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

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**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 15, 2008

**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))
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### **Item 2.02 Results of Operations and Financial Condition.**

On May 15, 2008, RXi Pharmaceuticals Corporation issued a press release relating to its results of operations and financial conditions for the quarter ended March 31, 2008. A copy of the press release is furnished as Exhibit 99.1 to this form 8-K.

### **Item 9.01 Financial Statements and Exhibits.**

(d) Exhibits

99.1 Press Release issued by RXi Pharmaceuticals Corporation on May 15, 2008.

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**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.

Date: May 20, 2008

RXI PHARMACEUTICALS CORPORATION

By: /s/ Stephen J. DiPalma

Name: Stephen J. DiPalma

Title: Chief Financial Officer

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**Index to Exhibits**

<u>Exhibit No.</u>	<u>Description</u>
99.1	Press Release issued by RXi Pharmaceuticals Corporation on May 15, 2008.

**RXi Pharmaceuticals Reports Financial Results for the Three Months Ended March 31, 2008**

**Worcester, MA, May 15, 2008** – RXi Pharmaceuticals Corporation (Nasdaq: RXII), a discovery-stage biopharmaceutical company pursuing the development and commercialization of proprietary therapeutics based on RNA interference (RNAi), today reported results for the quarter ended March 31, 2008.

“RXi achieved an important step toward our goal of creating a leading independent, pure play RNAi therapeutics company with the initiation of public trading of our common stock in the first quarter,” stated Tod Woolf, Ph.D., Chief Executive Officer of RXi. “We believe we are well positioned to achieve the key corporate milestones we have established, including entering into our first pharmaceutical partnership this year. Additionally, we expect to make several strategic additions to both our team and to our technology platform later this year. I am pleased with the potency our scientists have achieved with our rxRNA™ compounds as we deploy them against multiple high value therapeutic target genes.”

**Quarterly Highlights****Business Highlights:**

RXi began trading on the NASDAQ Capital Market under the stock symbol RXII on March 12, 2008 and analyst coverage on the company was initiated by Natixis Bleichroeder. RXi also moved into new state-of-the-art laboratory and office space.

**Building the Pipeline:**

RXi is actively generating rxRNA™ compounds against eight therapeutic target genes in three high value therapeutic areas: neurology, metabolic disease and inflammation. RXi's rxRNA™ compound screening system can rapidly identify rxRNA compounds with high (picomolar) activity for gene targets selected by RXi. Compounds developed in our discovery pipeline are available for potential alliances, internal development and collaborations.

**Scientific Achievements:**

RXi has filed patent applications on multiple improved forms of RNAi compounds. Its founders and scientific advisors and staff have presented at the major academic and industrial RNAi conferences of the year. RXi has data demonstrating the cellular mechanism of RXi's proprietary rxRNA™ (poster presented at Keystone and available on RXi's website). Additionally, an RXi founder and scientific advisor published a paper on RNAi efficacy against amyotrophic lateral sclerosis (ALS), often referred to as Lou Gehrig's Disease (Journal of Biological Chemistry, April 2008).

**Financial Highlights of the First Quarter of 2008**

The Company reported a net loss of \$2,646,000, or \$0.21 per share, for the three months ended March 31, 2008, compared to a net loss of \$1,412,000, or \$0.17 per share, for the same period in 2007. The Company had 12,684,432 common shares outstanding at March 31, 2008, as compared to 8,117,016 common shares outstanding at March 31, 2007.

Research and development expenses were \$1,088,000 for the three months ended March 31, 2008, compared to \$824,000 for the three months ended March 31, 2007. The increase of \$264,000, or 32.0%, was due to higher staff-related and supplies costs, partially offset by lower costs associated with non-employee stock based compensation.

General and Administrative expenses were \$1,625,000 for the three months ended March 31, 2008, compared to \$588,000 for the three months ended March 31, 2007. The increase of \$1,037,000, or 176.4%, was due to higher staff-related costs, including \$423,000 in stock option compensation expense, and to costs associated with being a public company, including legal, printing and other costs related to our SEC filings and investor relations costs, partially offset by the elimination of the allocation of indirect costs from our former parent company, CytRx Corporation.

As of March 31, 2008, the Company had \$9,857,000 in cash and cash equivalents, compared to cash, cash equivalents, and short term investments of \$11,715,000 at December 31, 2007.

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## **About RXi Pharmaceuticals Corporation**

RXi Pharmaceuticals is a discovery-stage biopharmaceutical company pursuing the development and potential commercialization of proprietary therapeutics based on RNA interference (RNAi) for the treatment of human diseases. RXi Pharmaceuticals' rxRNA™ compounds are distinct from the siRNA compounds used by many other companies developing RNAi therapeutics and are believed by the Company, based on its internal research, to be up to 100x more active than conventional siRNA (depending on the target site), nuclease resistant and readily manufactured. RXi Pharmaceuticals believes it is well positioned to compete successfully in the RNAi-based therapeutics market with its accomplished scientific advisors, including Dr. Craig Mello, recipient of the 2006 Nobel Prize for his co-discovery of RNAi; a management team that is experienced in developing RNAi products; and a strong early intellectual property position in RNAi chemistry and delivery.

## **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, 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 RXi Pharmaceuticals Corporation 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.

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

	For the three months ended March 31, 2008	For the three months ended March 31, 2007	From Inception January 1, 2003 - March 31, 2008
<b>Costs and Expenses:</b>			
Research and development	\$ 1,088	\$ 824	\$ 16,376
General and administrative expense	<u>1,625</u>	<u>588</u>	<u>7,816</u>
Total operating expenses	2,713	1,412	24,192
Loss from operations	(2,713)	(1,412)	(24,192)
Other income (expense)			
Interest income	75	—	523
Loss on disposal of assets	(8)	—	(8)
Total other income (expense) — net	<u>67</u>	<u>—</u>	<u>515</u>
Loss before income taxes	(2,646)	(1,412)	(23,677)
Net loss	<u>\$ (2,646)</u>	<u>\$ (1,412)</u>	<u>\$ (23,677)</u>
Basic and diluted loss per share	\$ (0.21)	\$ (0.17)	N/A
Weighted average shares, basic and diluted	12,684,423	8,117,016	N/A

RXi Pharmaceuticals Corporation  
Balance Sheet  
(A Development Stage Company)  
(in thousands, except per share data)

	As of March 31, 2008 (unaudited)	As of December 31, 2007
Cash	\$ 9,857	\$ 1,763
Short term investments	—	9,952
Prepaid expenses and other assets	322	22
Equipment and furnishings, net	364	344
Deposits	<u>37</u>	<u>66</u>
Total assets	<u>\$ 10,580</u>	<u>\$ 12,147</u>
Accounts payable	\$ 240	\$ 55
Accrued expenses	1,534	1,269
Total liabilities	<u>1,774</u>	<u>1,324</u>
Total stockholders' equity	<u>8,806</u>	<u>10,823</u>
Total liabilities and stockholders' equity	<u>\$ 10,580</u>	<u>\$ 12,147</u>

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