

OMB APPROVAL
OMB Number: 3235-0145
Expires: February 28, 2009
Estimated average burden hours per response... 10.4

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

SCHEDULE 13D

Under the Securities Exchange Act of 1934

(Amendment No. 2)\*

Ra Pharmaceuticals, Inc.

(Name of Issuer)

Common Stock, par value \$0.001 per share

(Title of Class of Securities)

74933V108

(CUSIP Number)

RA Capital Management, LLC  
20 Park Plaza, Suite 1200  
Boston, MA 02116  
Telephone: 617.778.2512  
Attn: Peter Kolchinsky

(Name, Address and Telephone Number of Person Authorized to  
Receive Notices and Communications)

December 12, 2018

(Date of Event Which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box. [ ]

**Note:** Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7 for other parties to whom copies are to be sent.

\* 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 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).

1	Names of Reporting Persons. <b>RA Capital Healthcare Fund, L.P.</b>
2	Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input type="checkbox"/>
3	SEC Use Only
4	Source of Funds (See Instructions): WC
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e): <input type="checkbox"/>
6	Citizenship or Place of Organization. <b>Delaware</b>
	Number of Shares Beneficially Owned by Each Reporting Person With
	7 Sole Voting Power <b>0 shares</b>
	8 Shared Voting Power <b>3,971,750 shares</b>
	9 Sole Dispositive Power <b>0 shares</b>
	10 Shared Dispositive Power <b>3,971,750 shares</b>
11	Aggregate Amount Beneficially Owned by Each Reporting Person <b>3,971,750 shares</b>
12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) <input type="checkbox"/>
13	Percent of Class Represented by Amount in Row (11) <b>9.7%<sup>1</sup></b>
14	Type of Reporting Person (See Instructions) <b>PN (Limited Partnership)</b>

<sup>1</sup> The reporting person is the beneficial owner of 3,971,750 shares of the Issuer's Common Stock which constitute approximately 9.7% of the class outstanding. The percentage calculation assumes that there are currently 40,774,123 outstanding shares of Common Stock of the Issuer as reported in the Issuer's prospectus filed with the Securities and Exchange Commission ("SEC") on December 12, 2018.

1	Names of Reporting Persons.  <b>RA Capital Management, LLC</b>
2	Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input type="checkbox"/>
3	SEC Use Only
4	Source of Funds (See Instructions): AF
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e): <input type="checkbox"/>
6	Citizenship or Place of Organization. <b>Massachusetts</b>
	7 Sole Voting Power <b>0 shares</b>
Number of Shares Beneficially Owned by Each Reporting Person With	8 Shared Voting Power <b>4,858,260 shares</b>
	9 Sole Dispositive Power <b>0 shares</b>
	10 Shared Dispositive Power <b>4,858,260 shares</b>
11	Aggregate Amount Beneficially Owned by Each Reporting Person <b>4,858,260 shares</b>
12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) <input type="checkbox"/>
13	Percent of Class Represented by Amount in Row (11) <b>11.9%<sup>2</sup></b>
14	Type of Reporting Person (See Instructions) <b>IA, OO (Limited Liability Company)</b>

<sup>2</sup> The reporting person is the beneficial owner of 4,858,260 shares of the Issuer's Common Stock which constitute approximately 11.9% of the class outstanding. The percentage calculation assumes that there are currently 40,774,123 outstanding shares of Common Stock of the Issuer as reported in the Issuer's prospectus filed with the Securities and Exchange Commission ("SEC") on December 12, 2018.

1	Names of Reporting Persons. <b>Peter Kolchinsky</b>
2	Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input type="checkbox"/>
3	SEC Use Only
4	Source of Funds (See Instructions): AF
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e): <input type="checkbox"/>
6	Citizenship or Place of Organization. <b>United States</b>
	Number of Shares Beneficially Owned by Each Reporting Person With
7	Sole Voting Power <b>0 shares</b>
8	Shared Voting Power <b>4,858,260 shares</b>
9	Sole Dispositive Power <b>0 shares</b>
10	Shared Dispositive Power <b>4,858,260 shares</b>
11	Aggregate Amount Beneficially Owned by Each Reporting Person <b>4,858,260 shares</b>
12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) <input type="checkbox"/>
13	Percent of Class Represented by Amount in Row (11) <b>11.9%<sup>3</sup></b>
14	Type of Reporting Person (See Instructions) <b>HC, IN</b>

<sup>3</sup> The reporting person is the beneficial owner of 4,858,260 shares of the Issuer's Common Stock which constitute approximately 11.9% of the class outstanding. The percentage calculation assumes that there are currently 40,774,123 outstanding shares of Common Stock of the Issuer as reported in the Issuer's prospectus filed with the Securities and Exchange Commission ("SEC") on December 12, 2018.

CUSIP No. 74933V108

This Amendment No. 2 amends and supplements the statement on Schedule 13D (the "Statement") originally filed with the Securities and Exchange Commission on November 9, 2016 by the Reporting Persons with respect to the Common Stock, \$0.001 par value (the "Common Stock"), of Ra Pharmaceuticals, Inc. (the "Issuer"). Unless otherwise defined herein, capitalized terms used in this Amendment No. 1 shall have the meanings ascribed to them in the initial Statement.

**Item 3. Source and Amount of Funds or Other Consideration**

Item 3 of the Statement is hereby amended and supplemented as follows:

On December 12, 2018, the Reporting Persons purchased 1,006,452 shares of Common Stock of the Issuer for \$15,600,006.00. The shares were purchased with working capital.

**Item 4. Purpose of Transaction**

Item 4 is hereby supplemented as follows:

The Reporting Persons acquired the Common Stock referred to in Item 3 for investment purposes and not with an intent, purpose or effect of changing control of the Issuer.

**Item 5. Interest in Securities of the Issuer**

(a) and (b) See Items 7-11 of the cover pages and Item 2 above.

(c) The following table lists the Reporting Persons' transactions in Common Stock that were effected during the sixty day period prior to the filing of this Schedule 13D:

Transaction	Date	No. Shares	Price
Purchase	12-Dec-2018	836,666* and 169,786	\$15.50

Shares marked with an \* were acquired by the Fund. The remaining shares were acquired for the Account.

(d) Not applicable.

(e) Not applicable.

**Item 7. Material to Be Filed as Exhibits**

Exhibit 1 Joint Filing Agreement by and among the Reporting Persons is incorporated herein by reference to Exhibit 1 to the Schedule 13D filed by the Reporting Persons with the Securities and Exchange Commission on November 9, 2016.

---

CUSIP No. 74933V108

**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.

Date: December 14, 2018

RA CAPITAL HEALTHCARE FUND, L.P.

By: RA Capital Management, LLC  
General Partner

By: /s/ Peter Kolchinsky  
Peter Kolchinsky  
Manager

RA CAPITAL MANAGEMENT, LLC

By: /s/ Peter Kolchinsky  
Peter Kolchinsky  
Manager

PETER KOLCHINSKY

/s/ Peter Kolchinsky

---