
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934

(Amendment No. 18)*

VOR BIOPHARMA INC.

(Name of Issuer)

Common Stock, par value \$0.0001 per share

(Title of Class of Securities)

(CUSIP Number)

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

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

07/16/2026

(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. ☐

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).

SCHEDULE 13D

CUSIP No.

1 Name of reporting person

RA Capital Management, L.P.

2 Check the appropriate box if a member of a Group (See Instructions)

	☐ (a)
	☐ (b)
3	SEC use only
	Source of funds (See Instructions)
4	PF
	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)
5	☐
	Citizenship or place of organization
6	DELAWARE
	Sole Voting Power
7	0.00
Number of	Shared Voting Power
Shares	
Beneficially	8 12,937,855.00
Owned by	
Each	Sole Dispositive Power
Reporting	9 0.00
Person	
With:	Shared Dispositive Power
	10 12,937,855.00
	Aggregate amount beneficially owned by each reporting person
11	12,937,855.00
	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)
12	☐
	Percent of class represented by amount in Row (11)
13	19.9 %
	Type of Reporting Person (See Instructions)
14	IA, PN

SCHEDULE 13D

CUSIP No.

	Name of reporting person
1	Peter Kolchinsky
	Check the appropriate box if a member of a Group (See Instructions)
2	☐ (a)
	☐ (b)
3	SEC use only
	Source of funds (See Instructions)
4	AF
	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)
5	☐
	Citizenship or place of organization
6	UNITED STATES
Number of	7 Sole Voting Power

Shares	
Beneficially	0.00
Owned by	Shared Voting Power
Each	8
Reporting	12,937,855.00
Person	Sole Dispositive Power
With:	9
	0.00
	Shared Dispositive Power
	10
	12,937,855.00
	Aggregate amount beneficially owned by each reporting person
11	12,937,855.00
	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)
12	☐
	Percent of class represented by amount in Row (11)
13	19.9 %
	Type of Reporting Person (See Instructions)
14	HC, IN

SCHEDULE 13D

CUSIP No.

	Name of reporting person
1	Rajeev Shah
	Check the appropriate box if a member of a Group (See Instructions)
2	☐ (a)
	☐ (b)
3	SEC use only
	Source of funds (See Instructions)
4	AF
	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)
5	☐
	Citizenship or place of organization
6	UNITED STATES
	Sole Voting Power
7	0.00
	Shared Voting Power
Number of	8
Shares	12,937,855.00
Beneficially	Sole Dispositive Power
Owned by	9
Each	0.00
Reporting	Shared Dispositive Power
Person	10
With:	12,937,855.00
11	Aggregate amount beneficially owned by each reporting person

	12,937,855.00
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)
	☐
13	Percent of class represented by amount in Row (11)
	19.9 %
14	Type of Reporting Person (See Instructions)
	HC, IN

SCHEDULE 13D

CUSIP No.

1	Name of reporting person
	RA Capital Healthcare Fund, L.P.
	Check the appropriate box if a member of a Group (See Instructions)
2	☐ (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
	Sole Voting Power
7	0.00
	Shared Voting Power
8	12,931,166.00
	Sole Dispositive Power
9	0.00
	Shared Dispositive Power
10	12,931,166.00
	Aggregate amount beneficially owned by each reporting person
11	12,931,166.00
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)
	☐
13	Percent of class represented by amount in Row (11)
	19.9 %
14	Type of Reporting Person (See Instructions)
	PN

SCHEDULE 13D

Item 1. Security and Issuer

Title of Class of Securities:

(a)

Common Stock, par value \$0.0001 per share

Name of Issuer:

(b)

VOR BIOPHARMA INC.

Address of Issuer's Principal Executive Offices:

(c)

500 Boylston Street, Suite 1350, Boston, MASSACHUSETTS , 02116.

Item 1 This Amendment No. 18 (this "Amendment No. 18" or this "Schedule 13D/A") amends and supplements the
Comment: statement on Schedule 13D originally filed with the Securities and Exchange Commission (the "SEC") on February 19, 2021, and amended on November 14, 2022, December 9, 2022, August 11, 2023, December 30, 2024, June 27, 2025, September 19, 2025, October 20, 2025, October 27, 2025, October 30, 2025, November 14, 2025, December 18, 2025, March 16, 2026, April 1, 2026, April 8, 2026, April 10, 2026, April 15, 2026 and April 21, 2026 (as amended, the "Statement") by the Reporting Persons. Unless otherwise defined herein, capitalized terms used in this Amendment No. 18 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

This Schedule 13D/A 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/A jointly in accordance with Rule 13d-1(k) of the Act is attached hereto as Exhibit 99.1. The Reporting Persons' beneficial ownership of the Issuer's common stock consists of (i) 4,501,882 shares of common stock directly held by the Fund; (ii) Common Stock Warrants exercisable for up to 1,056,072 shares of common stock held directly by the Fund; (iii) pre-funded warrants (the "Pre-Funded Warrants" and, together with the Common Stock Warrants, the "Warrants") exercisable for up to 7,900,000 shares of common stock directly held by the Fund; (iv) a total of 6,190 shares of common stock underlying vested stock options (right to buy) held by Joshua Resnick for the benefit of RA Capital; and (v) a total of 499 shares of common stock underlying vested stock options (right to buy) held by Andrew Levin for the benefit of RA Capital. The Pre-Funded Warrants contain a provision (the "Pre-Funded Warrant Beneficial Ownership Blocker") which precludes exercise of the Pre-Funded Warrants to the extent that, following exercise, the Fund, together with its affiliates and other attribution parties, would own more than 19.99% of the common stock outstanding. The Fund is currently prohibited from exercising the Pre-Funded Warrants to the extent that such exercise would result in beneficial ownership of more than 12,937,855 shares of common stock by virtue of the Pre-Funded Warrant Beneficial Ownership Blocker. RA Capital Healthcare Fund GP, LLC is the general partner of the 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 may be deemed a beneficial owner, for purposes of Section 13(d) of the Act, of any securities of the Issuer held by the Fund. The Fund has delegated to RA Capital the sole power to vote and the sole power to dispose of all securities held in its portfolio, including the shares of the Issuer's common stock reported herein. Because each of the Fund has divested itself of voting and investment power over the reported securities it holds and may not revoke that delegation on less than 61 days' notice, the Fund disclaims beneficial ownership of the securities it holds for purposes of Section 13(d) of the Act and therefore disclaims 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/A other than for the purpose of determining their obligations under Section 13(d) of the Act, and the filing of this Schedule 13D/A 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.

(a)

(b)

The address of the principal business office of each of the Reporting Persons is 200 Berkeley Street, 18th Floor, Boston, MA 02116.

(c)

The Fund is a private investment vehicle. RA Capital provides investment management services to the Fund. The principal occupation of each of Dr. Kolchinsky and Mr. Shah is investment management.

(d)

During the last five years, none of the Reporting Persons has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(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.

(f)

See Item 6 of the cover pages.

Item 3. Source and Amount of Funds or Other Consideration

Item 3 of the Statement is hereby amended and supplemented as follows: On July 16, 2026, the Fund exercised Pre-

Funded Warrants to purchase an aggregate of 2,100,000 shares of the Issuer's common stock for \$0.002 a share. The Fund exercised the Pre-Funded Warrants on a cashless basis, resulting in the Issuer's withholding of 213 of such shares to satisfy the exercise price of the Pre-Funded Warrants, and the issuance to the Fund of an aggregate of 2,099,787 shares.

Item 4. Purpose of Transaction

Item 4 of the Statement is hereby amended and supplemented as follows: Effective July 6, 2026, Andrew Levin resigned from the Board of Directors of the Issuer.

Item 5. Interest in Securities of the Issuer

Rows 11 and 13 of each Reporting Person's cover page to this Schedule 13D/A set forth the aggregate number of shares of common stock and percentages of the shares of common stock beneficially owned by such Reporting Person and are incorporated by reference. The percentage set forth in each row 13 is based upon the sum of (i) 54,185,582 shares of common stock outstanding as of May 5, 2026, as reported in the Issuer's Quarterly Report on Form 10-Q filed with the SEC on May 13, 2026 and (ii) 2,099,787 shares of common stock issued subsequent to May 7, 2026 upon the exercise of Pre-Funded Warrants by the Fund, and giving effect to Warrants and stock options, to the extent exercisable within 60 days hereof, as referenced herein. Due to field limitations of the EDGAR filing system, the percentage listed in Row 13 of each of the cover pages has been rounded down to 19.9%.

(a) Rows 7 through 10 of each Reporting Person's cover page to this Schedule 13D/A set forth the number of shares of common stock as to which such Reporting Person has the sole or shared power to vote or direct the vote and sole or shared power to dispose or to direct the disposition and are incorporated by reference.

(b) Except as set forth herein, none of the Reporting Persons has effected any transactions with respect to the securities of the Issuer during the past sixty days.

(c) 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 securities subject to this Schedule 13D/A.

(d) Not applicable.

Item 7. Material to be Filed as Exhibits.

Exhibit 99.1 Joint Filing Agreement (incorporated by reference to Exhibit 99.1 to the Reporting Persons' Schedule 13D/A filed with the SEC on June 27, 2025).

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.

RA Capital Management, L.P.

Signature: /s/ Peter Kolchinsky

Name/Title: By Peter Kolchinsky, Manager

Date: 07/21/2026

Peter Kolchinsky

Signature: /s/ Peter Kolchinsky

Name/Title: Peter Kolchinsky

Date: 07/21/2026

Rajeev Shah

Signature: /s/ Rajeev Shah

Name/Title: Rajeev Shah

Date: 07/21/2026

RA Capital Healthcare Fund, L.P.

Signature: /s/ Peter Kolchinsky

Name/Title: By RA Capital Healthcare Fund GP, LLC, its General Partner, By Peter Kolchinsky, Manager

Date: 07/21/2026