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

**FORM S-8**

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

**FibroBiologics, Inc.**

(Exact name of registrant as specified in its charter)

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

**455 E. Medical Center Blvd., Suite 300**  
**Houston, Texas**  
(Address of Principal Executive Offices)

**86-3329066**  
(I.R.S Employer  
Identification No.)

**77598**  
(Zip Code)

**FibroBiologics, Inc. 2022 Stock Plan**  
(Full title of the plan)

**Pete O’Heeron**  
**Chief Executive Officer**  
**FibroBiologics, Inc.**  
**455 E. Medical Center Blvd.**  
**Suite 300**  
**Houston, Texas 77598**  
**(281) 671-5150**

Copies to:

**Brian Fenske**  
**Norton Rose Fulbright US LLP**  
**1301 McKinney Street**  
**Suite 5100**  
**Houston, Texas 77010**  
**(713) 651-5151**

**Ruben A. Garcia**  
**General Counsel**  
**FibroBiologics, Inc.**  
**455 E. Medical Center Blvd.**  
**Suite 300**  
**Houston, Texas 77598**  
**(281) 671-5150**

(Name, address, and telephone number, including area code, of agent for service)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth 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 (this "Registration Statement") is being filed by FibroBiologics, Inc. (the "Registrant") with the Securities and Exchange Commission (the "Commission") to register 12,500,000 shares of its common stock, par value \$0.00001 per share, for issuance under the FibroBiologics, Inc. 2022 Stock Plan (the "Plan"), and any additional shares of the Registrant's common stock that become issuable under the Plan by reason of any stock dividend, stock split, or other similar transaction pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act").

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## PART I

### INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The documents containing the information specified in Part I of Form S-8 will be sent or given to employees as specified by Rule 428(b)(1). Such documents need not be filed with the Commission, either as part of this Registration Statement, or as prospectuses or prospectus supplements pursuant to Rule 424. These documents and the documents incorporated by reference in this Registration Statement pursuant to Item 3 of Part II of Form S-8, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

## PART II

### INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

#### Item 3. Incorporation of Documents by Reference.

Except to the extent that information is deemed furnished and not filed pursuant to securities laws and regulations, the following documents, which have been previously filed with the Commission, or are being filed with this Registration Statement, are incorporated by reference into this Registration Statement:

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2023, filed with the Commission on February 29, 2024;
- our Quarterly Report on [Form 10-Q](#) for the three months ended March 31, 2024, filed with the Commission on May 14, 2024;
- our Current Reports on Form 8-K, filed with the Commission on [February 2, 2024](#), [February 6, 2024](#), [February 8, 2024](#), [February 14, 2024](#), [February 20, 2024](#), and [April 26, 2024](#) (except, in each case, any information, including exhibits, furnished and not filed with the Commission); and
- the description of our common stock included under the caption “Description of Capital Stock” contained in the prospectus forming part of the Registrant’s Registration Statement on [Form S-1](#) (File No. 333-275361), which description has been incorporated by reference in Item 1 of the Registrant’s Registration Statement on [Form 8-A](#), filed pursuant to Section 12 of the Exchange Act, on January 24, 2024, together with any amendment or report filed with the Commission for the purpose of updating such description.

Except to the extent that information is deemed furnished and not filed pursuant to securities laws and regulations, all documents filed by the Registrant with the Commission pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, after the date of this Registration Statement and prior to the filing of a post-effective amendment that (i) indicates that all securities offered under this Registration Statement have been sold, or (ii) deregisters all securities then remaining unsold under this Registration Statement, shall be deemed to be incorporated by reference into this Registration Statement and to be a part of this Registration Statement from the date of filing of such documents. In no event, however, will any information that we disclose under Item 2.02 or Item 7.01 (and any related exhibits) of any Current Report on Form 8-K that we may from time to time furnish to the Commission be incorporated by reference into, or otherwise become a part of, this Registration Statement.

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For purposes of this Registration Statement, any statement contained in a document incorporated or deemed to be incorporated herein by reference shall be deemed to be modified or superseded to the extent that a statement contained herein or in any subsequently filed document which also is or is deemed to be incorporated herein by reference modifies or supersedes such statement. Any 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.**

Not applicable.

**Item 6. Indemnification of Directors and Officers.**

We are incorporated under the laws of the State of Delaware. Section 145 of the DGCL provides that a Delaware corporation may indemnify any person who was or is, or is threatened to be made, a party to any threatened, pending, or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation), by reason of the fact that such person is or was a director, officer, employee or agent of such corporation, or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding, if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful.

Section 145 of the DGCL also provides that a Delaware corporation may indemnify any person who was or is, or is threatened to be made, a party to any threatened, pending, or completed action or suit by or in the right of the corporation by reason of the fact that such person is or was a director, officer, employee or agent of such corporation, or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if 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 corporation, except that no indemnification of any claim, issue or matter is permitted without judicial approval if such person is adjudged to be liable to the corporation.

Under the DGCL, where a present or former officer or director is successful on the merits or otherwise in the defense of any action referred to above, or in defense of any claim, issue or matter therein, the corporation must indemnify such present or former officer or director against the expenses (including attorney's fees) which such present or former officer or director actually and reasonably incurred in connection with such action (or claim, issue or matter therein).

Section 102(b)(7) of the DGCL permits a corporation to provide in its certificate of incorporation that a director or officer of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duties as a director or officer, except for liability for any:

- breach of a director's or officer's duty of loyalty to the corporation or its stockholders;
  - act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
  - in the case of a director, unlawful payment of dividends or unlawful stock purchase or redemption;
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- transaction from which the director or officer derived an improper personal benefit; or
- in the case of an officer, any action by or in the right of the corporation.

Our amended and restated certificate of incorporation contains a provision that precludes any director or officer of ours from being personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director or officer, except for the aforementioned liabilities which we are not permitted to eliminate or limit under Section 102(b)(7) of the DGCL.

In addition, our amended and restated certificate of incorporation and bylaws, in each case, require us to indemnify, and advance expenses to, to the fullest extent permitted by law, any person who was or is, or is threatened to be made, a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative by reason of the fact that the person is or was our director, officer, employee or agent, or is or was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise.

Our bylaws authorize us to purchase and maintain insurance on behalf of any person who is or was our director, officer, employee or agent, or is or was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust, enterprise or nonprofit entity against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not we would have the power to indemnify such person against such liability under the provisions of the DGCL.

We maintain an insurance policy covering our officers and directors with respect to certain liabilities, including liabilities arising under the Securities Act. In addition, we entered into separate indemnification agreements with each of our directors and executive officers.

#### Item 7. Exemption from Registration Claimed.

Not applicable.

#### Item 8. Exhibits.

Exhibit Number	Exhibit Description	Incorporation By Reference			
		Form	SEC File No.	Exhibit	Filing Date
3.1	<a href="#">Amended and Restated Certificate of Incorporation of the registrant</a>	S-1/A	333-275361	3.1	November 30, 2023
3.2	<a href="#">Bylaws of the registrant</a>	S-1/A	333-275361	3.2	November 30, 2023
4.1	<a href="#">Form of Warrant of FibroBiologics, Inc. issued pursuant to the GEM SPA</a>	S-1/A	333-277019	4.2	March 15, 2024
5.1*	<a href="#">Opinion of Norton Rose Fulbright US LLP.</a>				
23.1*	<a href="#">Consent of Norton Rose Fulbright US LLP (included in Exhibit 5.1).</a>				
23.2*	<a href="#">Consent of WithumSmith+Brown PC.</a>				
24.1*	<a href="#">Power of Attorney (included in the signature page hereto).</a>				
99.1	<a href="#">2022 Stock Plan.</a>	S-1/A	333-275361	10.12	November 30, 2023
99.2	<a href="#">Form of Stock Option Notice and Grant Agreement.</a>	S-1/A	333-275361	10.20	December 4, 2023
107.1*	<a href="#">Filing Fee Table</a>				

\* Filed herewith.

## Item 9. Undertakings.

The undersigned Registrant hereby undertakes:

(1) 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;

(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 20% change in the maximum aggregate offering price set forth in the "Calculation of Filing Fee Tables" or "Calculation of Registration Fee" table, as applicable, in the effective registration statement; and

(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 (1)(i) and (1)(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 Securities Exchange Act of 1934 that are incorporated by reference in the Registration Statement;

(2) 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 therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof; and

(3) 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.

(b) 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 therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(c) 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 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.

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## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, 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 Houston, State of Texas, on May 15, 2024.

### FibroBiologics, Inc.

By: /s/ Pete O'Heeron  
Pete O'Heeron  
Chief Executive Officer

## POWER OF ATTORNEY

We, the undersigned officers and directors of FibroBiologics, Inc., hereby severally constitute and appoint Pete O'Heeron and Mark Andersen, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for us and in our name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, 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 or necessary to be done in and about the premises, as full to all intents and purposes as we might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, 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/ Pete O'Heeron</u> Pete O'Heeron	Chairperson and Chief Executive Officer (Principal Executive Officer)	May 15, 2024
<u>/s/ Mark Andersen</u> Mark Andersen	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	May 15, 2024
<u>/s/ Robert Hoffman</u> Robert Hoffman	Director	May 15, 2024
<u>/s/ Victoria Niklas, M.D.</u> Victoria Niklas, M.D.	Director	May 15, 2024
<u>/s/ Richard Cilento</u> Richard Cilento	Director	May 15, 2024
<u>/s/ Stacy Coen</u> Stacy Coen	Director	May 15, 2024
<u>/s/ Matthew Link</u> Matthew Link	Director	May 15, 2024

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May 15, 2024



Norton Rose Fulbright US LLP  
1301 McKinney, Suite 5100  
Houston, Texas 77010-3095  
United States

FibroBiologics Inc.  
455 E. Medical Center Blvd.  
Suite 300  
Houston, Texas 77598

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Fax +1 713 651 5246  
nortonrosefulbright.com

**Re: Registration Statement of FibroBiologics Inc. on Form S-8**

Dear Sirs:

We have acted as counsel to FibroBiologics Inc. (the **Company**), a Delaware corporation, in connection with its filing of a registration statement on Form S-8 (the **Registration Statement**) under the Securities Act of 1933, as amended (the **Securities Act**), on May 15, 2024. The Registrations Statement relates to the offer by the Company of up to 12,500,000 shares (the **Shares**) of the Company's common stock, par value \$0.00001 per share, which are issuable pursuant to the FibroBiologic, Inc. 2022 Stock Plan (the **Plan**). We have been requested by the Company to render this opinion in connection with the filing of the Registration Statement. No opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement other than as expressly stated herein with respect to the issuance of the Shares.

As counsel, we have made such investigations and examined the originals, or duplicate, certified, conformed, telecopied or photostatic copies of such corporate records, agreements, documents and other instruments and have made such other investigations as we have considered necessary or relevant for the purposes of this opinion, including:

- (a) the Registration Statement;
- (b) the Amended & Restated Certificate of Incorporation and Bylaws of the Company; and
- (c) a Unanimous Written Consent of the Company's Board of Directors approving the issuance of the Shares pursuant to the Plan.

With respect to the accuracy of factual matters material to this opinion, we have relied upon certificates or comparable documents and representations of public officials and of officers of the Company and have not performed any independent check or verification of such factual matters.

In giving this opinion, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to authentic original documents of all documents submitted to us as duplicates, certified, conformed, telecopied or photostatic copies and the authenticity of the originals of such latter documents, and that all facts set forth in the certificates supplied by officers of the Company are complete, true and accurate as of the date hereof.

The opinion set forth below is limited to the General Corporation Law of the State of Delaware in effect on the date hereof. Our opinion is rendered as of the date hereof, and we assume no obligation to advise you of changes in law or fact (or the effect thereof on the opinions expressed herein) that hereafter may come to our attention.

Norton Rose Fulbright US LLP is a limited liability partnership registered under the laws of Texas.

Norton Rose Fulbright US LLP, Norton Rose Fulbright LLP, Norton Rose Fulbright Australia, Norton Rose Fulbright Canada LLP and Norton Rose Fulbright South Africa Inc are separate legal entities and all of them are members of Norton Rose Fulbright Verein, a Swiss verein. Norton Rose Fulbright Verein helps coordinate the activities of the members but does not itself provide legal services to clients. Details of each entity, with certain regulatory information, are available at [nortonrosefulbright.com](http://nortonrosefulbright.com).

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May 15, 2024  
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The opinion set forth below is subject to the following exceptions, limitations and qualifications: (i) the effect of bankruptcy, insolvency, reorganization, arrangement, moratorium, fraudulent conveyance, fraudulent transfer and other similar laws relating to or affecting the rights of creditors; (ii) the effect of general principles of equity (including, without limitation, concepts of materiality, reasonableness, good faith and fair dealing and the possible unavailability of specific performance, injunctive relief and other equitable remedies), regardless of whether considered in a proceeding at law or in equity, (iii) the effect of public policy considerations that may limit the rights of the parties to obtain further remedies, (iv) we express no opinion with respect to the enforceability of provisions relating to choice of law, choice of venue, jurisdiction or waivers of jury trial, and (v) we express no opinion with respect to the enforceability of any waiver of any usury defense.

Based on the foregoing, and subject to the assumptions, limitations and qualifications set forth herein, we are of the opinion that the Shares have been duly authorized and, when and to the extent issued pursuant to the Plan upon receipt by the Company of the consideration for the Shares specified therein, will be validly issued, fully paid and non-assessable.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement and to the use of our name therein. 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 or the Rules and Regulations of the Commission promulgated thereunder.

Very truly yours,

Norton Rose Fulbright US LLP

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**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated February 29, 2024, relating to the financial statements of FibroBiologics, Inc. as of and for the years ended December 31, 2023 and 2022, appearing in the Company's Annual Report on Form 10-K for the year ended December 31, 2023.

/s/ WithumSmith+Brown, PC

East Brunswick, New Jersey

May 15, 2024

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## Calculation of Filing Fee Tables

FORM S-8  
(Form Type)FibroBiologics, Inc.  
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered(1)	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Equity	Common stock, par value \$0.00001 per share	Rule 457(c) and (h)	12,500,000 (2)	\$ 9.01(3)	\$ 112,625,000	\$147.60 per \$1,000,000	\$ 16,623.45
<b>Total Offering Amounts</b>					\$ 112,625,000		\$ 16,623.45
<b>Total Fee Offsets</b>							—
<b>Net Fee Due</b>							\$ 16,623.45

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the “Securities Act”), this Registration Statement on Form S-8 shall be deemed to cover any additional shares of common stock, par value \$0.00001 per share (the “Common Stock”) of FibroBiologics, Inc. that may be issued pursuant to the FibroBiologics, Inc. 2022 Stock Plan (the “2022 Plan”) as a result of any stock dividend, stock split, recapitalization or other similar transaction, and any other securities with respect to which the outstanding shares are converted or exchanged.
- (2) Represents 12,500,000 shares of Common Stock that are or may become issuable under the 2022 Plan.
- (3) Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) and (h) of the Securities Act, and based on the average of the high and low sale prices of the Common Stock, as quoted on the Nasdaq Stock Market, on May 9, 2024.