

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

SCHEDULE 13D/A

Under the Securities Exchange Act of 1934

(Amendment No. 2)*

FORMA THERAPEUTICS HOLDING, 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)

August 31, 2022
(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):

6 Citizenship or Place of Organization. **Delaware**

Number of Shares Beneficially Owned by Each Reporting Person With

7 Sole Voting Power **0 shares**

8 Shared Voting Power **9,040,309 shares**

9 Sole Dispositive Power **0 shares**

10 Shared Dispositive Power **9,040,309 shares**

11 Aggregate Amount Beneficially Owned by Each Reporting Person

9,040,309 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)

18.88%¹

14 Type of Reporting Person (See Instructions)

IA, PN

¹ The reporting person is the beneficial owner of 9,011,651 shares of the Issuer's Common Stock as well as conversion shares underlying each of 25,908 vested stock options (right to buy) and 2,750 vested RSUs (right to buy) held by Dr. Peter Kolchinsky for the benefit of RA Capital. The percentage calculation assumes that there are currently 47,852,557 outstanding shares of Common Stock of the Issuer based on the Issuer's Form 10-Q filed with the Securities and Exchange Commission ("SEC") on August 5, 2022 and giving effect to stock options and RSUs referenced above.

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):

6 Citizenship or Place of Organization. **United States**

Number of Shares Beneficially Owned by Each Reporting Person With

7 Sole Voting Power **0 shares**

8 Shared Voting Power **9,040,309 shares**

9 Sole Dispositive Power **0 shares**

10 Shared Dispositive Power **9,040,309 shares**

11 Aggregate Amount Beneficially Owned by Each Reporting Person

9,040,309 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)

18.88%²

14 Type of Reporting Person (See Instructions)

HC, IN

² The reporting person is the beneficial owner of 9,011,651 shares of the Issuer's Common Stock as well as conversion shares underlying each of 25,908 vested stock options (right to buy) and 2,750 vested RSUs (right to buy) held by Dr. Peter Kolchinsky for the benefit of RA Capital. The percentage calculation assumes that there are currently 47,852,557 outstanding shares of Common Stock of the Issuer based on the Issuer's Form 10-Q filed with the Securities and Exchange Commission ("SEC") on August 5, 2022 and giving effect to stock options and RSUs referenced above.

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):

6 Citizenship or Place of Organization. **United States**

Number of Shares Beneficially Owned by Each Reporting Person With

7 Sole Voting Power **0 shares**

8 Shared Voting Power **9,040,309 shares**

9 Sole Dispositive Power **0 shares**

10 Shared Dispositive Power **9,040,309 shares**

11 Aggregate Amount Beneficially Owned by Each Reporting Person

9,040,309 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)

18.88%³

14 Type of Reporting Person (See Instructions)

HC, IN

³ The reporting person is the beneficial owner of 9,011,651 shares of the Issuer's Common Stock as well as conversion shares underlying each of 25,908 vested stock options (right to buy) and 2,750 vested RSUs (right to buy) held by Dr. Peter Kolchinsky for the benefit of RA Capital. The percentage calculation assumes that there are currently 47,852,557 outstanding shares of Common Stock of the Issuer based on the Issuer's Form 10-Q filed with the Securities and Exchange Commission ("SEC") on August 5, 2022 and giving effect to stock options and RSUs referenced above.

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):

6 Citizenship or Place of Organization. **United States**

Number of Shares Beneficially Owned by Each Reporting Person With

7 Sole Voting Power **0 shares**

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)

15.67%⁴

14 Type of Reporting Person (See Instructions)

PN

⁴ The reporting person is the beneficial owner of 7,500,226 shares of the Issuer's Common Stock. The percentage calculation assumes that there are currently 47,852,557 outstanding shares of Common Stock of the Issuer based on the Issuer's Form 10-Q filed with the Securities and Exchange Commission ("SEC") on August 5, 2022 .

SCHEDULE 13D**Item 1. Security and Issuer****Item 1 of the Statement is amended and supplemented as follows:**

This Amendment No. 2 amends and supplements the statement on Schedule 13D/A originally filed with the Securities and Exchange Commission (the “SEC”) on October 28, 2021, (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”). Unless otherwise defined herein, capitalized terms used in this Amendment No. 2 shall have the meanings ascribed to them in the Statement. Unless amended or supplemented below, the information in the Statement remains unchanged.

Item 4. Purpose of Transaction

Item 4 of the Statement is hereby amended and supplemented as follows:

Merger Agreement and Related Transactions

On August 31, 2022, the Issuer, Novo Nordisk A/S, a Danish *aktieselskab* (“Parent” or “Novo Nordisk”), and NNUS New Dev, Inc., a Delaware corporation and a wholly owned indirect subsidiary of Parent (“Purchaser”), entered into an Agreement and Plan of Merger (the “Merger Agreement”). Pursuant to the Merger Agreement, and upon the terms and subject to the conditions therein, Purchaser will commence a cash tender offer (the “Offer”) to acquire all of the issued and outstanding shares of the Common Stock (other than Excluded Shares (as defined in the Merger Agreement)), at a price per share of \$20.00, net to the seller in cash without interest and subject to any withholding of taxes required by applicable law. The Offer will initially expire at one minute after 11:59 p.m. Eastern Time on the date that is 20 business days following the commencement of the Offer, subject to extension under certain circumstances. The foregoing description of the Merger Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Merger Agreement, which is attached as Exhibit 2.1 to the Current Report on Form 8-K filed by the Issuer with the SEC on September 1, 2022.

Tender and Support Agreement

In connection with the execution of the Merger Agreement, stockholders affiliated with RA Capital Management, L.P., solely in their respective capacities as stockholders of the Issuer, entered into a Tender and Support Agreement (the “Tender and Support Agreement”) with Parent and Purchaser. The Tender and Support Agreement provides, among other things, that each applicable stockholder will tender all of the shares of Common Stock held by such stockholder to Purchaser in the Offer and (if applicable) vote all of its shares of Common Stock in favor of the Merger.

The Tender and Support Agreement will terminate as to each stockholder upon the first to occur of: (i) the valid termination of the Merger Agreement in accordance with its terms, (ii) the Effective Time (as such term is defined in the Merger Agreement), (iii) if any material modification or amendment to the Merger Agreement or the Offer is effected without a stockholder’s written consent that decreases the amount, or changes the form, of consideration payable to such stockholder pursuant to the terms of the Merger Agreement as in effect on the date hereof or (iv) the mutual written consent of Parent and such stockholder.

The foregoing description of the Tender and Support Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Tender and Support Agreement, which is incorporated hereto as Exhibit 2 to this Schedule 13D/A and is incorporated herein by reference.

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:

Reference is made to the Support Agreement as described in Item 4 of this Schedule 13D/A.

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

Exhibit 2 Tender and Support Agreement (incorporated by reference to Exhibit 99.1 to the Issuer's Current Report on Form 8-K (File No. 001-39333))

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: September 2, 2022

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

EXHIBIT 1

AGREEMENT

This Joint Filing Agreement, dated as of September 2, 2022, 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
