

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

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SCHEDULE 13D

Under the Securities Exchange Act of 1934

(Amendment No. 1)*

Forma Therapeutics Holdings, Inc.
(Name of Issuer)

Common Stock, par value \$0.001 per share
(Title of Class of Securities)

34633R104
(CUSIP Number)

RA Capital Management, L.P.
200 Berkeley Street, 18th Floor
Boston, MA 02116
Telephone: 617.778.2500
Attn: Peter Kolchinsky

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

October 25, 2021
(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.

RA Capital Management, L.P.

2 Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

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):
0

6 Citizenship or Place of Organization.
Delaware

7 Sole Voting Power
0 shares

Number
of Shares
Beneficially
Owned by
Each
Reporting
Person With

8 Shared Voting Power
9,029,184 shares

9 Sole Dispositive Power
0 shares

10 Shared Dispositive Power
9,029,184 shares

11 Aggregate Amount Beneficially Owned by Each Reporting Person
9,029,184 shares

12 Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

13 Percent of Class Represented by Amount in Row (11)
19.05%¹

14 Type of Reporting Person (See Instructions)
IA, PN

¹ The reporting person is the beneficial owner of 9,029,184 shares of the Issuer's Common Stock which constitute approximately 19.02% of the class outstanding. The percentage calculation assumes that there are currently 47,406,586 outstanding shares of Common Stock of the Issuer, based upon the Issuer's Form 10-Q filed with the Securities and Exchange Commission ("SEC") on August 13, 2021 and giving effect to 17,533 vested stock options (right to buy) held by Dr. Peter Kolchinsky for the benefit of RA Capital.

1 Names of Reporting Persons.

Peter Kolchinsky

2 Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

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):
0

6 Citizenship or Place of Organization.
United States

7 Sole Voting Power
0 shares

Number
of Shares
Beneficially
Owned by
Each
Reporting
Person With

8 Shared Voting Power
9,029,184 shares

9 Sole Dispositive Power
0 shares

10 Shared Dispositive Power
9,029,184 shares

11 Aggregate Amount Beneficially Owned by Each Reporting Person
9,029,184 shares

12 Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

13 Percent of Class Represented by Amount in Row (11)
19.02%²

14 Type of Reporting Person (See Instructions)
HC, IN

² The reporting person is the beneficial owner of 9,029,184 shares of the Issuer's Common Stock which constitute approximately 19.02% of the class outstanding. The percentage calculation assumes that there are currently 47,406,586 outstanding shares of Common Stock of the Issuer, based upon the Issuer's Form 10-Q filed with the Securities and Exchange Commission ("SEC") on August 13, 2021 and giving effect to 17,533 vested stock options (right to buy) held by Dr. Peter Kolchinsky for the benefit of RA Capital.

1 Names of Reporting Persons.

Rajeev Shah

2 Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

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):
0

6 Citizenship or Place of Organization.
United States

7 Sole Voting Power
0 shares

Number
of Shares
Beneficially
Owned by
Each
Reporting
Person With

8 Shared Voting Power
9,029,184 shares

9 Sole Dispositive Power
0 shares

10 Shared Dispositive Power
9,029,184 shares

11 Aggregate Amount Beneficially Owned by Each Reporting Person
9,029,184 shares

12 Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

13 Percent of Class Represented by Amount in Row (11)
19.02%³

14 Type of Reporting Person (See Instructions)
HC, IN

³The reporting person is the beneficial owner of 9,029,184 shares of the Issuer's Common Stock which constitute approximately 19.02% of the class outstanding. The percentage calculation assumes that there are currently 47,406,586 outstanding shares of Common Stock of the Issuer, based upon the Issuer's Form 10-Q filed with the Securities and Exchange Commission ("SEC") on August 13, 2021 and giving effect to 17,533 vested stock options (right to buy) held by Dr. Peter Kolchinsky for the benefit of RA Capital.

1 Names of Reporting Persons.

RA Capital Healthcare Fund, L.P.

2 Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

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):
o

6 Citizenship or Place of Organization.
United States

7 Sole Voting Power
0 shares

Number
of Shares
Beneficially
Owned by
Each
Reporting
Person With

8 Shared Voting Power
7,500,226 shares

9 Sole Dispositive Power
0 shares

10 Shared Dispositive Power
7,500,226 shares

11 Aggregate Amount Beneficially Owned by Each Reporting Person
7,500,226 shares

12 Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

13 Percent of Class Represented by Amount in Row (11)
15.83%⁴

14 Type of Reporting Person (See Instructions)
PN

⁴The reporting person is the beneficial owner of 7,500,226 shares of the Issuer's Common Stock which constitute approximately 15.83% of the class outstanding. The percentage calculation assumes that there are currently 47,406,586 outstanding shares of Common Stock of the Issuer, based upon the Issuer's Form 10-Q filed with the Securities and Exchange Commission ("SEC") on August 13, 2021 and giving effect to 17,533 vested stock options (right to buy) held by Dr. Peter Kolchinsky for the benefit of RA Capital.

SCHEDULE 13D**Item 1. Security and Issuer**

Item 1 of the Statement is amended and supplemented as follows:

This Amendment No. 1 amends and supplements the statement on Schedule 13D originally filed with the Securities and Exchange Commission (the “SEC”) on June 25, (the “Statement”) by RA Capital Management, L.P., Dr. Kolchinsky, and Mr. Shah with respect to the common stock, par value \$0.001 per share (the “Common Stock”), of Forma Therapeutics Holdings, Inc., a Delaware corporation (the “Issuer”) and serves as the initial Schedule 13D for RA Capital Healthcare Fund, L.P. (the “Fund”). Unless otherwise defined herein, capitalized terms used in this Amendment No. 1 shall have the meanings ascribed to them in the Statement. Unless amended or supplemented below, the information in the Statement remains unchanged.

Item 2. Identity and Background

Item 2 of the Statement is amended and supplemented as follows:

(a) This Amendment No. 1 to Schedule 13D is being filed on behalf of RA Capital Management, L.P. (“ RA Capital”), the Fund, Peter Kolchinsky, and Rajeev Shah. RA Capital, Dr. Kolchinsky, Mr. Shah, and the Fund are collectively referred to herein as the “Reporting Persons.”

The Common Stock reported herein includes 7,500,226 shares held by RA Capital Healthcare Fund, L.P. (the “Fund”) and 1,511,425 shares held by RA Capital Nexus Fund, L.P. (the “Nexus Fund”). RA Capital Healthcare Fund GP, LLC is the general partner of the Fund and RA Capital Nexus Fund GP, LLC is the general partner of the Nexus Fund. The general partner of RA Capital is RA Capital Management GP, LLC, of which Dr. Kolchinsky and Mr. Shah are the controlling persons. RA Capital serves as investment adviser for the Fund and the Nexus Fund and may be deemed a beneficial owner, for purposes of Section 13(d) of the Securities Exchange Act of 1934 (the “Act”), of any securities of the Issuer held by the Fund or the Nexus Fund. The Fund and the Nexus Fund have delegated to RA Capital the sole power to vote and the sole power to dispose of all securities held in the Fund’s and the Nexus Fund’s portfolio, including the shares of the Issuer’s Common Stock reported herein. Because the Fund and the Nexus Fund have divested themselves of voting and investment power over the reported securities they hold and may not revoke that delegation on less than 61 days’ notice, the Fund and the Nexus Fund disclaim beneficial ownership of the securities they hold for purposes of Section 13(d) of the Act and therefore disclaim any obligation to report ownership of the reported securities under Section 13(d) of the Act. As managers of RA Capital, Dr. Kolchinsky and Mr. Shah may be deemed beneficial owners, for purposes of Section 13(d) of the Act, of any securities of the Issuer beneficially owned by RA Capital. RA Capital, Dr. Kolchinsky, and Mr. Shah disclaim beneficial ownership of the securities reported in this Schedule 13D Statement (the “Statement”) other than for the purpose of determining their obligations under Section 13(d) of the Act, and the filing of the Statement shall not be deemed an admission that either RA Capital, Dr. Kolchinsky, or Mr. Shah is the beneficial owner of such securities for any other purpose.

(b) The business address of each of the Reporting Persons is: 200 Berkeley Street, 18th Floor, Boston, MA 02116.

(c) The Fund and the Nexus Fund are private investment vehicles. RA Capital provides investment management services to the Fund and the Nexus Fund. The principal occupation of Dr. Kolchinsky and Mr. Shah is investment management.

(d) None of the Reporting Persons have, during the last five years, been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) None of the Reporting Persons have, during the last five years, been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(f) See Item 6 of the cover pages.

Item 5. Interest in Securities of the Issuer

Item 5 of the Statement is amended and restated as follows:

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

(c) The Reporting Persons have not effected any transactions in Common Stock during the sixty day period prior to the filing of this Schedule 13D.

(d) Not applicable.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer

Item 6 of the Statement is amended and supplemented as follows:

Equity awards

Dr. Peter Kolchinsky ("Dr. Kolchinsky"), a Managing Partner at RA Capital, is a member of the Board of Directors of the Issuer. From time to time, Dr. Kolchinsky may receive stock options or other awards of equity-based compensation pursuant to the Issuer's compensation arrangements for non-employee directors. Pursuant to an agreement with RA Capital, Dr. Kolchinsky is obligated to transfer any securities issued under any such stock options or other awards, or the economic benefit thereof, to RA Capital.

Item 7. Material to Be Filed as Exhibits

Item 7 of the Statement is hereby amended and supplemented as follows:

Exhibit 1 Joint Filing Agreement by and among the Reporting Persons, dated as of October 28, 2021 (filed herewith).

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: October 28, 2021

RA CAPITAL MANAGEMENT, L.P.

By: /s/ Peter Kolchinsky
Name: Peter Kolchinsky
Title: Authorized Signatory

PETER KOLCHINSKY

/s/ Peter Kolchinsky

RAJEEV SHAH

/s/ Rajeev Shah

RA CAPITAL HEALTHCARE FUND, L.P.

By: RA Capital Healthcare Fund GP, LLC
Its: General Partner

By: /s/ Peter Kolchinsky
Name: Peter Kolchinsky
Title: Manager

AGREEMENT

This Joint Filing Agreement, dated as of October 28, 2021, is by and among RA Capital Management, L.P., Peter Kolchinsky, Rajeev Shah, and RA Capital Healthcare Fund, L.P. (the foregoing are collectively referred to herein as the "Filers").

Each of the Filers may be required to file with the United States Securities and Exchange Commission a statement on Schedule 13G and/or 13D with respect to Common Stock, par value \$0.001 per share of Forma Therapeutics Holdings, Inc. beneficially owned by them from time to time.

Pursuant to and in accordance with Rule 13(d)(1)(k) promulgated under the Securities Exchange Act of 1934, as amended, the Filers hereby agree to file a single statement on Schedule 13G and/or 13D (and any amendments thereto) on behalf of each of such parties, and hereby further agree to file this Joint Filing Agreement as an exhibit to such statement, as required by such rule.

This Joint Filing Agreement may be terminated by any of the Filers upon one week's prior written notice or such lesser period of notice as the Filers may mutually agree.

Executed and delivered as of the date first above written.

RA CAPITAL MANAGEMENT, L.P.

By: /s/ Peter Kolchinsky
Name: Peter Kolchinsky
Title: Authorized Signatory

PETER KOLCHINSKY

/s/ Peter Kolchinsky

RAJEEV SHAH

/s/ Rajeev Shah

RA CAPITAL HEALTHCARE FUND, L.P.

By: RA Capital Healthcare Fund GP, LLC
Its: General Partner

By: /s/ Peter Kolchinsky
Name: Peter Kolchinsky
Title: Manager
