
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment ___)*

Eliem Therapeutics, Inc.
(Name of Issuer)

Common Stock, par value \$0.0001 per share
(Title of Class of Securities)

28658R 106

(CUSIP Number)

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

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

August 9, 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 Section 240.13d-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, as amended ("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

7. Sole Voting Power

0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

8. Shared Voting Power

13,151,959

9. Sole Dispositive Power

0

10. Shared Dispositive Power

13,151,959

11. Aggregate Amount Beneficially Owned by Each Reporting Person

13,151,959

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

13. Percent of Class Represented by Amount in Row (11)

50.0%

14. Type of Reporting Person (See Instructions)

IA, PN

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

7. Sole Voting Power

0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

8. Shared Voting Power

13,151,959

9. Sole Dispositive Power

0

10. Shared Dispositive Power

13,151,959

11. Aggregate Amount Beneficially Owned by Each Reporting Person

13,151,959

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

13. Percent of Class Represented by Amount in Row (11)

50.0%

14. Type of Reporting Person (See Instructions)

HC, IN

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

7. Sole Voting Power

0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

8. Shared Voting Power

13,151,959

9. Sole Dispositive Power

0

10. Shared Dispositive Power

13,151,959

11. Aggregate Amount Beneficially Owned by Each Reporting Person

13,151,959

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

13. Percent of Class Represented by Amount in Row (11)

50.0%

14. Type of Reporting Person (See Instructions)

HC, IN

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

Delaware

7. Sole Voting Power

0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

8. Shared Voting Power

10,599,586

9. Sole Dispositive Power

0

10. Shared Dispositive Power

10,599,586

11. Aggregate Amount Beneficially Owned by Each Reporting Person

10,599,586

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

13. Percent of Class Represented by Amount in Row (11)

40.3%

14. Type of Reporting Person (See Instructions)

PN

Item 1.	Security and Issuer
<p>This Schedule 13D relates to the shares of common stock, \$0.0001 par value per share (“<u>Common Stock</u>”), of Eliem Therapeutics, Inc., a Delaware corporation (the “<u>Issuer</u>”), which has its principal executive offices at 23515 NE Novelty Hill Road, Suite B221 #125, Redmond, Washington 98053.</p>	
Item 2.	Identity and Background
<p>(a) This Schedule 13D is being filed on behalf of RA Capital Management, L.P. (“RA Capital”), Peter Kolchinsky, Rajeev Shah, and RA Capital Healthcare Fund, L.P. (the “Fund”). RA Capital, Dr. Kolchinsky, Mr. Shah and the Fund are collectively referred to herein as the “Reporting Persons”. The agreement among the Reporting Persons to file this Schedule 13D jointly in accordance with Rule 13d-1(k) of the Securities Exchange Act of 1934, as amended, is attached hereto as Exhibit 1.</p> <p>The Common Stock reported herein includes 10,599,586 shares held by the Fund, 1,226,497 shares held by RA Capital Nexus Fund, L.P. (The “Nexus Fund”), 483,679 shares held by RA Capital Nexus Fund II, L.P. (the “Nexus Fund II”), and 841,087 shares held by a separately managed account (the “Account”). RA Capital Healthcare Fund GP, LLC is the general partner of the Fund, RA Capital Nexus Fund GP, LLC is the general partner of the Nexus Fund, and RA Capital Nexus Fund II GP, LLC is the general partner of the Nexus Fund II. 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, the Nexus Fund, the Nexus Fund II, and the Account 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, the Nexus Fund, the Nexus Fund II or the Account. The Fund, the Nexus Fund, and the Nexus Fund II have delegated to RA Capital the sole power to vote and the sole power to dispose of all securities held in the Fund, the Nexus Fund, and the Nexus Fund II, and each of these funds has 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, the Nexus Fund, and the Nexus Fund II 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.</p> <p>(b) The address of the principal business office of each of the Reporting Persons is 200 Berkeley Street, 18th Floor, Boston, MA 02116.</p> <p>(c) The Fund is a private investment vehicle. RA Capital provides investment management services to the Fund, the Nexus Fund, the Nexus Fund II, and the Account. The principal occupation of Dr. Kolchinsky and Mr. Shah is investment management.</p> <p>(d) During the last five years, none of the Reporting Persons has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).</p> <p>(e) During the last five years, none of the Reporting Persons has 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 of 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.</p> <p>(f) See Item 6 of the cover pages.</p>	

Item 3.	Source and Amount of Funds or Other Consideration
	<p>Prior to the Issuer’s initial public offering (the “IPO”), in March 2021 the Reporting Persons caused the Fund and the Account to purchase an aggregate of 5,666,667 Series A Preferred Shares of the issuer in a private placement for an aggregate of \$13,768,235.47. In October 2019, the Reporting Persons caused the Fund, the Nexus Fund and the Account to purchase an aggregate of 427,350 Series A-1 Preferred Shares of the issuer in a private placement for an aggregate of \$1,666,665.00. In November 2020, the Reporting Persons caused the Fund, the Nexus Fund and the Account to purchase an aggregate of 7,500,001 Series Seed Preferred Shares of the issuer in a private placement for an aggregate of \$16,760,153.20. In March 2021, the Reporting Persons caused the Fund, the Nexus Fund, and the Account to purchase an aggregate of 3,717,948 Series A-1 Preferred Shares of the issuer in a private placement for an aggregate of \$14,499,997.20. In May 2021, the Reporting Persons caused the Fund and the Nexus Fund II to purchase an aggregate of 1,923,076 Series B Preferred Shares of the issuer in a private placement for an aggregate of \$14,999,992.80. In July 2021, the Company’s Board of Directors approved an amendment to the Company’s certificate of incorporation to effect a reverse split of shares of the Company’s common stock on a one-for-2 basis, which was effected on July 29, 2021 (the “Reverse Stock Split”). The Preferred Shares discussed above automatically converted into 13,150,849 shares of Common Stock upon completion of the IPO. All purchases were for cash and were funded by working capital of the Fund, the Nexus Fund, the Nexus Fund II, and the Account.</p>
Item 4.	Purpose of Transaction
	<p>The Reporting Persons acquired the Common Stock reported herein for investment purposes and not with an intent, purpose or effect of changing control of the Issuer. Although the Reporting Persons currently have no plan or proposal to acquire any additional Common Stock or to dispose of any of the Common Stock reported herein, the Reporting Persons may acquire additional Common Stock from time to time or dispose of Common Stock they beneficially own, consistent with their investment purposes and in amounts to be determined by the Reporting Persons based upon a number of factors, including, without limitation, their ongoing assessment of the Issuer’s business prospects, prevailing market conditions, the availability of other investment opportunities, and/or other considerations.</p> <p>In addition, consistent with their investment purpose, the Reporting Persons may engage in communications with persons associated with the Issuer, including shareholders of the Issuer, officers of the Issuer and/or members of the board of directors of the Issuer, to discuss matters regarding the Issuer, including but not limited to its operations and strategic direction. Andrew Levin, a Managing Director of RA Capital, currently serves as a director of the Issuer and therefore will engage in regular discussions with the Issuer’s board of directors and management as part of his duties as a director.</p> <p>The Reporting Persons have no plans or proposals that relate to, or could result in, any of the matters referred to in paragraphs (a) through (j), inclusive, of the instructions to Item 4 of Schedule 13D.</p> <p>The Reporting Persons may, however, change their purpose and formulate and implement plans or proposals with respect to the Issuer at any time and from time to time. Any such action may be made by the Reporting Persons alone or in conjunction with other shareholders, potential acquirers, financing sources and/or other third parties and could include one or more purposes, plans or proposals that relate to or would result in actions required to be reported herein in accordance with Item 4 of Schedule 13D.</p>
Item 5.	Interest in Securities of the Issuer
	<p>(a) The information set forth in rows 11 and 13 of the cover pages to this Schedule 13D is incorporated by reference. The percentage set forth in row 13 is based on 25,358,226 outstanding shares of Common Stock, as reported by the Issuer in its prospectus filed with the Securities and Exchange Commission on August 11, 2021 and giving effect to an additional 960,000 shares issued and sold pursuant to the underwriters’ option and giving further effect to a total of 1,110 stock options (right to buy) which will vest within 60 days of this filing and held by Andrew Levin for the benefit of RA Capital.</p> <p>(b) The information set forth in rows 7 through 10 of the cover pages to this Schedule 13D and Item 2 above is incorporated by reference.</p>

- (c) Schedule A sets forth all transactions with respect to the shares of Common Stock effected during the past sixty days by any Reporting Person and is incorporated herein by reference.
- (d) No person (other than the Reporting Persons) is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the shares of Common Stock subject to this Schedule 13D.
- (e) Not applicable.

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

Lock-up Agreement

The shares reported on this 13D are subject to a lock-up agreement (the “[Lock-Up Agreement](#)”), as referenced in the Issuer’s prospectus filed with the SEC on August 11, 2021. Pursuant to the Lock-Up Agreement, the Fund, the Nexus Fund, the Nexus Fund II, and the Account may not, with limited exceptions, for a period of 180 days from the date of the Issuer’s prospectus, offer, sell, or otherwise transfer or dispose of any of the Issuer’s securities, without the consent of SVB Leerink LLC and Evercore Group L.L.C.

The description of the Lock-Up Agreement contained in this Item 6 is qualified in its entirety by reference to the full text of the agreement (incorporated by reference to Exhibit A of Exhibit 1.1 to the Issuer’s Amendment No. 4 to Registration Statement on Form S-1 (File No. 333-257980)).

Investors’ Rights Agreement

In May 2021, the Issuer, the Fund, the Nexus Fund, the Nexus Fund II, the Account and certain other parties entered into an amended and restated investors’ rights agreement (the “[Investors’ Rights Agreement](#)”). The Investors’ Rights Agreement provides the Fund and other parties thereto with certain demand registration rights, including shelf registration rights, in respect of the shares of Common Stock issued to it upon conversion of the Preferred Shares, subject to certain conditions. In addition, in the event that the Issuer registers additional shares of Common Stock for sale to the public, it will be required to give notice of such registration to the Fund and certain other parties of its intention to effect such a registration, and, upon request of one or more such parties and subject to certain limitations, include the shares of Common Stock held by them in such registration. The registration rights will expire five years following the closing of the Issuer’s initial public offering. The Investor Rights Agreement contains customary cross-indemnification provisions, pursuant to which the Issuer is obligated to indemnify the Fund, the Nexus Fund, the Nexus Fund II, the Account and other parties in the event of material misstatements or omissions in the registration statement attributable to the Issuer or any violation or alleged violation whether by action or inaction by the Issuer under certain securities laws and the Fund, the Nexus Fund, the Nexus Fund II, and the Account are obligated to indemnify the Issuer for material misstatements or omissions in the registration statement attributable to such party, subject to certain limitations.

The description of the Investors’ Rights Agreement contained in this Item 6 is qualified in its entirety by reference to the full text of the agreement (incorporated by reference to Exhibit 10.1 to the Issuer’s Amendment No. 4 to Registration Statement on Form S-1 (File No. 333-257980)).

Equity Awards

Andrew Levin (“Levin”), a Managing Director at RA Capital, is a member of the Board of Directors of the Issuer. From time to time, Levin 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, Levin 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
----------------	---

[Exhibit 1 Joint Filing Agreement](#)

Exhibit 2 Form of Lock-up Agreement (incorporated by reference to Exhibit A of Exhibit 1.1 to the Issuer’s Amendment No.4 to Registration Statement on Form S-1 (File No. 333-257980))

Exhibit 3 Form of Amended and Restated Investors’ Rights Agreement (incorporated by reference to Exhibit 10.1 to the Issuer’s Amendment No. 4 to Registration Statement on Form S-1 (File No. 333-257980))

SIGNATURES

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: August 19, 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

Schedule A

Name	Date of Transaction	Number of Shares Acquired / (Disposed)	Transaction	Price per Share
RA Capital Healthcare Fund, L.P.	07/29/21	2,639,507 Series A Preferred	Exchange	(1)
RA Capital Healthcare Fund, L.P.	07/29/21	1,415,002 Series A-1 Preferred	Exchange	(1)
RA Capital Healthcare Fund, L.P.	07/29/21	673,076 Series B Preferred	Exchange	(1)
RA Capital Healthcare Fund, L.P.	08/12/21	4,727,585 Common Stock	Conversion	(2)
RA Capital Healthcare Fund, L.P.	8/12/21	3,004,782 Common Stock	Purchase	\$12.50
RA Capital Nexus Fund, L.P.	07/29/21	708,333 Series A Preferred	Exchange	(1)
RA Capital Nexus Fund, L.P.	07/29/21	518,164 Series A-1 Preferred	Exchange	(1)
RA Capital Nexus Fund, L.P.	08/12/21	1,226,497 Common Stock	Conversion	(2)
RA Capital Nexus Fund II, L.P.	07/29/21	288,461 Series B Preferred	Exchange	(1)
RA Capital Nexus Fund II, L.P.	08/12/21	288,461 Common Stock	Conversion	(2)
RA Capital Nexus Fund II, L.P.	8/12/21	195,218 Common Stock	Purchase	\$12.50
Account	07/29/21	485,493 Series A Preferred	Exchange	(1)
Account	07/29/21	139,481 Series A-1 Preferred	Exchange	(1)
Account	08/12/21	624,974 Common Stock	Conversion	(2)
(3)	09/01/21	555 Stock Option (Right to Buy)	(4)	\$12.50
(3)	10/01/21	555 Stock Option (Right to Buy)	(4)	\$12.50

- (1) In July 2021, the Company's Board of Directors approved an amendment to the Company's certificate of incorporation to effect a reverse split of shares of the Company's common stock on a one-for-2 basis, which was effected on July 29, 2021 (the "Reverse Stock Split").
 - (2) On August 12, 2021 each share of Series A Preferred Stock, Series A-1 Preferred Stock, and Series B Preferred Stock (collectively, the "Preferred Stock") converted into one share of Common Stock of the Issuer without payment of further consideration upon closing of the initial public offering of the Issuer's common stock. The shares had no expiration date.
 - (3) On August 9, 2021 Stock Options were granted to Levin, a Managing Director of the Adviser who serves on the Issuer's board of directors. Under Levin's arrangement with the Adviser, Levin holds the option for the benefit of the Fund, the Nexus Fund, the Nexus Fund II and the Account. Levin is obligated to turn over to the Adviser any net cash or stock received upon exercise of the option, which will offset advisory fees owed by the Fund, the Nexus Fund, the Nexus Fund II, and the Account to the Adviser. The Reporting Persons therefore disclaim beneficial ownership of the option and underlying stock.
 - (4) For so long as Levin continuously provides services to the Issuer, the 20,000 options granted on August 9, 2021 will vest with respect to the shares as follows: 1/36th of the shares will vest on each monthly anniversary of August 1, 2021.
-

JOINT FILING AGREEMENT

This Joint Filing Agreement, dated as of August 19, 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 \$0.0001 per share of Eliem Therapeutics, 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
