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

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**FORM S-8  
REGISTRATION STATEMENT**  
*UNDER  
THE SECURITIES ACT OF 1933*

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**Vor Biopharma Inc.**  
(Exact name of Registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
Incorporation or organization)

**81-1591163**  
(I.R.S. Employer  
Identification No.)

**100 Cambridgepark Drive  
Suite 101  
Cambridge, Massachusetts**  
(Address of principal executive offices)

**02140**  
(Zip code)

**2021 Equity Incentive Plan  
2021 Employee Stock Purchase Plan  
Non-Plan Inducement Stock Option Grant**  
(Full titles of the plans)

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**Robert Ang, M.B.B.S.**  
**President and Chief Executive Officer**  
**Vor Biopharma Inc.**  
**100 Cambridgepark Drive  
Suite 101  
Cambridge, Massachusetts 02140**  
**(617) 655-6580**  
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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*Copies to:*

**Divakar Gupta  
Katie Kazem  
Charles S. Kim  
Cooley LLP  
55 Hudson Yards  
New York, New York 10001-2157  
(212) 479-6000**

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Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer   
Non-accelerated filer

Accelerated filer   
Smaller reporting company   
Emerging growth company

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If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

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## EXPLANATORY NOTE

This Registration Statement on Form S-8 (the “**Registration Statement**”) is being filed for the purpose of registering an additional 3,667,978 shares of common stock, \$0.0001 par value per share (the “**Common Stock**”), of Vor Biopharma Inc. (the “**Registrant**”), consisting of:

- 2,643,183 shares of Common Stock issuable pursuant to the Registrant’s 2021 Equity Incentive Plan (the “**2021 EIP**”), pursuant to the provisions of the 2021 EIP providing for an automatic increase in the number of shares reserved and available for issuance under the 2021 EIP on January 1, 2023;
- 660,795 shares of Common Stock issuable pursuant to the Registrant’s 2021 Employee Stock Purchase Plan (the “**2021 ESPP**”), pursuant to the provisions of the 2021 ESPP providing for an automatic increase in the number of shares reserved and available for issuance under the 2021 ESPP on January 1, 2023; and
- 364,000 shares of Common Stock issuable upon the exercise of an outstanding option granted to Eyal C. Attar, the Chief Medical Officer of the Registrant, on October 11, 2022, which was granted outside of a plan as an inducement equity award (the “**Inducement Award**”) in accordance with Nasdaq Listing Rule 5635(c)(4). The Inducement Award was approved by the Compensation Committee of the Registrant’s Board of Directors, as an inducement material to Dr. Attar entering into employment with the Registrant.

In accordance with the instructional note to Part I of Form S-8 as promulgated by the Commission, the information specified by Part I of the Form S-8 has been omitted from this Registration Statement.

## PART II

### ITEM 3. INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The following documents filed by the Registrant with the Commission are incorporated by reference into this Registration Statement:

(a) The contents of the Registrant’s Registration Statements on Form S-8, filed with the Commission on [February 9, 2021 \(File No. 333-252908\)](#) and [March 14, 2022 \(File No. 333-263540\)](#).

(b) The Registrant’s Annual Report on Form 10-K (File No. 001-39979) for the fiscal year ended December 31, 2022, filed with the Commission on [March 23, 2022](#);

(c) The description of the Registrant’s Common Stock which is contained in a registration statement on [Form 8-A](#) filed on February 1, 2021 (File No. 001-39979) under the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), as updated by the description of the Registrant’s capital stock contained in the Registrant’s Annual Report on Form 10-K, for the fiscal year ended [December 31, 2021](#), including any amendment or report filed for the purpose of updating such description; and

(d) All other reports and documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act (other than Current Reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits furnished on such form that relate to such items) on or after the date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be a part of this Registration Statement from the date of the filing of such reports and documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any subsequently filed document that also is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

#### **ITEM 4. DESCRIPTION OF SECURITIES**

Not applicable.

#### **ITEM 5. INTERESTS OF NAMED EXPERTS AND COUNSEL**

As of the date of the date hereof, GC&H Investments, LLC and GC&H Investments, a California partnership, which are entities beneficially owned by current and former partners and associates of Cooley LLP, counsel to the Registrant, beneficially hold an aggregate of 35,350 shares of the Registrant's Common Stock.

#### **ITEM 6. INDEMNIFICATION OF DIRECTORS AND OFFICERS**

The Registrant is incorporated under the laws of the State of Delaware. Section 102 of the Delaware General Corporation Law (the "**DGCL**") permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his or her duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit.

Section 145 of the DGCL provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he or she is or is threatened to be made a party by reason of such position, if such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

As permitted by the DGCL, the Registrant's amended and restated certificate of incorporation permits and the Registrant's amended and restated bylaws provide that: (i) the Registrant is required to indemnify its directors to the fullest extent permitted by the DGCL; (ii) the Registrant may, in its discretion, indemnify its officers and employees when determined appropriate by its board of directors; (iii) the Registrant is required, upon satisfaction of certain conditions, to advance expenses incurred by its directors in advance of the final disposition of any action or proceeding; (iv) the Registrant is permitted to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in that capacity regardless of whether the Registrant would otherwise be permitted to indemnify him or her under the provisions of Delaware law; and (v) the Registrant is authorized to enter into indemnification agreements with its directors, officers, employees and agents.

The Registrant has entered into agreements with its directors and executive officers that require it to indemnify them against expenses including, among other things, attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding, whether actual or threatened, to which such person may be made a party by reason of the fact that such person is or was a director or officer of the Registrant or any of its affiliates, provided such person acted in good faith and in a manner such person reasonably believed to be in, or not opposed to, the best interests of the Registrant. The indemnification agreements also set forth certain procedures that will apply in the event of a claim for indemnification thereunder. At present, no litigation or proceeding is pending that involves any of the Registrant's directors or officers regarding which indemnification is sought, nor is the Registrant aware of any threatened litigation that may result in claims for indemnification.

The Registrant maintains a directors' and officers' liability insurance policy. The policy insures directors and officers against unindemnified losses arising from certain wrongful acts in their capacities as directors and officers and reimburses the Registrant for those losses for which it has lawfully indemnified the directors and officers. The policy contains various exclusions.

**ITEM 7. EXEMPTION FROM REGISTRATION CLAIMED**

Not applicable.

**ITEM 8. EXHIBITS**

<u>Exhibit Number</u>	<u>Description</u>	<u>Schedule Form</u>	<u>File Number</u>	<u>Exhibit</u>	<u>Filing Date</u>
4.1	<a href="#">Amended and Restated Certificate of Incorporation of the Registrant.</a>	8-K	001-39979	3.1	February 9, 2021
4.2	<a href="#">Amended and Restated Bylaws of the Registrant.</a>	8-K	001-39979	3.2	February 9, 2021
4.3	<a href="#">Form of Common Stock Certificate of the Registrant.</a>	S-1/A	333-252175	4.1	February 1, 2021
5.1*	<a href="#">Opinion of Cooley LLP.</a>				
23.1*	<a href="#">Consent of Cooley LLP (included in Exhibit 5.1).</a>				
23.2*	<a href="#">Consent of Ernst &amp; Young LLP, Independent Registered Public Accounting Firm.</a>				
24.1*	<a href="#">Power of Attorney (included on the signature page of this registration statement).</a>				
99.1	<a href="#">2021 Equity Incentive Plan and Forms of Stock Option Grant Notice, Stock Option Agreement, Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement.</a>	S-1/A	333-252175	10.6	February 1, 2021
99.2	<a href="#">2021 Employee Stock Purchase Plan.</a>	S-1/A	333-252175	10.7	February 1, 2021
107*	<a href="#">Filing Fee Table</a>				

\* Filed herewith

## ITEM 9. UNDERTAKINGS

The undersigned registrant hereby undertakes:

- (a) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
  - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933, as amended (the “*Securities Act*”);
  - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the “Calculation of Registration Fee” table in the effective registration statement.
  - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

*Provided, however,* that paragraphs (a)(i) and (a)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the registration statement.

- (b) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
  - (c) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
2. The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant’s annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan’s annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
  3. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, Commonwealth of Massachusetts, on March 23, 2023.

### VOR BIOPHARMA INC.

By: /s/ Robert Ang

Robert Ang, M.B.B.S.

President and Chief Executive Officer

## POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Robert Ang and Nathan Jorgensen, and each of them, as his or her true and lawful attorneys-in-fact and agents, each with the full power of substitution, for him or her and in their name, place or stead, in any and all capacities, to sign any and all amendments to this Registration Statement (including post-effective amendments), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or his, her or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Robert Ang</u> Robert Ang, M.B.B.S	President, Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	March 23, 2023
<u>/s/ Nathan Jorgensen</u> Nathan Jorgensen, Ph.D.	Chief Financial Officer <i>(Principal Financial Officer and Principal Accounting Officer)</i>	March 23, 2023

Signature	Title	Date
<u>/s/ Matthew Patterson</u> Matthew Patterson	Chairman of the Board	March 23, 2023
<u>/s/ Daniella Beckman</u> Daniella Beckman	Director	March 23, 2023
<u>/s/ David C. Lubner</u> David C. Lubner	Director	March 23, 2023
<u>/s/ Sven (Bill) Ante Lundberg</u> Sven (Bill) Ante Lundberg, M.D.	Director	March 23, 2023
<u>/s/ Kush M. Parmar</u> Kush M. Parmar, M.D., Ph.D.	Director	March 23, 2023
<u>/s/ Joshua Resnick</u> Joshua Resnick, M.D.	Director	March 23, 2023



Divakar Gupta  
+1 212 479 6474  
dgupta@cooley.com

March 23, 2023

Vor Biopharma Inc.  
100 Cambridgepark Drive, Suite 101  
Cambridge, MA 02140

Ladies and Gentlemen:

We have represented Vor Biopharma Inc., a Delaware corporation (the "**Company**"), in connection with the filing by the Company of a Registration Statement on Form S-8 (the "**Registration Statement**") with the Securities and Exchange Commission (the "**Commission**") covering the offering of up to 3,667,978 shares (the "**Shares**") of the Company's common stock, \$0.0001 par value per share (the "**Common Stock**"), consisting of (i) 2,643,183 shares of Common Stock issuable pursuant to the Company's 2021 Equity Incentive Plan (the "**2021 Plan**"), (ii) 660,795 shares of Common Stock issuable pursuant to the Company's 2021 Employee Stock Purchase Plan (the "**2021 ESPP**") and (iii) 364,000 shares of Common Stock issuable under an inducement stock option award granted by the Company, pursuant to the terms of a stock option grant notice and stock option agreement (together with the 2021 Plan and the 2021 ESPP, the "**Plans**").

In connection with this opinion, we have examined and relied upon (a) the Registration Statement and the related prospectuses, (b) the Company's certificate of incorporation and bylaws, each as currently in effect, (c) the Plans and (d) records, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. We have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to originals of all documents submitted to us as copies, the accuracy, completeness and authenticity of certificates of public officials and the due authorization, execution and delivery of all documents by all persons other than the Company where authorization, execution and delivery are prerequisites to the effectiveness thereof. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters.

Our opinion is expressed only with respect to the General Corporation Law of the State of Delaware. We express no opinion to the extent that any other laws are applicable to the subject matter hereof. We are not rendering any opinion as to compliance with any federal or state antifraud law, rule or regulation relating to securities, or to the sale or issuance thereof.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares, when sold and issued in accordance with the Plans, the Registration Statement and the related prospectuses, will be validly issued, fully paid and nonassessable (except as to shares issued pursuant to certain deferred payment arrangements, which will be fully paid and nonassessable when such deferred payments are made in full).

Our opinion is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated. Our opinion is based on these laws as in effect on the date hereof, and we disclaim any obligation to advise you of facts, circumstances, events or developments which hereafter may be brought to our attention and which may alter, affect or modify the opinion expressed herein.

Cooley LLP 55 Hudson Yards New York, New York 10001-2157  
t: (212) 479-6000 f: (212) 479-6275 cooley.com





Vor Biopharma Inc.

March 23, 2023

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We consent to the filing of this opinion as an exhibit to the Registration Statement. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission thereunder.

Sincerely,

Cooley LLP

By: /s/ Divakar Gupta

Divakar Gupta

Cooley LLP 55 Hudson Yards New York, New York 10001-2157  
t: (212) 479-6000 f: (212) 479-6275 cooley.com

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the 2021 Equity Incentive Plan, 2021 Employee Stock Purchase Plan and Non-Plan Inducement Stock Option Grant of Vor Biopharma Inc. of our report dated March 23, 2023, with respect to the consolidated financial statements of Vor Biopharma Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2022, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts  
March 23, 2023

**Calculation of Filing Fee Tables**  
**Form S-8**  
**VOR BIOPHARMA INC.**

(Exact Name of Registrant as Specified in its Charter)

Security Type	Security Class Title	Fee Calculation Rule <sup>(1)</sup>	Amount Registered	Proposed Maximum Offering Price Per Share	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Equity	Common Stock, par value \$0.0001 per share, reserved for issuance pursuant to the 2021 Equity Incentive Plan	Other <sup>(2)</sup>	2,643,183 <sup>(3)</sup>	\$5.18 <sup>(2)</sup>	\$13,691,687.94	0.00011020	\$1,508.82
Equity	Common Stock, par value \$0.0001 per share, reserved for issuance pursuant to the 2021 Employee Stock Purchase Plan	Other <sup>(2)</sup>	660,795 <sup>(4)</sup>	\$5.18 <sup>(2)</sup>	\$2,909,480.39	0.00011020	\$320.62
Equity	Common Stock, par value \$0.0001 per share, reserved for issuance upon the exercise of an outstanding inducement option granted to Eyal C. Attar outside of any plan	457(h) <sup>(5)</sup>	364,000 <sup>(5)</sup>	\$3.77 <sup>(5)</sup>	\$1,372,280.00	0.00011020	\$151.23
<b>Total Offering Amounts</b>					\$17,973,448.33		\$1,980.67
<b>Total Fee Offsets</b>							-
<b>Net Fee Due</b>							\$1,980.67

- (1) Pursuant to Rule 416(a) promulgated under the Securities Act of 1933, as amended (the “*Securities Act*”), this Registration Statement shall also cover any additional shares of Registrant’s common stock that become issuable under the Registrant’s 2021 Equity Incentive Plan (the “*2021 EIP*”) and the Registrant’s 2021 Employee Stock Purchase Plan (the “*2021 ESPP*”), as well as outstanding stock options granted outside of any plan, by reason of any stock dividend, stock split, recapitalization, or other similar transaction effected that results in an increase to the number of outstanding shares of Registrant’s common stock, as applicable.
- (2) Estimated solely for the purpose of calculating the proposed maximum aggregate offering price and the registration fee in accordance with Rules 457(c) and (h) under the Securities Act, based on the average of the high and low prices of the Registrant’s common stock as reported in the consolidated reporting system of The Nasdaq Global Select Market on March 16, 2023, which was \$5.18.
- (3) Represents an automatic annual increase equal to 4% of the total number of shares of the Registrant’s common stock outstanding on December 31st of the immediately preceding calendar year to the aggregate number of shares of the Registrant’s common stock reserved for issuance under, and which annual increase is provided by, the 2021 EIP.
- (4) Represents an automatic increase equal to 1% of the total number of shares of the Registrant’s capital stock outstanding on December 31 of the preceding calendar year to the aggregate number of shares of the Registrant’s common stock reserved for issuance under, and which annual increase is provided by, the 2021 ESPP.
- (5) Estimated solely for the purpose of calculating the proposed maximum aggregate offering price and the registration fee in accordance with Rules 457(h) under the Securities Act, based upon \$3.77, which is the exercise price for an outstanding inducement option to purchase 364,000 shares of common stock granted to Eyal C. Attar, the Chief Medical Officer of the Registrant, on October 11, 2022, which was granted outside of a plan.