.00
Exercisable, December 31, 2012	157,221	$ 3.30

The weighted-average remaining contractual life of options outstanding and exercisable at December 31, 2012 was 9.40 years and 9.39 years, respectively.

The aggregate intrinsic value of outstanding options as of December 31, 2012 was $1,900. The aggregate intrinsic value of exercisable options as of December 31, 2012 was $950. The aggregate intrinsic value is calculated based on the positive difference between the closing fair market value of the Company s common stock and the exercise price of the underlying options.

RXi recorded approximately $968,000 and $2,111,000 of stock-based compensation for the years ended December 31, 2012 and 2011, respectively. As of December 31, 2012, there was $3,859,000 of unrecognized compensation cost related to outstanding options that is expected to be recognized as a component of RXi s operating expenses through 2016.

Predecessor (RNAi) Stock-Based Compensation Expense

The following stock-based compensation information relates to stock options issued by Galena. Stock-based compensation expense prior to the completion of the spinoff was allocated to the carved out financial statements based on an estimate of time spent by Galena employees, board members, scientific advisory board members, and outside consultants on RXi related matters. Galena options held by current RXi employees were cancelled at the date of the completion of the spin-off except for options to purchase an aggregate of 477,191 shares of Galena common stock. The Company will continue to recognize stock compensation expense on the non-cancelled options as they vest. Under the terms of the option awards, these options will continue to vest as long as the individuals are employed by RXi. As of December 31, 2012, 477,191 options remain outstanding with a range of exercise prices from $0.65 to $7.50.

Galena is currently using the Black-Scholes option-pricing model to determine the fair value of all its option grants. For option grants for the year ended December 31, 2012 and 2011, the following assumptions were used:

	Year Ended December 31, 2012	2011
Weighted average risk-free interest rate	1.01%	1.76%
Weighted average expected volatility	75.96%	105.06%
Weighted average expected term (years)	5.96	5.51
Weighted average expected dividend yield	0.00%	0.00%

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The weighted average fair value of options granted during the years ended December 31, 2012 and 2011 was $0.47 and $0.98 per share, respectively.

Galena s expected common stock price volatility assumption is based upon the volatility of a composition of comparable companies. The expected life assumptions for employee grants were based upon the simplified method provided for under ASC 718-10. The expected life assumptions for non-employees were based upon the contractual term of the option. The dividend yield assumption of zero is based upon the fact that Galena has never paid cash dividends and presently has no intention of paying cash dividends. The risk-free interest rate used for each grant was also based upon the yield on zero-coupon U.S. Treasury securities. Galena has estimated an annualized forfeiture rate of 15.0% for options granted to its employees, 8.0% for options granted to senior management and no forfeiture rate for the directors. RXi will record additional expense if the actual forfeitures are lower than estimated and will record a recovery of prior expense if the actual forfeiture rates are higher than estimated.

Of the total stock-based compensation expense recorded by RXi, approximately $283,000 and $2,111,000 related to options issued by Galena for the years ended December 31, 2012 and 2011, respectively.

10. Income Taxes

The components of federal and state income tax expense are as follows (in thousands):

	Year Ended December 31,	
	2012	**2011**
Current		
Federal	$	$
State		
Total current		
Deferred		
Federal	(1,903)	(884)
State	(484)	(229)
Total deferred	(2,387)	(1,113)
Valuation allowance	2,387	1,113
Total income tax expense	$	$

The components of net deferred tax assets are as follows (in thousands):

	As of December 31,	
	2012	**2011**
Net operating loss carryforwards	$ 3,054	$ 986
Tax credit carryforwards	3	
Stock based compensation	282	
Other timing differences	105	127
Licensing deduction deferral	57	
Gross deferred tax assets	3,501	1,113
Valuation allowance	(3,501)	(1,113)
Net deferred tax asset	$	$

Prior to the incorporation of RXi in September 2011, the deferred tax assets of RXi were carved-out of the financial statements of Galena. Accordingly, the deferred tax assets at December 31, 2011 are not necessarily

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reflective of the deferred tax assets of RXi after its incorporation. RXi s deferred tax assets at December 31, 2012 consisted primarily of its net operating loss carryforwards, tax credit carryforwards and certain accruals that for tax purposes are not deductible until future payment is made.

The Company has incurred net operating losses since inception. At December 31, 2012, the Company had federal and state net operating loss carryforwards of approximately $7.8 million, which are available to reduce future taxable income expiring in 2031. Net operating loss and research and development tax credit carryforwards generated prior to September 8, 2011 were retained by Galena and not available to RXi. Based on an assessment of all available evidence including, but not limited to the Company s limited operating history in its core business and lack of profitability, uncertainties of the commercial viability of its technology, the impact of government regulation and healthcare reform initiatives, and other risks normally associated with biotechnology companies, the Company has concluded that it is more likely than not that these net operating loss carryforwards and credits will not be realized and, as a result, a 100% deferred income tax valuation allowance has been recorded against these assets.

Under the provisions of the Internal Revenue Code, certain substantial changes in the Company s ownership may result in a limitation on the amount of net operating loss carryforwards and research and development credit carryforwards which could be utilized annually to offset future taxable income and taxes payable.

The Company adopted certain provisions of ASC 740, effective January 1, 2007, which clarifies the accounting for uncertainty in income taxes recognized in financial statements and requires the impact of a tax position to be recognized in the financial statements if that position is more likely than not of being sustained by the taxing authority. The adoption of ASC 740-10 did not have any effect on the Company s financial position or results of operations.

The Company files income tax returns in the U.S. and Massachusetts. The Company is subject to tax examinations for the 2012 tax year. The Company does not believe there will be any material changes in its unrecognized tax positions over the next 12 months. RXi has not incurred any interest or penalties. In the event that the Company is assessed interest or penalties at some point in the future, they will be classified in the financial statements as general and administrative expense.

11. License Agreements

As part of its business, the Company enters into licensing agreements with third parties that often require milestone and royalty payments based on the progress of the asset through development stages. Milestone payments may be required, for example, upon approval of the product for marketing by a regulatory agency. In certain agreements, the Company is required to make royalty payments based upon a percentage of the sales of the products licensed pursuant to such agreements.

The expenditures required under these arrangements may be material individually in the event that the Company develops product candidates covered by the intellectual property licensed under any such arrangement, and in the unlikely event that milestones for multiple products covered by these arrangements were reached in the same period, the aggregate charge to expense could be material to the results of operations. In addition, these arrangements often give the Company discretion to unilaterally terminate development of the product, which would allow the Company to avoid making the contingent payments; however, the Company is unlikely to cease development if the compound successfully achieves clinical testing objectives.

University of Massachusetts Medical School. We hold a non-exclusive license from the University of Massachusetts Medical School (**UMMS**). This license grants to us rights under certain UMMS patent applications to make, use and sell products related to applications of RNAi technologies in particular fields, including HCMV and retinitis, amyotrophic lateral sclerosis, known as ALS or Lou Gehrig s Disease, diabetes and obesity. Throughout the term of the license, we must pay UMMS an annual maintenance fee of $15,000. We also will be required to pay to UMMS customary royalties of up to 10% of: (i) any future net sales

of licensed products; (ii) income received from any sublicensees under this license; and (iii) net sales of commercial clinical laboratory services, subject to a minimum royalty of $50,000 beginning in 2016. We also agreed to pay expenses incurred by UMMS in prosecuting and maintaining the licensed patents.

The UMMS license was effective on April 15, 2003, and will remain in effect until: (i) the expiration of all issued patents within the patent rights (as defined); or (ii) for a period of ten years after the effective date if no such patents have issued within the ten-year period, unless earlier terminated in accordance with the provisions of the license. In the event that either party commits a material breach of its obligations under the UMMS license and fails to cure that breach within 60 days after receiving written notice thereof, the other party may terminate the UMMS license immediately upon written notice to the party in breach.

Dharmacon. We have entered into a license agreement with Dharmacon, Inc. (now part of Thermo Fisher Scientific Inc.), pursuant to which we obtained an exclusive license to certain RNAi sequences for a number of target genes for the development of our rxRNA ® compounds. Furthermore, we hold the right to license additional RNAi sequences, under the same terms, disclosed by Thermo Fisher Scientific Inc. in its pending patent applications against target genes and have received an option for exclusivity for other siRNA configurations. As partial consideration for this license, we have agreed to pay future clinical milestone payments in an aggregate amount of up to $2,000,000 and royalty payments of either 0.25% or 0.5% based on the level of any future sales of siRNA compositions developed in connection with the licensed technology.

Advirna. We have entered into agreements with Advirna, or their surviving entity, pursuant to which Advirna assigned to us its existing patent and technology rights related to sd-rxRNA technology in exchange for our agreement to pay Advirna an annual maintenance fee of $100,000 and a one-time milestone payment of $350,000 upon the issuance of the first patent with valid claims covering the assigned technology. Additionally, we will be required to pay a 1% royalty to Advirna on any licensing revenue received by us with respect to future licensing of the assigned Advirna patent and technology rights. We also granted back to Advirna a license under the assigned patent and technology rights for fields of use outside human therapeutics and diagnostics and issued to Advirna, upon the completion of the spin-off transaction from Galena, 1,394,997 shares of common stock. The Company recorded research and development expense of $6,173,000 to recognize the fair value of the common shares issued in exchange for the sd-rxRNA® patent and technology rights assigned to RXi by Advirna.

Our rights under the Advirna agreement will expire upon the later of: (i) the expiration of the last-to-expire of the patent rights (as defined) included in the Advirna agreement; or (ii) the abandonment of the last-to-be abandoned of such patents, unless earlier terminated in accordance with the provisions of the agreement.

We may terminate the Advirna agreement at any time upon 90 days written notice to Advirna, and Advirna may terminate the agreement upon 90 days prior written notice in the event that we cease using commercially reasonable efforts to research, develop, license or otherwise commercialize the patent rights or royalty-bearing products (as defined), provided that we may refute such claim within such 90-day period by showing budgeted expenditures for the research, development, licensing or other commercialization consistent with other technologies of similar stage of development and commercial potential as the patent rights or royalty-bearing products. Further, either party at any time may provide to the other party written notice of a material breach of the agreement. If the other party fails to cure the identified breach within 90 days after the date of the notice, the aggrieved party may terminate the agreement by written notice to the party in breach.

12. Related Party Transactions

As part of the transactions contemplated by the contribution agreement and Series A SPA, on September 24, 2011, RXi entered into an agreement with Advirna, which was co-founded by RXi s former Senior Vice President and Chief Scientific Officer, pursuant to which Advirna assigned to RXi its existing patent and technology rights related to *sd* -rxRNA ® technology in exchange for RXi s agreement to pay Advirna an annual maintenance fee, other consideration upon the achievement of certain milestones and issued to Advirna, at the

date of the completion of the spinoff, 1,394,997 shares of common stock. We also granted back to Advirna a license under the assigned patent and technology rights for fields of use outside human therapeutics and diagnostics (see also Note 11).

Pursuant to a letter agreement between Galena and each founder dated as of April 30, 2007, the SAB Letters , in further consideration of the services to be rendered by the founders under the SAB Agreements, Galena granted additional stock options on May 23, 2007 under the 2007 Plan to each of the founders to purchase 26,416 shares of its common stock. Unless a founder terminates a SAB Agreement without good reason (as defined therein) or the Company terminates a SAB Agreement with cause (as defined therein), the options granted pursuant to the SAB Letters will fully vest from and after April 29, 2012 and will have a term of ten years from the date of grant. At December 31, 2012 and 2011, the fair market value of stock options under the SAB Agreement for each founder was approximately $28,000 and $5,000, respectively, which was estimated using the Black-Scholes option-pricing model as more fully discussed above under the summary of significant accounting policies and the stock based compensation footnote. Included in the Company s financial statements for the years ended December 31, 2012 and 2011 is approximately $93,500 of expense and $159,000 of income, respectively, related to these stock options.

13. Subsequent Events

The Company evaluated all events or transactions that occurred after December 31, 2012 up through the date these financial statements were issued. The Company did not have any material recognizable or unrecognizable subsequent events except as otherwise disclosed below and elsewhere in the notes to the financial statements.

On March 1, 2013, the Company entered into an asset purchase agreement with OPKO pursuant to which RXi acquired substantially all of OPKO s RNAi-related assets, including patents, licenses, clinical and preclinical data and other related assets. Upon the close of the asset purchase agreement with OPKO on March 12, 2013, the Company issued to OPKO 1,666,666 shares of common stock. Under the asset purchase agreement, the Company will make, if applicable, up to $50 million per product in development and commercialization milestones for the successful development and commercialization of products utilizing the acquired OPKO intellectual property. In addition, if applicable, upon commercialization of these products the Company will make royalty payments to OPKO.

The Company assessed the acquired OPKO RNAi assets under FASB ASC Topic 805, *Business Combination* (**ASC 805**), and it was determined that the transaction be accounted for as a purchase of assets, as the acquired assets did not constitute a business under the guidance of ASC 805. The assets purchased from OPKO are at an early stage of development, and, as such, determining the future economic benefit of the OPKO RNAi assets at the date of acquisition is highly uncertain. Accordingly, the fair value of the OPKO RNAi assets acquired will be expensed as in-process research and development in the first quarter of 2013.

On March 6, 2013, the Company entered into a securities purchase agreement pursuant to which RXi agreed to issue 3,765,230 shares of common stock at a price of $4.35 per share. The gross proceeds from the offering, which closed on March 12, 2013, were approximately $16.4 million, and the net proceeds, after payment of commissions, were approximately $16.0 million.

On July 18, 2013, the Board of Directors of the Company approved a 1-for-30 reverse stock split of the Company s outstanding common stock, which was effected on July 23, 2013. Stockholders entitled to fractional shares as a result of the reverse stock split were entitled to receive a cash payment in lieu of receiving fractional shares. Shares of common stock underlying outstanding stock options and other equity instruments were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased in accordance with the terms of the agreements governing such securities. Shares of common stock reserved for issuance upon the conversion of the Company s Series A Preferred Stock were proportionately reduced and the respective conversion prices were proportionately increased.

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RXI Pharmaceuticals Corporation

3,765,230 Shares of Common Stock

PROSPECTUS

August 8, 2013