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

FORM 8-K

**CURRENT REPORT
PURSUANT TO SECTION 13 OR 15(D) OF THE
THE SECURITIES EXCHANGE ACT OF 1934**

Date of report (Date of earliest event reported): May 17, 2010

RXI PHARMACEUTICALS CORPORATION

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
of incorporation or organization)

001-33958

(Commission
File Number)

20-8099512

(I.R.S. Employer
Identification No.)

60 Prescott Street, Worcester, MA 01605

(Address of Principal Executive Offices) (Zip Code)

Registrant's telephone number, including area code: (508) 767-3861

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (*see* General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
 - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
 - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
 - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
-
-

Item 2.02 Results of Operations and Financial Condition.

On May 17, 2010 RXi Pharmaceuticals Corporation issued a press release announcing its financial results for its first quarter ended March 31, 2010, a copy of which is attached as Exhibit 99.1 to this Current Report and incorporated herein by reference.

The information being furnished under Item 2.02 in this Form 8-K, including the accompanying exhibits, shall not be deemed to be “filed” for the purposes of Section 18 of the Securities and Exchange Act of 1934 (the “Exchange Act”), or otherwise subject to the liability of such section, nor shall such information be deemed incorporated by reference in any filing under the Securities Act of 1933 or the Exchange Act, regardless of the general incorporation language of such filing, except as shall be expressly set forth by specific reference in such filing.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

99.1 Press Release issued by RXi Pharmaceuticals Corporation on May 17, 2010

Signature

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

RXI PHARMACEUTICALS CORPORATION

Date: May 18, 2010

By: /s/ Konstantinos Andrikopoulos

Name: Konstantinos Andrikopoulos

Title: Vice President, Legal

Index to Exhibits

<u>Exhibit No.</u>	<u>Description</u>
99.1	Press Release issued by RXi Pharmaceuticals Corporation on May 17, 2010



RXi Pharmaceuticals Reports Financial Results for the First Quarter of 2010

WORCESTER, Mass.—(BUSINESS WIRE)—May 17, 2010— RXi Pharmaceuticals Corporation (Nasdaq: RXII), a biopharmaceutical company pursuing the development and commercialization of proprietary therapeutics based on RNA interference (RNAi), today reported its financial results for the quarter ended March 31, 2010.

“We have continued to make excellent progress in all aspects of our business including advancing our rxRNA™ therapeutic platform, establishing important industry and academic collaborations, significantly strengthening our balance sheet, and reporting outstanding preclinical data in multiple therapeutic areas,” said Noah Beerman, President and Chief Executive Officer of RXi. “As we move forward, 2010 promises to be a pivotal and transitional year for RXi, enabling us to evolve from a research-focused company to one identified by compelling product development programs, a focused therapeutic strategy, and validating corporate partnerships.”

Quarterly and Other Recent Highlights

Corporate Highlights:

- **Completed \$16.2 million Public Offering.** After deal-related expenses including placement agent fees and the repurchase of 675,000 shares of RXi stock from CytRx Corporation at a price of \$5.70 per share, RXi received approximately \$11.4 million in net proceeds from the offering that closed on March 26, 2010. Proceeds from the transaction will be used to meet working capital needs and for general corporate purposes.
 - **Established Collaboration Agreements with Biotechnology and Pharmaceutical Partners.** In a concerted effort to accelerate the development and validate the utility of its proprietary rxRNA therapeutic platform, RXi entered into research agreements with a number of biotechnology companies, including: 1) Transderm, Inc., to explore the use of both existing and proprietary delivery approaches for dermatological applications, 2) Mirna Therapeutics, to determine the utility of combining RXi’s proprietary rxRNA technology with Mirna’s microRNA mimics as potential therapeutics in oncology, and 3) miRagen Therapeutics, Inc., to evaluate the potential utility of RXi’s proprietary rxRNA technology against specific miRNA targets of interest to
-

miRagen in the cardiac and neuromuscular disease areas. In addition, we continue ongoing collaborations with several undisclosed pharmaceutical companies.

- **Initiated Research Collaboration Focused on Ocular Disease.** RXi initiated research collaboration with Shalesh Kaushal, M.D., Ph.D., Chairman of the Department of Ophthalmology at The University of Massachusetts Medical School focused on the application of RXi's self-delivering RNAi (sd-rxRNA™) compounds for ocular diseases such as age-related macular degeneration.
- **Participated in Numerous Investor Events .** Management participated in a number of investor-focused conferences hosted by investment banks and other organizations.

Scientific Achievements:

- **Presented New Preclinical Data on rxRNA Compounds.** Data was presented at the Keystone Symposia's RNA Silencing: Mechanism, Biology and Application held January 14-19 in Keystone, Colorado demonstrating the continued advancement of the company's RNAi therapeutics platform. RXi presented four posters including: 1) Novel, Chemically Modified RNAi Compounds with Improved Potency, Stability and Specificity, 2) Novel "Self-Delivering" RNAi Compounds with Enhanced Cellular Uptake and Distribution Properties, 3) Robust Intradermal Efficacy with Novel Chemically Modified Self-Delivering RNAi Compounds, and 4) Highly Potent RNAi Compounds Derived from a Single, Short Oligonucleotide Sequence
 - **Publication of Data in Peer Reviewed Journal.** An article entitled "Modified dsRNAs that are not processed by Dicer maintain potency and are incorporated into the RISC" was published in the journal Nucleic Acids Research, January 2010. The data expands the understanding of how chemically modified RNAi duplexes interact with key proteins involved in the silencing pathway and that longer, modified duplexes can be highly potent target gene silencers.
 - **Presented New Preclinical Data with sd-rxRNA Compounds in Compromised Skin.** Data generated using a fluorescently-tagged sd-rxRNA compound demonstrate spontaneous cellular uptake into dermal cells and a significant, sustained and reproducible silencing of the targeted mRNA. The data presented establish the efficacy of locally-administered sd-rxRNA in animal models and support the potential use of these novel compounds for clinical applications where direct or local administration is possible.
-

- **Demonstrated Robust *in vivo* Uptake and Silencing in Mouse Retinal Cells.** New preclinical data obtained in collaboration with the laboratory of Shalesh Kaushal, M.D., Ph.D., Chairman of the Department of Ophthalmology at The University of Massachusetts Medical School (UMMS) showed effective delivery of RXi's proprietary sd-rxRNA to retinal cells in the mouse eye and demonstrated significant target gene silencing *in vivo* following local administration. In comparison, local injection of a more traditional RNA duplex results in negligible delivery to mouse retinal cells.

Quarterly Financial Highlights:

For the first quarter of 2010, our net loss was approximately \$3.9 million, or \$.24 per share on both a basic and diluted basis, based on 16.4 million weighted average shares outstanding, compared with a net loss of \$4.2 million, or \$.30 per share on both a basic and diluted basis, based on 13.8 million weighted average shares outstanding, for the first quarter of 2009.

Research and development expenses for the fourth quarter of 2009 were \$1.9 million, including approximately \$0.4 million in non-cash share-based compensation, compared with \$1.4 million, including \$0.2 million in non-cash share-based compensation, for the first quarter of 2010. The increase of \$0.5 million, or 36%, was primarily due to an increase in non-employee non-cash share based compensation as well as compensation and related expenses from the additional headcount to support the company's collaborations and internal discovery efforts as well as increased patent application and prosecution expenses.

General and administrative expenses for the first quarter of 2010 were \$2.5 million including \$1.1 million in non-cash share based compensation, compared with \$2.8 million including \$1.5 million in non-cash share based compensation for the first quarter of 2009. The decrease of \$0.3 million, or 11%, was primarily due to the fair value adjustment associated with the issuance of common stock and other non-cash share based compensation.

The Company had 18,358,339 common shares outstanding at March 31, 2010, as compared with 13,821,629 common shares outstanding at March 31, 2009.

As of March 31, 2010, cash and cash equivalents totaled \$14.9 million, compared with cash and cash equivalents of \$5.7 million at December 31, 2009. This increase is due to cash used in operations of \$2.4 million for the three months ended March 31, 2010 and \$3.8 million in costs associated with the redemption of common stock partially offset by the proceeds from the Company's registered direct offering in March 2010 whereby after deducting placement agent fees and other offering costs the Company received approximately \$15.2 million in net proceeds.

About RXi Pharmaceuticals Corporation

RXi Pharmaceuticals is a discovery-stage biopharmaceutical company pursuing the development and commercialization of proprietary therapeutics based on RNA interference (RNAi) for the treatment of human diseases. RXi has a comprehensive therapeutic platform that includes both novel RNAi compounds and advanced delivery methods that can potentially be applied for local and systemic applications, against targets that may be undruggable by other modalities. RXi uses its proprietary version of RNAi compounds — rxRNA — that provide an advanced alternative to conventional small interfering RNAs (siRNAs) and define the next generation of RNAi technology. These include rxRNAori™, rxRNAsolo™, and sd-rxRNA (or “self delivering” RNA), which are distinct from, and potentially convey significant advantages over, classic siRNA’s. RXi Pharmaceuticals believes it is well positioned to compete successfully in the RNAi therapeutics market based on the strength of its next generation therapeutic platform, experienced management team, accomplished Scientific Advisory Board, including Dr. Craig Mello, recipient of the 2006 Nobel Prize for his co-discovery of RNAi, and its broad intellectual property position in RNAi chemistry and delivery. <http://www.rxipharma.com>

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements include, but are not limited to, statements about future expectations, plan and future development of RXi Pharmaceutical Corporation’s products and technologies. These forward-looking statements about future expectations, plans and prospects of the development of RXi Pharmaceutical Corporation’s products and technologies involve significant risks, uncertainties and assumptions, including the risk that the development of our RNAi-based therapeutics may be delayed or may not proceed as planned and we may not be able to complete development of any RNAi-based product, the risk that the FDA approval process may be delayed for any drugs that we develop, risks related to development and commercialization of products by our competitors, risks related to our ability to control the timing and terms of collaborations with third parties and the possibility that other companies or organizations may assert patent rights that prevent us from developing our products. Actual results may differ materially from those contemplated by these forward-looking statements. RXi Pharmaceuticals Corporation does 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 release.

SOURCE: RXi Pharmaceuticals Corporation

Rxi Pharmaceuticals Corporation
(A Development Stage Company)
Condensed Statements of Expenses
(in thousands, except per share data)
(Unaudited)

	For the Three Months Ended March 31, 2010	For the Three Months Ended March 31, 2009	From Inception January 1, 2003 - March 31, 2010
Research and development expenses	\$ 1,926	\$ 1,416	\$ 33,160
General and administrative expenses	2,530	2,755	24,848
Operating loss	(4,456)	(4,171)	(58,008)
Other income (expense), net	570	—	331
Net loss	<u>\$ (3,886)</u>	<u>\$ (4,171)</u>	<u>\$ (57,677)</u>
Net loss per common share:			
Basic and diluted loss per share	<u>(\$0.24)</u>	<u>(\$0.30)</u>	<u>N/A</u>
Weighted average common shares outstanding:			
Basic and diluted	<u>16,386,435</u>	<u>13,802,812</u>	<u>N/A</u>

RXi Pharmaceuticals Corporation
(A Development Stage Company)
Condensed Balance Sheets
(in thousands)
(Unaudited)

	March 31, 2010	December 31, 2009
Cash and cash equivalents	\$14,854	\$ 5,684
Prepaid expenses and other current assets	460	120
Equipment and furnishings, net	432	432
Deposits	16	16
Total assets	<u>\$15,762</u>	<u>\$ 6,252</u>
Accounts payable	\$ 1,121	\$ 625
Accrued expense and other current liabilities	1,226	1,077
Fair value of common stock potentially redeemable for cash	785	—
Fair value of warrants potentially settleable in cash	5,616	3,721
Current maturities of capital lease obligations	51	52
Total current liabilities	8,799	5,475
Capital lease obligations, net of current maturities	52	36
Total liabilities	<u>8,851</u>	<u>5,511</u>
Total stockholders' equity	<u>6,911</u>	<u>741</u>
Total liabilities and stockholders' equity	<u>\$15,762</u>	<u>\$ 6,252</u>

RXi Pharmaceuticals

Investor Relations, 508-929-3615

ir@rxipharma.com

or

Investors

S. A. Noonan Communications

Susan Noonan, 212-966-3650

susan@sanoonan.com

or

Media

Rx Communications Group

Eric Goldman, 917-322-2563

egoldman@rxir.com