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

SCHEDULE 13G

Under the Securities Exchange Act of 1934
(Amendment No. __)*

RXI PHARMACEUTICALS CORPORATION

(Name of Issuer)

COMMON STOCK, \$0.0001 PAR VALUE

(Title of Class of Securities)

74979C808

(CUSIP Number)

April 9, 2018

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
 Rule 13d-1(c)
 Rule 13d-1(d)

(Page 1 of 13 Pages)

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

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| | | |
|--|--|-------------------------------------|
| 1 | NAMES OF REPORTING PERSONS | |
| | Lincoln Park Capital Fund, LLC | |
| 2 | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP | |
| | (a) <input type="checkbox"/> | |
| | (b) <input type="checkbox"/> | |
| 3 | SEC USE ONLY | |
| 4 | CITIZENSHIP OR PLACE OF ORGANIZATION | |
| | Illinois | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER 0 |
| | 6 | SHARED VOTING POWER 428,638 |
| | 7 | SOLE DISPOSITIVE POWER 0 |
| | 8 | SHARED DISPOSITIVE POWER 428,638 |
| 9 | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON | 428,638 |
| 10 | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES | <input type="checkbox"/> |
| 11 | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) | 9.99% |
| 12 | TYPE OF REPORTING PERSON | OO |

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CUSIP NO. 74979C808

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| | | |
|--|--|-------------------------------------|
| 1 | NAMES OF REPORTING PERSONS | |
| | Lincoln Park Capital, LLC | |
| 2 | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP | |
| | (a) <input type="checkbox"/> | |
| | (b) <input type="checkbox"/> | |
| 3 | SEC USE ONLY | |
| 4 | CITIZENSHIP OR PLACE OF ORGANIZATION | |
| | Illinois | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER 0 |
| | 6 | SHARED VOTING POWER 428,638 |
| | 7 | SOLE DISPOSITIVE POWER 0 |
| | 8 | SHARED DISPOSITIVE POWER 428,638 |
| 9 | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON | 428,638 |
| 10 | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES | <input type="checkbox"/> |
| 11 | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) | 9.99% |
| 12 | TYPE OF REPORTING PERSON | OO |

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| | | |
|--|--|-------------------------------------|
| 1 | NAMES OF REPORTING PERSONS | |
| | Rockledge Capital Corporation | |
| 2 | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP | |
| | (a) <input type="checkbox"/> | |
| | (b) <input type="checkbox"/> | |
| 3 | SEC USE ONLY | |
| 4 | CITIZENSHIP OR PLACE OF ORGANIZATION | |
| | Texas | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER 0 |
| | 6 | SHARED VOTING POWER 428,638 |
| | 7 | SOLE DISPOSITIVE POWER 0 |
| | 8 | SHARED DISPOSITIVE POWER 428,638 |
| 9 | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON | 428,638 |
| 10 | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES | <input type="checkbox"/> |
| 11 | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) | 9.99% |
| 12 | TYPE OF REPORTING PERSON | CO |

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| | | |
|--|---|--------------------------|
| 1 | NAMES OF REPORTING PERSONS | |
| | Joshua B. Scheinfeld | |
| 2 | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP | |
| | (a) <input type="checkbox"/> | |
| | (b) <input type="checkbox"/> | |
| 3 | SEC USE ONLY | |
| 4 | CITIZENSHIP OR PLACE OF ORGANIZATION | |
| | United States | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER |
| | | 0 |
| | 6 | SHARED VOTING POWER |
| | | 428,638 |
| | 7 | SOLE DISPOSITIVE POWER |
| | | 0 |
| | 8 | SHARED DISPOSITIVE POWER |
| | | 428,638 |
| 9 | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON | |
| | 428,638 | |
| 10 | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | |
| 11 | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) | |
| | 9.99% | |
| 12 | TYPE OF REPORTING PERSON | |
| | IN | |

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| | | |
|--|---|--------------------------|
| 1 | NAMES OF REPORTING PERSONS | |
| | Alex Noah Investors, Inc. | |
| 2 | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP | |
| | (a) <input type="checkbox"/> | |
| | (b) <input type="checkbox"/> | |
| 3 | SEC USE ONLY | |
| 4 | CITIZENSHIP OR PLACE OF ORGANIZATION | |
| | Illinois | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER |
| | | 0 |
| | 6 | SHARED VOTING POWER |
| | | 428,638 |
| | 7 | SOLE DISPOSITIVE POWER |
| | | 0 |
| | 8 | SHARED DISPOSITIVE POWER |
| | | 428,638 |
| 9 | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON | |
| | 428,638 | |
| 10 | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | |
| 11 | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) | |
| | 9.99% | |
| 12 | TYPE OF REPORTING PERSON | |
| | CO | |

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| | | |
|--|--|-------------------------------------|
| 1 | NAMES OF REPORTING PERSONS | |
| | Jonathan I. Cope | |
| 2 | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP | |
| | (a) <input type="checkbox"/> | |
| | (b) <input type="checkbox"/> | |
| 3 | SEC USE ONLY | |
| 4 | CITIZENSHIP OR PLACE OF ORGANIZATION | |
| | United States | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER 0 |
| | 6 | SHARED VOTING POWER 428,638 |
| | 7 | SOLE DISPOSITIVE POWER 0 |
| | 8 | SHARED DISPOSITIVE POWER 428,638 |
| 9 | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON | 428,638 |
| 10 | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES | <input type="checkbox"/> |
| 11 | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) | 9.99% |
| 12 | TYPE OF REPORTING PERSON | IN |

Item 1.**(a) Name of Issuer:**

RXi Pharmaceuticals Corporation (“Issuer”)

(b) Address of Issuer’s Principal Executive Offices:

257 Simarano Drive, Suite 101
Marlborough, Massachusetts 01752

Item 2.**(a) Name of Person Filing:**

Lincoln Park Capital Fund, LLC (“LPC Fund”)

Lincoln Park Capital, LLC (“LPC”)

Rockledge Capital Corporation (“RCC”)

Joshua B. Scheinfeld (“Mr. Scheinfeld”)

Alex Noah Investors, Inc. (“Alex Noah”)

Jonathan I. Cope (“Mr. Cope” and, collectively with LPC Fund, LPC, RCC, Mr. Scheinfeld and Alex Noah, the “Reporting Persons”)

(b) Address of Principal Business Office, or if None, Residence:

The address of the principal business office of each of the Reporting Persons is:

440 North Wells, Suite 410
Chicago, Illinois 60654

(c) Citizenship:

LPC Fund is an Illinois limited liability company

LPC is an Illinois limited liability company

RCC is a Texas corporation

Mr. Scheinfeld is a United States citizen

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Alex Noah is an Illinois corporation

Mr. Cope is a United States citizen

(d) Title of Class of Securities:

Common Stock, \$0.0001 par value ("Common Stock")

(e) CUSIP Number:

74979C808

Item 3.

If this statement is filed pursuant to §§240.13d-1(b), or 240.13d-2(b) or (c), check whether the person filing is a:

- (a) Broker or dealer registered under Section 15 of the Act (15 U.S.C. 78o).
- (b) Bank as defined in Section 3(a)(6) of the Act (15 U.S.C. 78c).
- (c) Insurance company as defined in Section 3(a)(19) of the Act (15 U.S.C. 78c).
- (d) Investment company registered under Section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8).
- (e) An investment adviser in accordance with §240.13d-1(b)(1)(ii)(E);
- (f) An employee benefit plan or endowment fund in accordance with §240.13d-1(b)(1)(ii)(F);
- (g) A parent holding company or control person in accordance with §240.13d-1(b)(1)(ii)(G);
- (h) A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);
- (i) A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);
- (j) A non-U.S. institution in accordance with §240.13d-1(b)(1)(ii)(J);
- (k) Group, in accordance with §240.13d-1(b)(1)(ii)(K).

If filing as a non-U.S. institution in accordance with §240.13d-1(b)(1)(ii)(J), please specify the type of institution _____

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Item 4. Ownership.

| Reporting person | Amount beneficially owned: | Percent of class ¹ : | Sole power to vote or direct the vote: | Shared power to vote or to direct the vote: | Sole power to dispose or to direct the disposition of: | Shared power to dispose or to direct the disposition of: |
|--------------------------------|----------------------------------|------------------------------------|---|---|---|---|
| Lincoln Park Capital Fund, LLC | 428,638 | 9.99% | 0 | 428,638 | 0 | 428,638 |
| Lincoln Park Capital, LLC | 428,638 | 9.99% | 0 | 428,638 | 0 | 428,638 |
| Rockledge Capital Corporation | 428,638 | 9.99% | 0 | 428,638 | 0 | 428,638 |
| Joshua B. Scheinfeld | 428,638 | 9.99% | 0 | 428,638 | 0 | 428,638 |
| Alex Noah Investors, Inc. | 428,638 | 9.99% | 0 | 428,638 | 0 | 428,638 |
| Jonathan I. Cope | 428,638 | 9.99% | 0 | 428,638 | 0 | 428,638 |

¹ Based on information contained in the Issuer's prospectus supplement dated April 9, 2018, filed with the Securities and Exchange Commission on April 11, 2018, there were a total of 4,255,566 shares of Common Stock outstanding as of April 9, 2018, after giving effect to the Issuer's public offering of Common Stock and concurrent private placement of warrants to purchase Common Stock on April 9, 2018 to certain investors, including LPC Fund.

As of April 9, 2018, LPC Fund owned, directly, the following securities of the Issuer: (i) 393,552 shares of outstanding Common Stock, after giving effect to the Issuer's public offering of Common Stock and concurrent private placement of warrants to purchase Common Stock on April 9, 2018 to certain investors, including LPC Fund; (ii) a warrant to purchase up to 283,239 shares of Common Stock, subject to a 9.99% beneficial ownership cap, acquired by LPC Fund in the Issuer's private placement of warrants to purchase Common Stock on April 9, 2018 (the "April 2018 Warrant"); (iii) a warrant to purchase up to 222,223 shares of Common Stock, subject to a 4.99% beneficial ownership cap (which, by notice to the Issuer dated April 10, 2018, LPC Fund has elected to increase from 4.99% to 9.99%, effective 61 days after such notice date), acquired by LPC Fund in December 2017 (the "December 2017 Warrant"); and (iv) a warrant to purchase up to 6,250 shares of Common Stock, subject to a 4.99% beneficial ownership cap (which, by notice to the Issuer dated April 10, 2018, LPC Fund has elected to increase from 4.99% to 9.99%, effective 61 days after such notice date), acquired by LPC Fund in June 2015 (the "June 2015 Warrant" which, collectively with the April 2018 Warrant and the December 2017 Warrant, the "Warrants").

Accordingly, as of April 9, 2018, LPC Fund directly beneficially owned an aggregate of approximately 428,638 shares of Common Stock, consisting of: (i) 393,552 shares of outstanding Common Stock, after giving effect to the Issuer's public offering of Common Stock and concurrent private placement of warrants to purchase Common Stock on April 9, 2018 to certain investors, including LPC Fund; and (ii) 35,448 shares of Common Stock, representing the approximate maximum number of shares of Common Stock that may be acquired by LPC Fund as of April 9, 2018 upon exercise of the April 2018 Warrant without exceeding the 9.99% beneficial ownership limitation on the exercise of such warrant contained therein.

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Due to the number of shares of outstanding Common Stock owned by LPC Fund as of April 9, 2018, which represented approximately 9.25% of the then outstanding shares of Common Stock, after giving effect to the Issuer's public offering of Common Stock and concurrent private placement of warrants to purchase Common Stock on April 9, 2018 to certain investors, including LPC Fund, neither the December 2017 Warrant nor the June 2015 Warrant were exercisable by LPC Fund as of April 9, 2018, due to the 4.99% beneficial ownership limitations on the exercise of such warrants that were then in effect (which will remain in effect until the election to increase such percentage beneficial ownership limitation to 9.99% made by LPC Fund on April 10, 2018 becomes effective).

LPC is the Managing Member of LPC Fund. RCC and Alex Noah are the Managing Members of LPC. Mr. Scheinfeld is the president and sole shareholder of RCC, as well as a principal of LPC. Mr. Cope is the president and sole shareholder of Alex Noah, as well as a principal of LPC. As a result of the foregoing, Mr. Scheinfeld and Mr. Cope have shared voting and shared investment power over the shares of Common Stock of the Issuer held directly by LPC Fund.

Pursuant to Section 13(d) of the Act and the rules thereunder, each of LPC, RCC, Mr. Scheinfeld, Alex Noah, and Mr. Cope may be deemed to be a beneficial owner of the shares of Common Stock of the Issuer held directly by LPC Fund.

Pursuant to Rule 13d-4 of the Act, each of LPC, RCC, Mr. Scheinfeld, Alex Noah, and Mr. Cope disclaims beneficial ownership of the shares of Common Stock of the Issuer held directly by LPC Fund.

Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following .

Item 6. Ownership of More Than Five Percent on Behalf of Another Person.

Not applicable.

Item 7. Identification and Classification of Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company or Control Person.

Not applicable.

Item 8. Identification and Classification of Members of the Group.

Not applicable.

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Item 9. Notice of Dissolution of Group.

Not applicable.

Item 10. Certifications.

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: April 12, 2018

LINCOLN PARK CAPITAL FUND, LLC

BY: LINCOLN PARK CAPITAL, LLC

BY: ROCKLEDGE CAPITAL CORPORATION

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

LINCOLN PARK CAPITAL FUND, LLC

BY: LINCOLN PARK CAPITAL, LLC

BY: ALEX NOAH INVESTORS, INC.

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

ROCKLEDGE CAPITAL CORPORATION

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

JOSHUA B. SCHEINFELD

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

LINCOLN PARK CAPITAL, LLC

BY: ROCKLEDGE CAPITAL CORPORATION

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

LINCOLN PARK CAPITAL, LLC

BY: ALEX NOAH INVESTORS, INC.

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

ALEX NOAH INVESTORS, INC.

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

JONATHAN I. COPE

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

LIST OF EXHIBITS

| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|------------------------|
| 1 | Joint Filing Agreement |

Joint Filing Agreement

The undersigned hereby agree that they are filing this statement jointly pursuant to Rule 13d-1(k)(1). Each of them is responsible for the timely filing of such Schedule 13G, and for the completeness and accuracy of the information concerning such person contained therein; but none of them is responsible for the completeness or accuracy of the information concerning the other persons making the filing, unless such person knows or has reason to believe that such information is inaccurate.

In accordance with Rule 13d-1(k)(1) promulgated under the Securities and Exchange Act of 1934, as amended, the undersigned hereby agree to the joint filing with each other on behalf of each of them of such Schedule 13G with respect to the Common Stock of the Issuer, beneficially owned by each of them. This Joint Filing Agreement shall be included as an exhibit to such Schedule 13G.

[Signature Page Follows]

IN WITNESS WHEREOF, the undersigned hereby execute this Agreement as of April 12, 2018.

LINCOLN PARK CAPITAL FUND, LLC

BY: LINCOLN PARK CAPITAL, LLC

BY: ROCKLEDGE CAPITAL CORPORATION

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

LINCOLN PARK CAPITAL FUND, LLC

BY: LINCOLN PARK CAPITAL, LLC

BY: ALEX NOAH INVESTORS, INC.

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

ROCKLEDGE CAPITAL CORPORATION

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

JOSHUA B. SCHEINFELD

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

LINCOLN PARK CAPITAL, LLC

BY: ROCKLEDGE CAPITAL CORPORATION

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

LINCOLN PARK CAPITAL, LLC

BY: ALEX NOAH INVESTORS, INC.

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

ALEX NOAH INVESTORS, INC.

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

JONATHAN I. COPE

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President
