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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**  
(Full titles of the plans)

**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)

*Copies to:*

**Richard Segal  
Charles S. Kim  
Divakar Gupta  
Cooley LLP  
500 Boylston Street  
Boston, Massachusetts 02116  
(617) 937-2300**

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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

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 (1) 1,495,017 shares of common stock, \$0.0001 par value per share (the “**Common Stock**”), of Vor Biopharma Inc. (the “**Registrant**”) issuable pursuant to the Registrant’s 2021 Equity Incentive Plan (the “**2021 EIP**”) and (2) 373,754 shares of Common Stock issuable pursuant to the Registrant’s 2021 Employee Stock Purchase Plan (the “**2021 ESPP**”). These additional shares of Common Stock are securities of the same class as other securities for which an original registration statement on Form S-8 ([File No. 333-252908](#)) was filed with the Securities and Exchange Commission (the “**Commission**”) on February 9, 2021. Accordingly, the contents of the Registrant’s registration statement on Form S-8 filed with the Commission on February 9, 2021 ([File No. 333-252908](#)) are incorporated by reference into this Registration Statement pursuant to General Instruction E of Form S-8. These additional shares of Common Stock have become reserved for issuance as a result of the operation of the “evergreen” provision in the 2021 EIP and 2021 ESPP, which provides that the total number of shares subject to such plan may be increased each year pursuant to a specified formula.

## 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 Registrant's Annual Report on Form 10-K \(File No. 001-39979\) for the fiscal year ended December 31, 2021, filed with the Commission on March 14, 2022](#); and

(b) 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.

(c) 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 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="#"><u>Amended and Restated Certificate of Incorporation of the Registrant.</u></a>	8-K	001-39979	3.1	February 9, 2021
4.2	<a href="#"><u>Amended and Restated Bylaws of the Registrant.</u></a>	8-K	001-39979	3.2	February 9, 2021
4.3	<a href="#"><u>Form of Common Stock Certificate of the Registrant.</u></a>	S-1/A	333-252175	4.1	February 1, 2021
5.1*	<a href="#"><u>Opinion of Cooley LLP.</u></a>				
23.1*	<a href="#"><u>Consent of Cooley LLP (included in Exhibit 5.1).</u></a>				
23.2*	<a href="#"><u>Consent of Ernst &amp; Young LLP, independent registered public accounting firm.</u></a>				
24.1*	<a href="#"><u>Power of Attorney (included on the signature page of this registration statement).</u></a>				
99.1	<a href="#"><u>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.</u></a>	S-1/A	333-252175	10.6	February 1, 2021
99.2	<a href="#"><u>2021 Employee Stock Purchase Plan.</u></a>	S-1/A	333-252175	10.7	February 1, 2021
107*	<a href="#"><u>Filing Fee Table</u></a>				

\* Filed herewith

## 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 14, 2022.

### 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.

Signature	Title	Date
<u>/s/ Robert Ang</u> Robert Ang, M.B.B.S	President, Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	March 14, 2022
<u>/s/ Nathan Jorgensen</u> Nathan Jorgensen, Ph.D.	Chief Financial Officer <i>(Principal Financial Officer and            Principal Accounting Officer)</i>	March 14, 2022
<u>/s/ Matthew Patterson</u> Matthew Patterson	Chairman of the Board	March 14, 2022
<u>/s/ Daniella Beckman</u> Daniella Beckman	Director	March 14, 2022
<u>/s/ David C. Lubner</u> David C. Lubner	Director	March 14, 2022
<u>/s/ Sven (Bill) Ante Lundberg</u> Sven (Bill) Ante Lundberg, M.D.	Director	March 14, 2022
<u>/s/ Kush M. Parmar</u> Kush M. Parmar, M.D., Ph.D.	Director	March 14, 2022
<u>/s/ Joshua Resnick</u> Joshua Resnick, M.D.	Director	March 14, 2022



Richard C. Segal  
T: +1 617 937 2332  
rsegal@cooley.com

March 14, 2022

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 covering the offering of up to 1,868,771 shares (the “**Shares**”) of the Company’s common stock, par value \$0.0001 per share (the “**Common Stock**”), consisting of (i) 1,495,017 shares of Common Stock issuable pursuant to the Company’s 2021 Equity Incentive Plan (the “**2021 Plan**”) and (ii) 373,754 shares of Common Stock issuable pursuant to the Company’s 2021 Employee Stock Purchase Plan (together with the 2021 Plan, 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 Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws, each as currently in effect, (c) the Plans, and (d) originals or copies certified to our satisfaction of such records, documents, 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 thereof, 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 and express no opinion and provide no assurance as to compliance with any federal or state securities law, rule or regulation.

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).

Cooley LLP 500 Boylston Street 14th Floor Boston, MA 02116-3736  
t: +1 617 937 2300 f: +1 617 937 2400 cooley.com



Vor Biopharma Inc.  
March 14, 2022  
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We consent to the filing of this opinion as an exhibit to the Registration Statement.

Sincerely,

Cooley LLP

By: /s/ Richard Segal  
Richard Segal

Cooley LLP 500 Boylston Street 14th Floor Boston, MA 02116-3736  
t: +1 617 937 2300 f: +1 617 937 2400 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 and 2021 Employee Stock Purchase Plan of Vor Biopharma Inc. of our report dated March 14, 2022, 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, 2021, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts  
March 14, 2022

**Calculation of Filing Fee Tables**  
**Form S-8**  
**VOR BIOPHARMA INC.**  
(Exact Name of Registrant as Specified in its Charter)

<u>Security Type</u>	<u>Security Class Title</u>	<u>Fee Calculation Rule(1)</u>	<u>Amount Registered</u>	<u>Proposed Maximum Offering Price Per Share</u>	<u>Maximum Aggregate Offering Price</u>	<u>Fee Rate</u>	<u>Amount of Registration Fee(6)</u>
Equity	Common Stock, par value \$0.0001 per share, reserved for issuance pursuant to the 2021 Equity Incentive Plan	Other(2)	1,495,017(3)	\$ 7.89(2)	\$11,795,684.13	0.0000927	\$ 1,093.46
Equity	Common Stock, par value \$0.0001 per share, reserved for issuance pursuant to the 2021 Employee Stock Purchase Plan	Other(4)	373,754(5)	\$ 7.89(4)	\$ 2,506,581.20	0.0000927	\$ 232.36
<b>Total Offering Amounts</b>					\$14,302,265.33		\$ 1,325.82
<b>Total Fee Offsets</b>							—
<b>Net Fee Due</b>							\$ 1,325.82

- (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**”) 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 7, 2022, which was \$7.89.

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- (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) 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 7, 2022, which was \$7.89, multiplied by 85%, which is the percentage of the price per share applicable to purchases under the 2021 ESPP.
  - (5) 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.
  - (6) The Registrant does not have any fee offsets.