

PROSPECTUS SUPPLEMENT
(To Prospectus dated February 10, 2025)



FibroBiologics, Inc.

**Up to \$6,150,000
Common Stock**

On May 1, 2026, we entered into that certain At The Market Offering Agreement (the “Sales Agreement”) with H.C. Wainwright & Co., LLC (“Wainwright”), relating to shares of our common stock, par value \$0.00001 per share (the “common stock” or the “Common Stock”). In accordance with the Sales Agreement, we may offer and sell shares of our Common Stock pursuant to this prospectus supplement and the accompanying prospectus having an aggregate offering price of up to \$6,150,000 from time to time through or to Wainwright, acting as sales agent or principal.

Our Common Stock is traded on the Nasdaq Capital Market (“Nasdaq”), under the symbol “FBLG.” On April 29, 2026, the closing sale price of our Common Stock on Nasdaq was \$1.31 per share.

Sales of our Common Stock, if any, under this prospectus supplement and the accompanying prospectus may be made in sales deemed to be “at the market offerings” as defined in Rule 415 promulgated under the Securities Act of 1933, as amended (the “Securities Act”). If authorized by us in writing, Wainwright may also sell shares of our Common Stock in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices. Wainwright is not required to sell any specific number or dollar amount of securities, and Wainwright will act as a sales agent or principal using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between Wainwright and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The compensation to Wainwright for sales of our Common Stock sold pursuant to the Sales Agreement will be equal to 3.0% of the gross proceeds of any shares of our Common Stock sold under the Sales Agreement. In connection with the sale of our Common Stock on our behalf, Wainwright will be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of such sales will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Wainwright with respect to certain liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended (the “Exchange Act”).

As of the date of this prospectus supplement, the aggregate market value of our outstanding Common Stock held by non-affiliates was approximately \$42.5 million, which was calculated based on 4,889,282 shares of outstanding Common Stock held by non-affiliates as of April 29, 2026, at a price per share of \$8.70, the closing sale price of our Common Stock on Nasdaq on March 6, 2026. In no event will we sell shares of our Common Stock pursuant to this prospectus supplement and accompanying prospectus with a value exceeding more than one-third of our public float in any 12 calendar month period if, and for so long as, our public float is below \$75 million at the date of measurement. During the 12 calendar months prior to, and including, the date of this prospectus supplement, we have sold \$8.02 million of shares of our Common Stock pursuant to General Instruction I.B.6 of Form S-3.

Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and net proceeds to us, if any, are not determinable at this time. There is no arrangement to place proceeds of the offering in escrow, trust or similar arrangement. See “*Plan of Distribution*.”

On March 25, 2026, our board of directors approved a reverse split of our outstanding common stock at a ratio of 1-for-20 shares. The reverse stock split became effective as of 12:01 a.m. Eastern Time on March 30, 2026. As a result of the reverse stock split, every 20 shares of our issued and outstanding common stock automatically were combined into one share of common stock. The reverse stock split reduced the number of shares of our outstanding common stock from 70,256,883 shares to approximately 3,512,845 shares,

subject to adjustment for fractional shares. The number of authorized shares of common stock and preferred stock under our amended and restated certificate of incorporation, as amended, was not reduced in connection with the reverse stock split. Our board of directors determined that implementing the reverse split was appropriate to regain compliance with the Bid-Price Rule (as defined herein) and to broaden potential investor interest. All share and per share numbers in this prospectus supplement give effect to the reverse split unless otherwise stated, however, the accompanying prospectus and any documents incorporated by reference herein or therein that were filed prior to March 30, 2026 do not give effect to the reverse stock split, unless otherwise stated.

We are an “emerging growth company” and a “smaller reporting company” as defined under the federal securities laws and, as such, have elected to comply with certain reduced public company reporting requirements for this prospectus and may elect to do so in future filings. See “*Prospectus Supplement Summary—Implications of Being an Emerging Growth Company and a Smaller Reporting Company.*”

Investing in our Common Stock involves a high degree of risk. You should read carefully and consider the information contained in and incorporated by reference under “*Risk Factors*” beginning on page S-8 of this prospectus supplement and beginning on page 3 of the accompanying prospectus and under the caption “*Risk Factors*” in our most recently filed Annual Report on Form 10-K and most recently filed Quarterly Report on Form 10-Q, each as filed with the Securities and Exchange Commission, which are incorporated herein by reference in their entirety.

Neither the Securities and Exchange Commission (the “SEC”) nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

H.C. Wainwright & Co.

The date of this prospectus supplement is May 1, 2026.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is part of a registration statement that was filed with the Securities and Exchange Commission using a “shelf” registration process and consists of two parts. The first part is the prospectus supplement, including the documents incorporated by reference herein, which describes the specific terms of this offering. The second part, the accompanying prospectus, including the documents incorporated by reference therein, provides more general information. Before you invest, you should carefully read this prospectus supplement, the accompanying prospectus, all information incorporated by reference herein and therein, as well as the additional information described under the heading “*Where You Can Find Additional Information.*” These documents contain information you should carefully consider when deciding whether to invest in our Common Stock.

This prospectus relates only to an offering of up to \$6,150,000 of shares of our Common Stock through Wainwright. These sales, if any, will be made pursuant to the terms of the Sales Agreement entered into between us and Wainwright on May 1, 2026, a copy of which was filed as Exhibit 1.1 to our Current Report on Form 8-K filed with the SEC on May 1, 2026, and is incorporated by reference into this prospectus supplement and the accompanying prospectus.

This prospectus supplement may add, update or change information contained in the accompanying prospectus. To the extent there is a conflict between the information contained in this prospectus supplement and the accompanying prospectus, you should rely on information contained in this prospectus supplement, provided that if any statement in, or incorporated by reference into, one of these documents is inconsistent with a statement in another document having a later date, the statement in the document having the later date modifies or supersedes the earlier statement. Any statement so modified will be deemed to constitute a part of this prospectus only as so modified, and any statement so superseded will be deemed not to constitute a part of this prospectus.

You should rely only on the information contained in this prospectus supplement, the accompanying prospectus, any document incorporated by reference herein or therein, or any free writing prospectuses we may provide to you in connection with this offering. Neither we nor Wainwright has authorized anyone to provide you with any different information. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may provide to you. The information contained in this prospectus supplement, the accompanying prospectus, and in the documents incorporated by reference herein or therein is accurate only as of the date such information is presented. Our business, financial condition, results of operations and prospects may have changed since that date.

This prospectus supplement and the accompanying prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the shares of our Common Stock to which it relates, nor do this prospectus supplement and the accompanying prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

Unless otherwise indicated, information contained in or incorporated by reference into this prospectus supplement and the accompanying prospectus concerning our industry and the markets in which we operate, including market opportunity, market position and competitive landscape, is based on information from our management’s estimates, as well as from industry publications, surveys and studies conducted by third parties. Management estimates are derived from publicly available information, our knowledge of our industry, and assumptions based on such information and knowledge, which we believe to be reasonable. In addition, while we believe that information contained in industry publications, surveys and studies has been obtained from reliable sources, the accuracy and completeness of such information is not guaranteed, and we have not independently verified any of the data contained in these third-party sources.

This prospectus supplement and the accompanying prospectus, and any documents incorporated by reference herein or therein, include statements that are based on various assumptions and estimates that are subject to numerous known and unknown risks and uncertainties. Some of these risks and uncertainties are described under the heading “*Risk Factors*” beginning on page S-8 of this prospectus supplement, beginning on page 3 of the accompanying prospectus and in the section titled “*Risk Factors*” in our most recent Annual Report on Form 10-K and most recently filed Quarterly Report on Form 10-Q, which are incorporated by reference into the prospectus. These and other important factors could cause our future results to be materially different from the results expected as a result of, or implied by, these assumptions and estimates. You should read the information contained in this prospectus supplement and the accompanying prospectus, and the documents incorporated by reference herein and therein, completely and with the understanding that future results may be materially different and worse from what we expect. See the information included under the heading “*Cautionary Note Regarding Forward-Looking Statements.*”

Securities offered pursuant to the registration statement to which this prospectus supplement relates may only be offered and sold if not more than three years have elapsed since February 10, 2025, the initial effective date of the registration statement, subject to the extension of this period in compliance with applicable SEC rules.

We note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreement, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

Unless otherwise indicated or the context otherwise requires, all references in this prospectus supplement and the accompanying prospectus to “we,” “us,” “our,” the “Company,” “FibroBiologics” and similar terms refer to FibroBiologics, Inc.

PROSPECTUS SUPPLEMENT SUMMARY

The following is a summary of selected information contained elsewhere in this prospectus supplement, the accompanying prospectus, and any documents incorporated by reference herein or therein. It does not contain all of the information that you should consider before buying our securities. You should read this prospectus supplement, the accompanying prospectus, and any documents incorporated by reference herein or therein in their entirety.

Overview

We are a clinical-stage biotechnology company focused on developing and commercializing fibroblast-based therapies for patients suffering from chronic diseases with significant unmet medical needs, including wound healing, multiple sclerosis, or MS, degenerative disc disease, psoriasis, certain cancers, and potential human longevity applications including thymic involution reversal using a thymic organoid. Our most advanced product candidates are CYWC628, CYP317, CYMS101 and CybroCell™.

Recent Developments

Nasdaq Listing Compliance

As previously disclosed, on July 1, 2025, we received a notification letter from the Nasdaq Listing Qualifications Staff (the “Staff”) notifying us that the closing bid price of our shares of common stock was below the minimum closing bid price of \$1.00 per share during the previous 30 consecutive trading days, as required for continued listing on the Nasdaq Capital Market (the “Bid Price Rule”). We were provided an initial period of 180 calendar days, or until December 29, 2025, to regain compliance with the Bid Price Rule. To regain compliance, the closing bid price of our common stock had to be \$1.00 per share or more for a minimum of 10 consecutive business days at any time before December 29, 2025. If we did not regain compliance with the Bid Price Rule by December 29, 2025, we would be eligible for an additional 180 calendar day compliance period if we met the continued listing requirement for market value of publicly held shares, or MVLS, and all other initial listing standards for the Nasdaq Capital Market, except the bid price requirement, and provided written notice to Nasdaq of our intention to cure the deficiency during the second compliance period. On August 4, 2025, we received a notification letter from the Staff notifying us that our MVLS had closed below the minimum \$35 million threshold required for continued listing on the Nasdaq Capital Market, or the Equity Rule, for the previous thirty (30) consecutive trading day period. We were provided a 180-calendar day period to regain compliance with the Equity Rule, through February 2, 2026.

We evaluated available options to regain compliance with the applicable rules. To that end, on February 20, 2026, our stockholders approved the implementation of a reverse split of our outstanding common stock, at a ratio ranging from any whole number between and including 1-for-5 and 1-for-30 shares, with the ratio to be determined by our board of directors.

On March 9, 2026, we received a letter from the Nasdaq Hearings Panel (the “Panel”) confirming that we demonstrated compliance with the Equity Rule. The compliance determination also noted that we remain subject to a Mandatory Panel Monitor with respect to the Equity Rule for a period of one year from March 9, 2026. If within that one-year monitoring period we fail to satisfy the Equity Rule, we will not be permitted to provide the Nasdaq Listing Qualifications Staff with a compliance plan nor would the Staff be permitted to grant additional time to regain compliance. Instead, the Staff will issue a delist determination, at which time we may request a new hearing before a Nasdaq Hearings Panel. Such request would stay any delisting action by Nasdaq at least pending the conclusion of the hearing process.

On April 17, 2026, we received formal notice from Nasdaq that we have demonstrated compliance with the Bid Price Rule and all other applicable criteria for continued listing on the Nasdaq Capital Market. Accordingly, the previously disclosed listing matter has been closed. We were also informed that we will remain subject to a Mandatory Panel Monitor for a period of one year from April 17, 2026. If within that one-year monitoring period we fail to maintain compliance with the Bid Price Rule, we will not be afforded a cure period to regain compliance with the Bid Price Rule. Instead, the Staff will issue a delist determination, at which time we may request a new hearing before a Nasdaq Hearings Panel. Such request would stay any further delisting action by Nasdaq at least pending the conclusion of the hearing process.

Reverse Stock Split

On March 25, 2026, our board of directors approved a reverse split of our outstanding common stock at a ratio of 1-for-20 shares. The reverse stock split became effective as of 12:01 a.m. Eastern Time on March 30, 2026. As a result of the reverse stock split, every 20 shares of our issued and outstanding common stock automatically were combined into one share of common stock. The reverse stock split reduced the number of shares of our outstanding common stock from 70,256,883 shares to approximately 3,512,845 shares, subject to adjustment for fractional shares. The number of authorized shares of common stock and preferred stock under our amended and restated certificate of incorporation, as amended, was not reduced in connection with the reverse stock split. Our board of directors determined that implementing the reverse split was appropriate to regain compliance with the Bid-Price Rule and to broaden potential

investor interest. All share and per share numbers in this prospectus supplement give effect to the reverse split unless otherwise stated, however, the accompanying prospectus and any documents incorporated by reference herein or therein that were filed prior to March 30, 2026 do not give effect to the reverse stock split, unless otherwise stated.

April Offering

On March 31, 2026, we commenced a best-efforts public offering (the “April Offering”) of (i) 1,028,788 shares of Common Stock, (ii) pre-funded warrants in lieu of shares to purchase up to 1,243,940 shares of Common Stock (the “April Pre-Funded Warrants”), and (iii) warrants to purchase one share of Common Stock for each share of Common Stock and/or April Pre-Funded Warrant purchased for an aggregate of up to 2,272,728 shares of Common Stock (the “April Warrants”). Certain of the investors purchased their shares and pre-funded warrants, together with the accompanying April Warrants, pursuant to a securities purchase agreement, dated March 31, 2026, by and among the Company and such investors (the “April Purchase Agreement”). The combined public offering price for each share of Common Stock, together with an accompanying April Warrant to purchase one share of Common Stock, is \$1.32, and the combined public offering price for each April Pre-Funded Warrant, together with an accompanying April Warrant to purchase one share of Common Stock, is \$1.31999 (equal to the offering price, minus \$0.00001, the exercise price of each April Pre-Funded Warrant). The exercise price of the April Warrants is \$1.32 per share. The exercisability of the April Warrants is subject to stockholder approval as described below. The April Offering closed on April 2, 2026.

The net proceeds to the Company from the Offering were approximately \$2.5 million, after deducting placement agent fees and offering expenses payable by the Company. Additionally, if the holders of the April Warrants exercise such warrants in full for cash following stockholder approval, we would receive additional gross proceeds of approximately \$3.0 million. However, we cannot predict when or if the April Warrants will be exercised for cash or exercised at all. It is possible that the April Warrants may be exercised on a cashless (net) basis as described below or may expire and never be exercised.

H.C. Wainwright & Co., LLC acted as exclusive placement agent in connection with the April Purchase Agreement, pursuant to that certain engagement letter, dated as of November 10, 2025, between us and H.C. Wainwright & Co., LLC (as amended on March 12, 2026, the “Engagement Letter”). Pursuant to the Engagement Letter and the April Purchase Agreement, in connection with the closing of the registered direct offering, we issued to designees of H.C. Wainwright & Co., LLC warrants to purchase 7.0% of the number of Shares of Common Stock sold in the April Offering (or warrants to purchase up to 159,091 shares of Common Stock), at an exercise price of \$1.65 per share (the “April Placement Agent Warrants”). The exercisability of the April Placement Agent Warrants is subject to stockholder approval as described below. The April Placement Agent Warrants will expire five years from the commencement of sales in the April Offering. Except as provided above, the April Placement Agent Warrants have substantially the same terms as the April Warrants.

The April Warrants and the April Placement Agent Warrants will not be exercisable until, and are subject to, approval by our stockholders of the issuance of the shares of Common Stock issuable upon exercise of the April Warrants and the April Placement Agent Warrants, respectively (together, the “April Warrant Shares”). The April Warrants will expire five years following the date of the stockholder approval, if it is obtained. The April Placement Agent Warrants will expire five years from the commencement of sales in the April Offering. We intend to submit the issuance of the April Warrant Shares upon exercise of the April Warrants and April Placement Agent Warrants, as the case may be, for approval of our shareholders, but there can be no assurance that such approval will be obtained. A holder of the April Warrants or the April Placement Agent Warrants will not have the right to exercise any portion of such warrants if such holder, together with its affiliates, would beneficially own in excess of 4.99% of the number of Common Stock outstanding immediately after giving effect to such exercise. If at the time of exercise of the April Warrants or the April Placement Agent Warrants, as the case may be, there is no effective registration statement registering the April Warrant Shares for resale or the prospectus contained therein is not available for the resale of the April Warrant Shares by their holder, then such warrants may also be exercised, in whole or in part, by cashless (net) exercise. The exercise price of the April Warrants and the April Placement Agent Warrants is subject to customary adjustment for stock splits, stock dividends, stock combinations, and similar capital transactions or such other event as further described in such warrants.

Lease Termination Agreement

On April 3, 2026, we entered into a Sublease Buyout Agreement (the “Lease Termination Agreement”) with United Fire & Casualty Co. (doing business as United Fire Group) (the “Sublandlord”) to terminate that certain Sublease Agreement, which was effective as of October 5, 2022 (“Sublease”), pursuant to which Sublandlord subleased to the Company certain premises located at the third floor of 455 E. Medical Center Blvd, Webster, County of Harris, Texas 77598. The Lease Termination Agreement terminated the Sublease effective April 2, 2026, successfully concluding the Sublease well ahead of its original expiration date of November 30, 2027.

We resolved our remaining rent obligations with a single payment of \$45,108.25 and expect to save approximately \$0.8 million in future rent payments.

This strategic consolidation follows the 2025 opening of our state-of-the-art laboratory facility, encompassing over 10,000 square feet of dedicated lab and office space. By eliminating redundant office costs approximately 18 months ahead of schedule, we strengthen our operational efficiency and redirect resources toward our core mission of advancing fibroblast-based therapeutics.

Amended and Restated Bylaws

On April 16, 2026, our board of directors amended and restated our Amended and Restated Bylaws (the “Bylaws”) to amend Section 2.07 of the Bylaws to change the requirement for quorum at a meeting of the stockholders from a majority of voting power to one-third of the voting power.

Implications of Being an Emerging Growth Company and a Smaller Reporting Company

We are an “emerging growth company” as defined in the Securities Act of 1933, or the Securities Act, as modified by the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. As such, we are eligible to take, and intend to take, advantage of certain exemptions from various reporting requirements applicable to other public companies that are not emerging growth companies for as long as we continue to be an emerging growth company, including (i) the exemption from the auditor attestation requirements with respect to internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, (ii) the exemptions from say-on-pay, say-on-frequency and say-on-golden parachute voting requirements and (iii) reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements.

We will remain an emerging growth company until the earliest of (i) December 31, 2028, (ii) the last day of the fiscal year in which we have total annual gross revenue of at least \$1.235 billion, (iii) the last day of the fiscal year in which we are deemed to be a “large accelerated filer” as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, or the Exchange Act, which would occur if the market value of our Common Stock held by non-affiliates was \$700.0 million or more as of the last business day of the second fiscal quarter of such year or (iv) the date on which we have issued more than \$1.0 billion in non-convertible debt securities during the prior three-year period.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of this extended transition period and, as a result, we may adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for non-public companies instead of the dates required for other public companies.

We are also a “smaller reporting company” as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies until the fiscal year following the determination that our common stock held by non-affiliates is \$250 million or more measured on the last business day of our second fiscal quarter, or our annual revenues are less than \$100 million during the most recently completed fiscal year and our common stock held by non-affiliates is \$700 million or more measured on the last business day of our second fiscal quarter.

Corporate Information

We were formed in April 2021 as a Texas limited liability company under the name FibroBiologics, LLC, and converted to a Delaware corporation in December 2021 under the name Fibrobiologics, Inc. On April 12, 2023, we changed our name to FibroBiologics, Inc. Our principal executive offices are located at 9350 Kirby Drive, Suite 300, Houston, Texas 77054. Our telephone number is (281) 671-5150 and our website address is www.fibrobiologics.com. Information contained on or that can be accessed through our website is neither a part of nor incorporated by reference into this prospectus, and you should not consider information on our website to be part of this prospectus. Our website address is included in this prospectus as an inactive textual reference only.

THE OFFERING

The following summary contains basic information about our Common Stock and the offering and is not intended to be complete. It does not contain all of the information that may be important to you. For a more complete understanding of our Common Stock, you should read the section entitled "Description of Capital Stock" in the accompanying prospectus.

Shares of Common Stock Offered:	Shares of our Common Stock having an aggregate offering price of up to \$6,150,000 pursuant to the Sales Agreement.
Plan of Distribution:	Sales of our common stock, if any, under this prospectus supplement and the accompanying prospectus may be made by any method permitted by law deemed to be an "at-the-market" offering as defined in Rule 415 of the Securities Act, including without limitation sales made directly on Nasdaq, on any other existing trading market for the common stock in the United States. The sales agent is not required to sell any certain number of shares or dollar amount of our common stock, but will act as a sales agent and use commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us, consistent with its normal trading and sales practices, subject to the terms of the Sales Agreement. See "Plan of Distribution" beginning on page S-18 of this prospectus supplement.
Common stock outstanding prior to this offering:	5,208,915 shares.
Common stock to be outstanding after this offering⁽¹⁾:	Up to 9,903,571 shares, assuming sales of 4,694,656 shares of our Common Stock in this offering at an assumed offering price of \$1.31 per share, the closing sale price of our Common Stock on Nasdaq on April 29, 2026. The actual number of shares of our Common Stock issued will vary depending on the sales price under this offering.
Use of Proceeds:	We currently intend to use the net proceeds from this offering for working capital and general corporate purposes. See "Use of Proceeds."
Listing:	Our common stock is listed on the Nasdaq Capital Market under the symbol "FBLG".
Risk Factors:	An investment in our Common Stock involves substantial risks. You should read carefully the "Risk Factors" included and incorporated by reference in this prospectus supplement and the accompanying prospectus, including the risk factors incorporated by reference from our filings with the SEC.
Transfer Agent and Registrar:	The transfer agent and registrar for our shares of common stock is VStock Transfer, LLC, with its business address at 18 Lafayette Place, Woodmere, NY 11598.

⁽¹⁾ The number of shares outstanding after this offering is based on 5,208,915 shares of our common stock outstanding as of April 29, 2026, and excludes (in each case below, giving effect to the 1-for-20 reverse stock split of our common stock effected on March 30, 2026):

- 285,812 shares of common stock issuable upon exercise of stock options outstanding under the FibroBiologics, Inc. 2022 Stock Plan (the "2022 Stock Plan");
- 339,188 shares of common stock reserved for issuance under our 2022 Stock Plan;
- 517 shares of common stock underlying warrants that were issued in connection with the issuance of certain shares of Series B-1 preferred stock, par value \$0.00001 per share (the "Series B-1 Preferred Stock");

- 125 shares of Common Stock issuable upon conversion of outstanding shares of Series C preferred stock, par value \$0.00001 per share (the “Series C Preferred Stock”);
- 374,761 shares of common stock underlying the outstanding pre-funded warrants that were issued in a registered direct offering (the “November 18 Offering”) pursuant to a securities purchase agreement, dated November 18, 2025, with a single investor, at an exercise price of \$0.0002 per share;
- 605,511 shares of common stock underlying warrants (the “November 18 Warrants”) that were issued in a concurrent private placement to the November 18 Offering, at an exercise price of \$6.606 per share;
- 223,881 shares of common stock issuable upon exercise of warrants (the “November 24 Warrants”) that were issued in a private placement concurrent to a registered direct offering (the “November 24 Offering”) pursuant to a securities purchase agreement, dated November 24, 2025, with certain institutional investors, at an exercise price of \$6.70 per share;
- 15,672 shares of common stock issuable upon exercise of the warrants that were issued to the placement agent (or its designees) as compensation in connection with the November 24 Offering, at an exercise price of \$8.376 per share.
- 261,364 shares of common stock issuable upon exercise of warrants (the “December Warrants”) that were issued in a private placement concurrent to a registered direct offering (the “December Offering”) pursuant to a securities purchase agreement, dated December 14, 2025, with certain institutional investors, at an exercise price of \$6.60 per share;
- 18,296 shares of common stock issuable upon exercise of the warrants that were issued to the placement agent (or its designees) as compensation in connection with the December Offering, at an exercise price of \$8.25 per share;
- 577,000 shares of common stock underlying the outstanding April Pre-Funded Warrants, at an exercise price of \$0.00001 per share;
- 2,272,728 shares of common stock underlying the April Warrants, at an exercise price of \$1.32 per share; and
- 159,091 shares of common stock issuable upon exercise of the April Placement Agent Warrants, at an exercise price of \$1.65 per share.

Unless otherwise indicated, all information in this prospectus (i) gives effect to the 1-for-20 reverse stock split of our common stock effected on March 30, 2026 and (ii) assumes no issuance of the shares of Common Stock exercisable or convertible as described above.

RISK FACTORS

An investment in our securities involves a high degree of risk. Before you decide to invest in our securities, you should carefully consider the following risks and uncertainties as well as the risks set forth in the accompanying prospectus and under the section titled "Risk Factors" in our most recent Annual Report on Form 10-K for the year ended December 31, 2025 (the "Annual Report"), which is incorporated by reference into this prospectus supplement and the accompanying prospectus, as those risk factors are amended or supplemented by our subsequent filings with the SEC. You should also refer to the other information contained in this prospectus supplement and the accompanying prospectus, and the documents incorporated by reference herein and therein, including our financial statements and related notes and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in our Annual Report. The occurrence of one or more of the events or circumstances described in such risk factors, alone or in combination with other events or circumstances, may have a material adverse effect on our business, reputation, revenue, financial condition, results of operations and future prospects, in which event you could lose all or part of your investment. The risks and uncertainties described and incorporated by reference herein are not intended to be exhaustive and are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations. This prospectus supplement, the accompanying prospectus, and the documents incorporated by reference herein and therein also contain forward-looking statements that involve risks and uncertainties. See "Cautionary Note Regarding Forward-Looking Statements." Our actual results could differ materially and adversely from those anticipated in these forward-looking statements.

Risks Related to this Offering

Regardless of the amount of cash that is raised in this offering, the Company will require additional financing in the future to continue as a going concern.

The Company will not generate sufficient revenues in the foreseeable future to fund its operations. Accordingly, regardless of the amount of net proceeds that are raised in this offering, we will require additional financing in the future to continue as a going concern. If we are unable to raise additional capital or generate sufficient cash from operations to adequately fund our operations, we will, at a minimum, need to curtail planned business activities to reduce costs, which we expect will harm our ability to execute on our business plan and continue operations.

You may experience immediate and substantial dilution.

Because the prices per share at which shares of our Common Stock are sold in this offering may be substantially higher than the net tangible book value per share of our Common Stock, you may suffer immediate and substantial dilution in the net tangible book value of our Common Stock you purchase in this offering in the amount of \$0.1932 per share, representing the difference between the assumed offering price of \$1.31 per share, the last closing price as reported on the Nasdaq Capital Market on April 29, 2026, and our pro forma as adjusted net tangible book value as of March 31, 2026. The shares sold in this offering, if any, will be sold from time to time at various prices. If we sell shares in this offering at a price that is higher than the net tangible book value per share of our Common Stock, investors in this offering will experience dilution. The exercise of outstanding stock options and warrants may result in further dilution of your investment. See the section entitled "*Dilution*" on page S-16 of this prospectus supplement for a more detailed illustration of the dilution you would incur if you participate in this offering.

We have broad discretion in the use of the net proceeds we receive from this offering and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds we receive in this offering, including for any of the purposes described in the section entitled "*Use of Proceeds*," and you will not have the opportunity as part of your investment decision to assess whether our management is using the net proceeds appropriately. Because of the number and variability of factors that will determine our use of our net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business and cause the price of our common stock to decline. Pending their use, we may invest our net proceeds from this offering in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders.

Future sales of substantial amounts of our Common Stock, or the possibility that such sales could occur, could adversely affect the market price of our Common Stock.

We may issue up to \$6,150,000 of our Common Stock from time to time in this offering. The issuance from time to time of shares in this offering, as well as our ability to issue such shares in this offering, could have the effect of depressing the market price or

increasing the market price volatility of our Common Stock. See “*Plan of Distribution*” on page S-18 of this prospectus supplement for more information about the possible adverse effects of our sales under the Sales Agreement.

It is not possible to predict the actual number of shares we will sell under the Sales Agreement, or the gross proceeds resulting from those sales.

Subject to certain limitations in the Sales Agreement and compliance with applicable law, we have the discretion to deliver a placement notice to Wainwright at any time throughout the term of the Sales Agreement. The number of shares that are sold through Wainwright after delivering a placement notice will fluctuate based on a number of factors, including the market price of our Common Stock during the sales period, the limits we set with Wainwright in any applicable placement notice, and the demand for our Common Stock during the sales period. Because the price per share of each share sold will fluctuate during the sales period, it is not currently possible to predict the number of shares that will be sold or the gross proceeds to be raised in connection with those sales.

Our Common Stock offered hereby will be sold in “at the market offerings,” and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares in this offering at different times will likely pay different prices, and so may experience different levels of dilution and different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices, and numbers of shares sold in this offering. In addition, there is no minimum or maximum sales price for shares to be sold in this offering. Investors may experience a decline in the value of the shares they purchase in this offering as a result of sales made at prices lower than the prices they paid.

We have not paid cash dividends in the past and we do not expect to pay cash dividends in the foreseeable future. Any return on investment may be limited to the capital appreciation, if any, of our Common Stock.

We have not paid cash dividends on our Common Stock and we do not anticipate paying cash dividends on our Common Stock in the foreseeable future. Our ability to pay dividends may be limited by covenants in future outstanding indebtedness that we or our subsidiaries may incur. Since we do not intend to pay dividends, a stockholder’s ability to receive a return on such stockholder’s investment will depend on any future appreciation in the market value of our Common Stock. There is no guarantee that our Common Stock will appreciate or even maintain the price at which our stockholders have purchased it.

Risks Related to Ownership of Our Common Stock and the Reverse Stock Split

Failure to maintain compliance with the applicable Nasdaq continued listing requirements could result in our common stock being delisted, which could limit stockholders’ ability to trade our common stock.

As a listed company on Nasdaq, we are required to meet certain financial, public float, bid price and liquidity standards on an ongoing basis to continue the listing of our common stock. If we fail to meet these continued listing requirements, our common stock may be subject to delisting, which could materially impact the liquidity of our common stock making it more challenging to buy and sell shares of our common stock. We are currently listed on the Nasdaq Capital Market and trade under the symbol “FBLG.” On March 27, 2025, we submitted to Nasdaq an application to transfer the listing of our common stock from The Nasdaq Global Market to the Nasdaq Capital Market. This transfer allowed us to satisfy less stringent financial, liquidity, and market capitalization requirements to continue the listing of our common stock. For example, the market value requirement of the Nasdaq Capital Market is \$35 million versus \$50 million for the Nasdaq Global Market and the stockholders’ equity requirement for the Nasdaq Capital Market is \$2.5 million versus \$10 million for the Nasdaq Global Market. If we fail to meet any of the continued listing requirements of the Nasdaq Capital Market, our common stock may be delisted from Nasdaq.

On July 1, 2025, we received a notification letter from the Nasdaq Listing Qualifications Staff, or the Staff, notifying us that the closing bid price of our shares of common stock was below the minimum closing bid price of \$1.00 per share during the previous 30 consecutive trading days, as required for continued listing on the Nasdaq Capital Market, or the Bid Price Rule. We were provided an initial period of 180 calendar days, or until December 29, 2025, to regain compliance with the Bid Price Rule. To regain compliance, the closing bid price of our common stock had to be \$1.00 per share or more for a minimum of 10 consecutive business days at any time before December 29, 2025. If we did not regain compliance with the Bid Price Rule by December 29, 2025, we would be eligible for an additional 180 calendar day compliance period if we met the continued listing requirement for market value of publicly held shares, or MVLS, and all other initial listing standards for the Nasdaq Capital Market, except the bid price requirement, and provided written notice to Nasdaq of our intention to cure the deficiency during the second compliance period. If it appeared to the Staff that we would not be able to cure the deficiency, or if we were otherwise not eligible for the additional compliance period, Nasdaq would notify us that

our securities would be subject to delisting. In the event of such notification, we could appeal the Staff's determination to delist our securities, but there could be no assurance the Staff would grant our request for continued listing.

On August 4, 2025, we received a notification letter from the Staff notifying us that our MVLS had closed below the minimum \$35 million threshold required for continued listing on the Nasdaq Capital Market, or the Equity Rule, for the previous thirty (30) consecutive trading day period. We were provided a 180-calendar day period to regain compliance with the Equity Rule, through February 2, 2026. To regain compliance, our MVLS needed to be \$35 million or more for a minimum of 10 consecutive business days at any time before February 2, 2026. If we did not regain compliance with the Equity Rule by February 2, 2026, Nasdaq would notify us that our securities would be subject to delisting. In the event of such notification, we could appeal the Staff's determination to delist our securities, but there could be no assurance the Staff would grant our request for continued listing.

On December 30, 2025, we received a notification indicating that the Staff planned to delist our securities due to our continued non-compliance with the Bid Price Rule as of December 29, 2025, unless we timely requested a hearing before the Nasdaq Hearings Panel, or the Panel. We timely requested a hearing before the Panel.

On February 3, 2026, we received formal notice from the Staff that, based on our continued non-compliance with the Equity Rule, the deficiency serves as an additional basis for the delisting of our common stock. The notice indicated that, in addition to the deficiency under the Bid Price Rule, the Panel will consider our plan to regain compliance with the Equity Rule in their decision regarding our request for continued listing on the Nasdaq Capital Market.

At our hearing before the Panel, we presented our plan to regain compliance with both the Bid Price Rule and the Equity Rule. On February 12, 2026, we received a determination from the Panel granting our request for the continued listing of our common stock on the Nasdaq Capital Market, subject to our satisfying (i) the equity standard of \$2.5 million required under Rule 5550(b)(1) as an alternative to the Equity Rule on or before February 27, 2026, (ii) the Bid Price Rule on or before April 13, 2026, and (iii) all other applicable criteria for continued listing on Nasdaq on or before April 13, 2026.

On March 9, 2026, we received a letter from the Panel confirming that we demonstrated compliance with the Equity Rule, that we remained noncompliant with the Bid Price Rule, and must regain compliance with the Bid Price Rule on or before April 13, 2026. We are also required to comply with all of Nasdaq's listing rules on or before April 13, 2026. We will also be subject to a Mandatory Panel Monitor until March 9, 2027. If, within that one-year monitoring period, Staff finds that we are again out of compliance with the Equity Rule that was the subject of the exception, we will not be permitted to provide the Staff with a plan of compliance with respect to that deficiency and Staff will not be permitted to grant additional time for us to regain compliance with respect to that deficiency, nor will we be afforded an applicable cure or compliance period pursuant to Rule 5810(c)(3). Instead, Staff will issue a Delist Determination Letter and we will have an opportunity to request a new hearing with the initial Panel or a newly convened Hearings Panel if the initial Panel is unavailable. We will have the opportunity to respond/present to the Hearings Panel as provided by Listing Rule 5815(d)(4)(C). Our securities may be at that time delisted from Nasdaq.

We evaluated available options to regain compliance with the applicable rules. To that end, on February 20, 2026, our stockholders approved the implementation of a reverse split of our outstanding common stock, at a ratio ranging from any whole number between and including 1 for 5 and 1 for 30 shares, with the ratio to be determined by our board of directors. On March 25, 2026, our board of directors approved a reverse split of our outstanding common stock at a ratio of 1-for-20 shares. The reverse stock split became effective as of 12:01 a.m. Eastern Time on March 30, 2026. As a result of the reverse stock split, every 20 shares of our issued and outstanding common stock automatically were combined into one share of common stock.

On April 17, 2026, we received formal notice from Nasdaq that we have demonstrated compliance with the Bid Price Rule and all other applicable criteria for continued listing on the Nasdaq Capital Market. Accordingly, the previously disclosed listing matter has been closed. We were also informed that we will remain subject to a Mandatory Panel Monitor for a period of one year from April 17, 2026. If within that one-year monitoring period we fail to maintain compliance with the Bid Price Rule, we will not be afforded a cure period to regain compliance with the Bid Price Rule. Instead, the Staff will issue a delist determination, at which time we may request a new hearing before a Nasdaq Hearings Panel. Such request would stay any further delisting action by Nasdaq at least pending the conclusion of the hearing process.

Although we have taken definitive steps to regain compliance with the applicable rules, there can be no assurance that we will be able to maintain compliance with the applicable rules, or if we implement an option that regains our compliance, maintain compliance thereafter. If we fail to regain or maintain compliance with the Nasdaq continued listing standards, our common stock will be subject to delisting from Nasdaq. Upon a delisting of our common shares, this offering would immediately terminate.

Without a Nasdaq market listing, stockholders may have a difficult time getting a quote for the sale or purchase of our common stock, the sale or purchase of our common stock would likely be made more difficult and the trading volume and liquidity of our common stock could decline. Delisting from Nasdaq could also result in negative publicity and could also make it more difficult for us to raise additional capital. The absence of such a listing may adversely affect the acceptance of our common stock as currency or the value accorded by other parties. Further, if we are delisted, we would lose federal pre-emption of state securities laws as it relates to our securities and thus also incur additional costs under state blue sky laws in connection with any sales of our securities. These requirements could severely limit the market liquidity of our common stock and the ability of our stockholders to sell our common stock in the secondary market. If our common stock is delisted by Nasdaq, our common stock may be eligible to trade on an over-the-counter quotation system, such as the OTCQB market, where an investor may find it more difficult to sell our common stock or obtain accurate quotations as to the market value of our common stock. We cannot assure you that our common stock, if delisted from Nasdaq, will be listed on another national securities exchange or quoted on an over-the-counter quotation system. If our common stock is delisted, it may come within the definition of “penny stock” as defined in the Exchange Act and would be covered by Rule 15g-9 of the Exchange Act. Rule 15g-9 imposes additional sales practice requirements on broker-dealers who sell securities to persons other than established customers and accredited investors. For transactions covered by Rule 15g-9, the broker-dealer must make a special suitability determination for the purchaser and receive the purchaser’s written agreement to the transaction prior to the sale. Consequently, Rule 15g-9, if it were to become applicable, would affect the ability or willingness of broker-dealers to sell our securities, and accordingly would affect the ability of stockholders to sell their securities in the public market. These additional procedures could also limit our ability to raise additional capital in the future.

A reverse stock split may decrease the liquidity of the shares of our common stock.

The liquidity of the shares of our common stock may be affected adversely by a reverse stock split, including the 1-for-20 reverse stock split of our common stock effected on March 30, 2026, given the reduced number of shares that are outstanding following the reverse stock split. In addition, a reverse stock split increases the number of stockholders who own odd lots (less than 100 shares) of our common stock, creating the potential for such stockholders to experience an increase in the cost of selling their shares and greater difficulty effecting such sales.

Following a reverse stock split, the resulting market price of our common stock may not attract new investors, including institutional investors, and may not satisfy the investing requirements of those investors. Consequently, the trading liquidity of our common stock may not improve.

Although we believe that a higher market price of our common stock may help generate greater or broader investor interest, there can be no assurance that a reverse stock split, including the 1-for-20 reverse stock split of our common stock effected on March 30, 2026, will result in a share price that will attract new investors, including institutional investors. In addition, there can be no assurance that the market price of our common stock will satisfy the investing requirements of those investors. As a result, the trading liquidity of our common stock may not necessarily improve. The primary intent for the 1-for-20 reverse stock split of our common stock effected on March 30, 2026, was that the anticipated increase in the price of our common stock immediately following and resulting from a reverse stock split due to the reduction in the number of issued and outstanding shares of common stock would help us meet the Bid-Price Rule. It cannot be assured that a reverse stock split, including the 1-for-20 reverse stock split of our common stock effected on March 30, 2026, will result in any sustained proportionate increase in the market price of our common stock, which is dependent upon many factors, including our business and financial performance, general market conditions, and prospects for future success, which are unrelated to the number of shares of our common stock outstanding. It is not uncommon for the market price of a company’s common stock to decline in the period following a reverse stock split.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying prospectus contain forward-looking statements that can involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this prospectus supplement and the accompanying prospectus, including statements regarding our future results of operations and financial position, business strategy, prospective products, product approvals, research and development costs, future revenue, timing and likelihood of success, plans and objectives of management for future operations, future results of anticipated products and prospects, plans and objectives of management are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “anticipate,” “believe,” “contemplate,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “target,” “will,” or “would” or the negative of these terms or other similar expressions, although not all forward-looking statements contain these words. Forward-looking statements contained in this prospectus supplement and the accompanying prospectus include, but are not limited to, statements about:

- the timing, progress and results of preclinical studies and clinical trials for our current and future product candidates, including statements regarding the timing of initiation and completion of studies or trials and related preparatory work, the period during which the results of the trials will become available and our research and development programs;
- the timing, scope or likelihood of regulatory submissions, filings, and approvals, including final regulatory approval of our product candidates;
- our ability to develop and advance product candidates into, and successfully complete, clinical trials;
- our expectations regarding the size of the patient populations for our product candidates, if approved for commercial use;
- the implementation of our business model and our strategic plans for our business, product candidates and technology;
- our commercialization, marketing and manufacturing capabilities and strategy;
- the pricing and reimbursement of our product candidates, if approved;
- the rate and degree of market acceptance and clinical utility of our product candidates, in particular, and cell therapy, in general;
- our ability to establish or maintain collaborations or strategic relationships or obtain additional funding;
- our competitive position;
- the scope of protection we and/or our licensors are able to establish and maintain for intellectual property rights covering our product candidates;
- developments and projections relating to our competitors and our industry;
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our ability to regain and maintain compliance with the continued listing requirements of the Nasdaq Capital Market;
- the period over which we estimate our existing cash and cash equivalents will be sufficient to fund our future operating expenses and capital expenditure requirements;
- the impact of laws and regulations; and
- the risks described in this prospectus supplement, in our Annual Report under Item 1A, “Risk Factors,” and our other filings with the SEC.

We have based these forward-looking statements largely on our current expectations and projections about our business, the industry in which we operate and financial trends that we believe may affect our business, financial condition, results of operations and prospects, and these forward-looking statements are not guarantees of future performance or development. These forward-looking statements speak only as of the date of this prospectus supplement and are subject to a number of risks, uncertainties and assumptions described in the section titled "Risk Factors" and elsewhere in this prospectus supplement. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events or otherwise.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus supplement, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and you are cautioned not to unduly rely upon these statements.

MARKET AND INDUSTRY DATA

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference in herein and therein include estimates regarding market and industry data. Unless otherwise indicated, information concerning our industry and the markets in which we operate, including our general expectations, market position, market opportunity, and market size, are based on our management's knowledge and experience in the markets in which we operate, together with currently available information obtained from various sources, including publicly available information, industry reports and publications, surveys, our customers, trade and business organizations, and other contacts in the markets in which we operate. Certain information is based on management estimates, which have been derived from third-party sources, as well as data from our internal research.

In presenting this information, we have made certain assumptions that we believe to be reasonable based on such data and other similar sources and on our knowledge of, and our experience to date in, the markets in which we operate. While we believe the estimated market and industry data included in this prospectus supplement and the accompanying prospectus is generally reliable, such information is inherently uncertain and imprecise. Market and industry data is subject to change and may be limited by the availability of raw data, the voluntary nature of the data gathering process, and other limitations inherent in any statistical survey of such data. In addition, projections, assumptions, and estimates of the future performance of the markets in which we operate are necessarily subject to uncertainty and risk due to a variety of factors, including those described in "*Risk Factors*" and "*Cautionary Note Regarding Forward-Looking Statements*." These and other factors could cause results to differ materially from those expressed in the estimates made by third parties and by us. Accordingly, you are cautioned not to place undue reliance on such market and industry data or any other such estimates.

The source of certain statistical data, estimates, and forecasts contained in this prospectus supplement and the accompanying prospectus are the following independent industry publications or reports:

- **"Degenerative Disc Disease Therapeutics Global Market Analysis, Insights and Forecast, 2022-2029"** Fortune Business Insights
- **"Global Regenerative Medicine Market 2022-2029"** Fortune Business Insights
- **"Global Multiple Sclerosis Drugs Market 2022-2029"** Fortune Business Insights; and
- **"Global Wound Care Market 2022-2029"** Fortune Business Insights.

The content of the above sources, except to the extent specifically set forth in this prospectus, does not constitute a portion of this prospectus supplement and the accompanying prospectus and are not incorporated herein and therein.

TRADEMARKS, SERVICE MARKS AND TRADENAMES

We own or otherwise have rights to the trademarks, including those mentioned in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein, used in conjunction with the operation of our business. This prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein include our own

trademarks, which are protected under applicable intellectual property laws, as well as trademarks, service marks and tradenames of other entities, which are the property of their respective owners. Solely for convenience, trademarks, trade names and service marks referred to in this prospectus may appear without the ®, ™ or SM symbols, but such references are not intended to indicate, in any way, that the applicable licensor will not assert, to the fullest extent under applicable law, its rights to these trademarks, service marks and tradenames. We do not intend our use or display of other entities' trademarks, service marks or tradenames to imply a relationship with, or endorsement or sponsorship of us by, any other entities.

USE OF PROCEEDS

The amount of proceeds from this offering will depend upon the number of shares of our Common Stock sold and the market price at which they are sold. There can be no assurance that we will be able to sell any shares under, or fully utilize, the Sales Agreement with Wainwright.

We intend to use the net proceeds from this offering, if any, for working capital and general corporate purposes.

The amount, timing and nature of specific expenditures of net proceeds from this offering will depend on a number of factors, including the timing, scope, progress and results of our development efforts and the timing and progress of any collaboration efforts. As of the date of this prospectus, we cannot specify with certainty all of the particular uses of the proceeds from this offering. Accordingly, we will retain broad discretion over the use of such proceeds.

DILUTION

If you invest in our Common Stock, your ownership interest will be diluted to the extent of the difference between the public offering price per share and the as-adjusted net tangible book value per share after this offering. Our net tangible book value of our Common Stock on March 31, 2026 was approximately \$2.6 million, or approximately \$0.7401 per share of our Common Stock. We calculate net tangible book value per share by dividing the net tangible book value, which is tangible assets less total liabilities, by the number of outstanding shares of our Common Stock.

After giving effect to the April Offering the issuance and sale by us of 1,028,788 shares of Common Stock, April Pre-Funded Warrants to purchase up to 1,243,940 shares of Common Stock, and April Warrants to purchase up to 2,272,728 shares of Common Stock, the exercise of the April Pre-Funded Warrants to purchase 1,243,940 shares of Common Stock and receipt of net proceeds by us of \$2.5 million, subsequent to March 31, 2026 (collectively, the “pro forma adjustments”), our pro forma net tangible book value was \$5.1 million or approximately \$0.9779 per share.

After giving further effect to the sale of 4,694,656 shares of our Common Stock pursuant to this prospectus supplement at an assumed public offering price of \$1.31 per share, the closing sale price of our Common Stock on Nasdaq on April 29, 2026, and after deducting commissions and estimated aggregate offering expenses payable by us, our pro forma as adjusted net tangible book value as of March 31, 2026 would have been \$11.1 million, or \$1.1168 per share of our Common Stock. This represents an immediate increase in the net tangible book value of \$0.1388 per share to our existing stockholders and an immediate dilution in net tangible book value of \$0.1932 per share to new investors. The following table illustrates this per share dilution:

Offering price per share	\$	1.3100
Historical net tangible book value per share as of March 31, 2026	\$	0.7401
Increase in net tangible book value per share after giving effect to the pro forma adjustments	\$	0.2379
Pro forma net tangible book value per share as of March 31, 2026	\$	0.9779
Increase in net tangible book value per share after giving effect to the offering	\$	0.1388
Pro forma as adjusted net tangible book value per share as of March 31, 2026	\$	1.1168
Dilution in net tangible book value per share to new investors	\$	0.1932

The table above assumes for illustrative purposes that an aggregate of 4,694,656 additional shares of our Common Stock are sold pursuant to the Sales Agreement with Wainwright at a price of \$1.31 per share, the closing sale price of our Common Stock on Nasdaq on April 29, 2026, for aggregate net proceeds of approximately \$6.0 million, after deducting commissions at a rate of 3.0% and estimated aggregate offering expenses payable by us. The shares sold pursuant to the Sales Agreement with Wainwright are being sold from time to time at various prices. The pro forma as adjusted information is illustrative only and will adjust based on the actual price to the public, the actual number of shares sold and other terms of the offering determined at the time shares of our Common Stock are sold pursuant to this prospectus.

The above discussion and table are based on 3,513,187 shares of our common stock outstanding as of March 31, 2026 plus the pro forma adjustments, and excludes (in each case below, giving effect to the 1-for-20 reverse stock split of our common stock effected on March 30, 2026):

- 285,812 shares of common stock issuable upon exercise of stock options outstanding under the FibroBiologics, Inc. 2022 Stock Plan;
- 339,188 shares of common stock reserved for issuance under our 2022 Stock Plan;
- 517 shares of common stock underlying warrants that were issued in connection with the issuance of certain shares of Series B-1 Preferred Stock;
- 125 shares of Common Stock issuable upon conversion of outstanding shares of Series C Preferred Stock,;
- 374,761 shares of common stock underlying the pre-funded warrants that were issued in the November 18 Offering pursuant to a securities purchase agreement, dated November 18, 2025, with a single investor, at an exercise price of \$0.0002 per share;

- 605,511 shares of common stock underlying the November 18 Warrants that were issued in a concurrent private placement to the November 18 Offering, at an exercise price of \$6.606 per share;
- 223,881 shares of common stock issuable upon exercise of the November 24 Warrants that were issued in a private placement concurrent to the November 24 Offering pursuant to a securities purchase agreement, dated November 24, 2025, with certain institutional investors, at an exercise price of \$6.70 per share;
- 15,672 shares of common stock issuable upon exercise of the warrants that were issued to the placement agent (or its designees) as compensation in connection with the November 24 Offering, at an exercise price of \$8.376 per share.
- 261,364 shares of common stock issuable upon exercise of the December Warrants that were issued in a private placement concurrent to the “December Offering pursuant to a securities purchase agreement, dated December 14, 2025, with certain institutional investors, at an exercise price of \$6.60 per share;
- 18,296 shares of common stock issuable upon exercise of the warrants that were issued to the placement agent (or its designees) as compensation in connection with the December Offering, at an exercise price of \$8.25 per share;
- 2,272,728 shares of common stock underlying the April Warrants, at an exercise price of \$1.32 per share; and
- 159,091 shares of common stock issuable upon exercise of the April Placement Agent Warrants, at an exercise price of \$1.65 per share.

To the extent that outstanding options or warrants are exercised, you will experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities may result in further dilution to our stockholders.

DIVIDEND POLICY

We have never declared or paid cash dividends on our Common Stock. We currently intend to retain all available funds and any future earnings to fund the development, commercialization and growth of our business, and therefore we do not anticipate declaring or paying any cash dividends on our Common Stock in the foreseeable future. Any future determination as to the declaration and payment of dividends, if any, will be at the discretion of our board of directors. Any such determination will also depend upon our business prospects, operating results, financial condition, capital requirements, general business conditions and other factors that our board of directors may deem relevant. Our future ability to pay cash dividends on our Common Stock may also be limited by the terms of any future debt securities or credit facility.

DESCRIPTION OF SECURITIES WE ARE OFFERING

We are offering up to \$6,150,000 of shares of our Common Stock. The material terms and provisions of our common stock are described under the caption “*Description of Capital Stock—Common Stock*” beginning on page 6 of the accompanying prospectus.

PLAN OF DISTRIBUTION

We entered into the Sales Agreement with Wainwright, pursuant to which we may issue and sell from time-to-time shares of our Common Stock having an aggregate offering price of up to the amount set forth on the cover page of this prospectus supplement, as supplemented from time to time, through or to Wainwright acting as sales agent or principal. Sales of the Common Stock, if any, will be made by any method permitted by law deemed to be an “at-the-market offering” as defined in Rule 415(a)(4) promulgated under the Securities Act, including sales made directly on or through Nasdaq, the trading market for our Common Stock, or any other existing trading market in the United States for our Common Stock, and sales made to or through a market maker other than on an exchange. If we and Wainwright agree on any method of distribution other than sales of shares of our Common Stock into Nasdaq or another existing trading market in the United States at market prices, we will file a further prospectus supplement providing all information about such offering as required by Rule 424(b) under the Securities Act.

Wainwright will offer our Common Stock at prevailing market prices subject to the terms and conditions of the Sales Agreement. We will designate the number of shares we desire to sell, the time period during which sales are requested to be made, any limitation on the number of shares that may be sold in one day and any minimum price below which sales may not be made. Subject to the terms and conditions of the Sales Agreement, Wainwright will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell on our behalf all of the shares of Common Stock requested to be sold by us. We or Wainwright may suspend the offering of the Common Stock being made through Wainwright under the Sales Agreement upon proper notice to the other party and pursuant to the terms of the Sales Agreement.

Settlement for sales of Common Stock will occur on the first trading day following the date on which any sales are made (or such shorter settlement cycle as may be in effect under the Exchange Act from time to time), or on some other date that is agreed upon by us and Wainwright in connection with a particular transaction, in return for payment of the net proceeds to us. Sales of our Common Stock as contemplated in this prospectus will be settled through the facilities of The Depository Trust Company or by such other means as we and Wainwright may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

We will pay Wainwright a cash commission equal to 3.0% of the gross sales price per share of Common Stock sold by Wainwright under the Sales Agreement. Because there is no minimum offering amount required as a condition to this offering, the actual total offering amount, sales commissions and net proceeds to us, if any, are not determinable at this time. Pursuant to the terms of the Sales Agreement, we have agreed to reimburse Wainwright up to \$100,000 for the reasonable fees and expenses incurred by its legal counsel (excluding any periodic due diligence fees) incurred in connection with entering into the transactions contemplated by the Sales Agreement. We have also agreed to reimburse Wainwright (i) \$5,000 per due diligence update session in connection with each filing of our Annual Report on Form 10-K or if a new registration statement, prospectus or prospectus or an amendment to the Sales Agreement is filed and/or entered into, as applicable and (ii) \$3,500 per due diligence update session in connection with each filing of our Quarterly Reports on Form 10-Q, plus any incidental expense incurred by Wainwright in connection therewith. We estimate that the total expenses of the offering payable by us, excluding commissions payable to Wainwright under the Sales Agreement, will be approximately \$150,000, assuming we sell the entire amount offered pursuant to this prospectus supplement and the accompanying prospectus. We will disclose in our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q, as applicable, the number of shares of our Common Stock sold through Wainwright under the Sales Agreement, the net proceeds to us and the compensation paid by us with respect to sales under the Sales Agreement during the relevant quarter.

Pursuant to the engagement letter, dated as of November 10, 2025, as amended, between us and Wainwright, if from the date hereof until the 9-month anniversary following consummation sales pursuant to the Sales Agreement (subject to FINRA Rule 5110(g)(6)(A)), we or any of our subsidiaries (a) decides to finance or refinance any indebtedness, Wainwright (or any affiliate designated by Wainwright) shall have the right to act as sole book-runner, sole manager, sole placement agent or sole agent with respect to such financing or refinancing; or (b) decides to raise funds by means of a public offering (including ATMs) or a private placement or any other capital-raising financing of equity, equity-linked or debt securities, Wainwright (or any affiliate designated by Wainwright) shall have the right to act as sole book-running manager, sole underwriter or sole placement agent for such financing. If Wainwright or one of its affiliates decides to accept any such engagement, the agreement governing such engagement will contain, among other things, provisions for customary fees for transactions of similar size and nature and the provisions of the Sales Agreement, including indemnification, which are appropriate to such a transaction.

In connection with the sales of Common Stock on our behalf, Wainwright will be deemed to be an “underwriter” within the meaning of the Securities Act, and the compensation paid to Wainwright will be deemed to be underwriting commissions or discounts. We have agreed in the Sales Agreement to provide indemnification and contribution to Wainwright against certain liabilities, including liabilities under the Securities Act.

The offering of our shares of Common Stock pursuant to the Sales Agreement will terminate upon termination of the Sales Agreement or as otherwise permitted therein. This offering of our shares of Common Stock pursuant to this prospectus supplement and the accompanying prospectus will terminate upon the earlier of (a) the sale of our Common Stock pursuant to this prospectus supplement and the accompanying prospectus having an aggregate sales price of \$6,150,000, or (b) the termination by us or Wainwright of the Sales Agreement pursuant to its terms. We or Wainwright may terminate the Sales Agreement at any time pursuant to the terms of the Sales Agreement.

To the extent required by Regulation M, Wainwright will not engage in any market making activities involving our shares of Common Stock while the offering is ongoing under this prospectus supplement.

From time to time, Wainwright and its affiliates have and may provide in the future various advisory, investment and commercial banking and other services to us and our affiliates in the ordinary course of business, for which they have received and may continue to receive customary fees and commissions. In addition, in the ordinary course of its various business activities, Wainwright and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (which may include bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. Wainwright or its affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments. Wainwright has acted as our exclusive placement agent for the following transactions: (i) a November 2025 registered direct offering and concurrent private placement, (ii) a December 2025 registered direct offering and concurrent private placement, and (iii) a April 2026 public offering, for each of which it received as compensation cash fees and placement agent warrants. Except as disclosed in this prospectus supplement, we have no present arrangements with Wainwright for any further services.

This summary of the material provisions of the Sales Agreement does not purport to be a complete statement of its terms and conditions. A copy of the Sales Agreement was filed as Exhibit 1.1 to our Current Report on Form 8-K filed with the SEC on May 1, 2026, and is incorporated by reference into this prospectus supplement and the accompanying prospectus..

This prospectus supplement and accompanying prospectus in electronic format may be made available on a website maintained by Wainwright and Wainwright may distribute this prospectus electronically.

Our transfer agent and registrar for our shares of Common Stock is VStock Transfer, LLC, with its business address at 18 Lafayette Place, Woodmere, NY 11598.

Our Common Stock is traded on the Nasdaq Capital Market under the symbol "FBLG."

LEGAL MATTERS

Certain legal matters will be passed upon for us by Sichenzia Ross Ference Carmel LLP, New York, New York. Haynes and Boone, LLP, New York, New York has served as counsel for Wainwright in connection with certain legal matters related to this offering.

EXPERTS

The financial statements of FibroBiologics, Inc. as of and for the years ended December 31, 2025 and 2024, have been audited by Withum Smith+Brown, PC, an independent registered public accounting firm, as stated in their report incorporated by reference herein (which report includes an explanatory paragraph about the existence of substantial doubt concerning the Company's ability to continue as a going concern). Such audited financial statements have been so included in reliance upon the report of such firm given upon their authority as experts in accounting and auditing. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the report of Withum Smith+Brown, PC pertaining to such financial statements (to the extent covered by consents filed with the SEC) given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We are subject to the informational reporting requirements of the Exchange Act. We file reports, proxy statements and other information with the SEC. Our SEC filings are available over the internet at the SEC's website at <http://www.sec.gov>. We make available, free of charge, on our website at www.fibrobiologics.com, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports and statements as soon as reasonably practicable after they are filed with the SEC. The contents of our website are not part of this prospectus supplement and the accompanying prospectus, and the reference to our website does not constitute incorporation by reference into this prospectus supplement and the accompanying prospectus of the information contained on or through that site, other than documents we file with the SEC that are specifically incorporated by reference into this prospectus supplement and the accompanying prospectus. Our website address is included in this prospectus supplement and the accompanying prospectus as an inactive textual reference only.

This prospectus supplement and the accompanying prospectus are part of a registration statement that we filed with the SEC. As permitted by SEC rules, this prospectus supplement and the accompanying prospectus form a part of the registration statement, but do not contain all of the information that is included in the registration statement. The registration statement contains more information regarding us and our securities, including certain exhibits. You can obtain a copy of the registration statement from the SEC's website.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

This prospectus supplement is part of a registration statement on Form S-3 filed by us with the SEC. This prospectus supplement does not contain all of the information set forth in the registration statement, certain parts of which are omitted in accordance with the rules and regulations of the SEC. For further information about us and the securities offered by this prospectus supplement, we refer you to the registration statement and its exhibits and schedules which may be obtained as described herein.

The SEC allows us to “incorporate by reference” information into this prospectus supplement. This means that we can disclose important information about us and our financial condition to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be part of this prospectus supplement. This prospectus supplement incorporates by reference the documents listed below that we have previously filed with the SEC:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2025, filed with the SEC on [February 24, 2026](#), as amended on Form 10-K/A, filed with the SEC on [March 13, 2026](#);
- our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2026, filed with the SEC on [April 30, 2026](#);
- our Current Reports on Form 8-K filed with the SEC on [January 2, 2026](#), [February 6, 2026](#), [February 23, 2026](#), [March 6, 2026](#), [April 2, 2026](#), [April 3, 2026](#), [April 9, 2026](#) (as amended on Form 8-K/A filed with the SEC on [April 9, 2026](#)), [April 17, 2026](#), [April 20, 2026](#) and [May 1, 2026](#) (except, in each case, any information, including exhibits, furnished and not filed with the SEC); and
- the description of our Common Stock set forth in the registration statement on [Form 8-A](#) filed on January 24, 2024, as updated by [Exhibit 4.2](#) to our Annual Report on Form 10-K, filed on February 24, 2026, and all amendments and reports filed for the purpose of updating that description.

We also incorporate by reference into this prospectus supplement all documents filed by us with the SEC pursuant to Sections 12(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of any offering of securities made by this prospectus supplement, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement. Nothing in this prospectus supplement shall be deemed to incorporate information furnished but not filed with the SEC (including without limitation, information furnished under Item 2.02 or Item 7.01 of Form 8-K, and any exhibits relating to such information).

Any statement contained in this prospectus supplement and the accompanying prospectus or in a document incorporated or deemed to be incorporated by reference in this prospectus supplement and the accompanying prospectus shall be deemed to be modified or superseded for purposes of this prospectus supplement and the accompanying prospectus to the extent that a statement contained herein or therein or in any other subsequently filed document which also is or is deemed to be incorporated by reference modifies or supersedes the statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement and the accompanying prospectus.

You may request a copy of the filings incorporated herein by reference, including exhibits to such documents that are specifically incorporated by reference, at no cost, by writing or calling us at the following address or telephone number:

FibroBiologics, Inc.
9350 Kirby Drive
Suite 300
Houston, Texas 77054
(281) 671-5150

Statements contained in this prospectus supplement and the accompanying prospectus as to the contents of any contract or other documents are not necessarily complete, and in each instance investors are referred to the copy of the contract or other document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference and the exhibits and schedules thereto.

\$50,000,000



FibroBiologics, Inc.

**Common Stock
Preferred Stock
Depository Shares
Warrants
Subscription Rights
Contingent Value Rights
Debt Securities
Purchase Contracts
Units**

We may offer and sell from time to time our common stock, preferred stock, depository shares, warrants, subscription rights, contingent value rights, debt securities and purchase contracts, as well as units that include any of these securities. We may sell any combination of these securities in one or more offerings with an aggregate initial offering price of \$50,000,000 or the equivalent amount in other currencies or currency units.

We will provide the specific terms of the securities to be offered in one or more supplements to this prospectus. You should read this prospectus and the applicable prospectus supplement carefully before you invest in our securities. This prospectus may not be used to offer and sell our securities unless accompanied by a prospectus supplement describing the method and terms of the offering of those offered securities.

We may sell the securities directly or to or through underwriters or dealers, and also to other purchasers or through agents. The names of any underwriters or agents that are included in a sale of securities to you, and any applicable commissions or discounts, will be stated in an accompanying prospectus supplement.

Investing in any of our securities involves a high degree of risk. See the “Risk Factors” section beginning on page 3 of this prospectus for the risks and uncertainties you should consider before investing in our securities.

Our common stock is listed on the Nasdaq Global Market under the symbol “FBLG.” On January 31, 2025, the closing price of our common stock was \$1.61 per share. None of the other securities that we may offer under this prospectus are currently publicly traded.

The aggregate market value of our outstanding common stock held by non-affiliates is \$75.6 million based on 36,408,396 shares of outstanding common stock, of which 30,367,274 shares are held by non-affiliates, and a per share price of \$2.49 which was the closing sale price of our common stock as quoted on the Nadsaq Global Market on December 6, 2024. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell securities registered on the registration statement, of which this prospectus forms a part, in a public primary offering with a value exceeding more than one-third of our public float in any 12-month period if, and for so long as, our public float is below \$75 million at the date of measurement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Prospectus Dated February 10, 2025

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration or continuous offering process. Under this shelf process, we may from time to time sell any combination of the securities described in this prospectus in one or more offerings up to an aggregate initial offering price of \$50,000,000 or the equivalent amount in other currencies or currency units.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with additional information under the heading “Where You Can Find Additional Information” and “Incorporation of Certain Documents By Reference.”

We have not authorized anyone to provide you with different information from the information contained or incorporated by reference in this prospectus and in any prospectus supplement or in any free writing prospectus that we may provide you. You should not assume that the information contained in this prospectus, any prospectus supplement, any document incorporated by reference or any free writing prospectus is accurate as of any date, other than the date mentioned on the cover page of these documents. We are not making offers to sell the securities in any jurisdiction in which an offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation.

Unless otherwise indicated or the context otherwise requires, all references in this prospectus to “we,” “us,” “our,” the “Company,” “FibroBiologics” and similar terms refer to FibroBiologics, Inc.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We are subject to the informational reporting requirements of the Securities Exchange Act of 1934, or the Exchange Act. We file reports, proxy statements and other information with the SEC. Our SEC filings are available over the internet at the SEC’s website at <http://www.sec.gov>. We make available, free of charge, on our website at www.fibrobiologics.com, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports and statements as soon as reasonably practicable after they are filed with the SEC. The contents of our website are not part of this prospectus, and the reference to our website does not constitute incorporation by reference into this prospectus of the information contained on or through that site, other than documents we file with the SEC that are specifically incorporated by reference into this prospectus. Our website address is included in this prospectus as an inactive textual reference only.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” into this prospectus the information in documents we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. Any statement contained in any document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in or omitted from this prospectus or any accompanying prospectus supplement, or in any other subsequently filed document, which also is or 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 prospectus.

We incorporate by reference the documents listed below and any future documents that we file with the SEC (excluding any portion of such documents that are furnished and not filed with the SEC) under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (1) after the date of the initial filing of the registration statement of which this prospectus forms a part prior to the effectiveness of the registration statement and (2) after the date of this prospectus until the offering of the securities is terminated:

- our Annual Report on Form [10-K](#) for the fiscal year ended December 31, 2023;
- those portions of our Definitive Proxy Statement on [Schedule 14A](#) that was filed on July 8, 2024 that address the disclosure requirements of Part III of Form 10-K;

- our Quarterly Reports on Form 10-Q for the quarterly periods ended [March 31, 2024](#), [June 30, 2024](#), and [September 30, 2024](#);
- our Current Reports on Form 8-K, filed with the SEC on [February 2, 2024](#), [February 6, 2024](#), [February 8, 2024](#), [February 14, 2024](#), [February 20, 2024](#), [April 26, 2024](#), [June 27, 2024](#), [August 27, 2024](#), [August 28, 2024](#), [September 24, 2024](#), [October 29, 2024](#), [December 20, 2024](#), [December 23, 2024](#), [December 31, 2024](#) and [January 24, 2025](#) (except, in each case, any information, including exhibits, furnished and not filed with the SEC); and
- the description of our common stock set forth in the registration statement on [Form 8-A](#) filed on January 24, 2024, as updated by [Exhibit 4.2](#) to our Annual Report on Form 10-K, filed on February 29, 2024, and all amendments and reports filed for the purpose of updating that description.

We will not, however, incorporate by reference in this prospectus any documents or portions thereof that are not deemed “filed” with the SEC, including any information furnished pursuant to Item 2.02 or Item 7.01 of our current reports on Form 8-K unless, and except to the extent, specified in such current reports.

We will provide you with a copy of any of these filings (other than an exhibit to these filings, unless the exhibit is specifically incorporated by reference into the filing requested) at no cost, if you submit a request to us by writing or telephoning us at the following address and telephone number:

FibroBiologics, Inc.
455 E. Medical Center Blvd.
Suite 300
Houston, Texas 77598
(281) 671-5150

THE COMPANY

We are a clinical-stage biotechnology company focused on developing and commercializing fibroblast-based therapies for patients suffering from chronic diseases with significant unmet medical needs, including wound healing, multiple sclerosis (MS), degenerative disc disease, psoriasis and certain cancers, and potential human longevity applications including thymic involution reversal. At present, our novel manufacturing process entails collecting excess tissue from surgical procedures and using the allogeneic fibroblasts to grow a cell bank for use in our procedures. Our most advanced product candidates are CYWC628, CYMS101 and CybroCell™.

We were formed in April 2021 as a Texas limited liability company under the name FibroBiologics, LLC, and converted to a Delaware corporation in December 2021 under the name FibroBiologics, Inc. On April 12, 2023, we changed our name to FibroBiologics, Inc. Our principal executive offices are located at 455 E. Medical Center Blvd., Suite 300, Houston, Texas 77598. Our telephone number is (281) 671-5150 and our website address is www.fibrobiologics.com. Information contained on or that can be accessed through our website is neither a part of nor incorporated by reference into this prospectus, and you should not consider information on our website to be part of this prospectus. Our website address is included in this prospectus as an inactive textual reference only.

RISK FACTORS

An investment in our securities involves a high degree of risk. Before you decide to invest in our securities, you should carefully consider the risks set forth under the section titled “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2023, and in our Quarterly Report on Form 10-Q for the three months ended September 30, 2024, both of which are incorporated by reference herein and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The occurrence of one or more of the events or circumstances described in such risk factors, alone or in combination with other events or circumstances, may have a material adverse effect on our business, reputation, revenue, financial condition, results of operations and future prospects, in which event you could lose all or part of your investment.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that can involve substantial risks and uncertainties. All statements other than

statements of historical facts contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy, prospective products, product approvals, research and development costs, future revenue, timing and likelihood of success, plans and objectives of management for future operations, future results of anticipated products and prospects, plans and objectives of management are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “anticipate,” “believe,” “contemplate,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “target,” “will,” or “would” or the negative of these terms or other similar expressions, although not all forward-looking statements contain these words. Forward-looking statements contained in this prospectus include, but are not limited to, statements about:

- the timing, progress and results of preclinical studies and clinical trials for our current and future product candidates, including statements regarding the timing of initiation and completion of studies or trials and related preparatory work, the period during which the results of the trials will become available and our research and development programs;
- the timing, scope or likelihood of regulatory submissions, filings, and approvals, including final regulatory approval of our product candidates;
- our ability to develop and advance product candidates into, and successfully complete, clinical trials;
- our expectations regarding the size of the patient populations for our product candidates, if approved for commercial use;
- the implementation of our business model and our strategic plans for our business, product candidates and technology;
- our commercialization, marketing and manufacturing capabilities and strategy;
- the pricing and reimbursement of our product candidates, if approved;
- the rate and degree of market acceptance and clinical utility of our product candidates, in particular, and cell therapy, in general;
- our ability to establish or maintain collaborations or strategic relationships or obtain additional funding;
- our competitive position;
- the scope of protection we and/or our licensors are able to establish and maintain for intellectual property rights covering our product candidates;
- developments and projections relating to our competitors and our industry;
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- the period over which we estimate our existing cash and cash equivalents will be sufficient to fund our future operating expenses and capital expenditure requirements;
- the impact of laws and regulations; and
- the risks described in our Annual Report on Form 10-K for the year ended December 31, 2023, under Item 1A, “Risk Factors,” and our other filings with the SEC.

We have based these forward-looking statements largely on our current expectations and projections about our business, the industry in which we operate and financial trends that we believe may affect our business, financial condition, results of operations and prospects, and these forward-looking statements are not guarantees of future performance or development. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of risks, uncertainties and assumptions described in the section titled

“Risk Factors” and elsewhere in this prospectus. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events or otherwise.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and you are cautioned not to unduly rely upon these statements.

USE OF PROCEEDS

Unless we inform you otherwise in the applicable prospectus supplement, we expect to use the net proceeds from the sale of securities for general corporate purposes. Pending any specific application, we may initially invest funds in U.S. government obligations.

DESCRIPTION OF CAPITAL STOCK

Authorized Capital Stock

Our amended and restated certificate of incorporation authorizes us to issue 110,000,000 shares of capital stock, which may consist of: (i) 100,000,000 shares of common stock, par value \$0.00001 per share, and (ii) 10,000,000 shares of preferred stock, par value \$0.00001 per share.

Common Stock

This section describes the general terms and provisions of our common stock. For more detailed information, you should refer to our amended and restated certificate of incorporation and amended and restated bylaws, copies of which have been filed with the SEC. These documents are also incorporated by reference into the registration statement of which this prospectus forms a part.

Our amended and restated certificate of incorporation provides that:

- holders of common stock have voting rights for the election of our directors and all other matters requiring stockholder action, except with respect to amendments to our certificate of incorporation that alter or change the powers, preferences, rights or other terms of any outstanding preferred stock if the holders of such affected series of preferred stock are entitled to vote on such an amendment;
- holders of common stock are entitled to one vote per share on matters to be voted on by stockholders and are also entitled to receive such dividends, if any, as may be declared from time to time by our board of directors in its discretion out of funds legally available therefor;
- the payment of dividends, if any, on the common stock will be subject to the prior payment of dividends on any outstanding preferred stock;
- upon our liquidation or dissolution, the holders of common stock will be entitled to receive pro rata all assets remaining available for distribution to stockholders after payment of all liabilities and provision for the liquidation of any shares of preferred stock outstanding at that time; and
- our stockholders have no conversion, preemptive or other subscription rights and there are no sinking fund or redemption provisions applicable to the common stock.

Preferred Stock

This section describes the general terms and provisions of our preferred stock. For more detailed information, you should refer to our amended and restated certificate of incorporation and amended and restated bylaws, copies of which have been filed with the SEC.

These documents are also incorporated by reference into the registration statement of which this prospectus forms a part.

Our amended and restated certificate of incorporation provides that shares of preferred stock may be issued from time to time in one or more series. Our board of directors is authorized to fix the voting rights, if any, designations, powers, preferences, the relative, participating, optional or other special rights, if any, and any qualifications, limitations and restrictions thereof, applicable to the shares of each series. Our board of directors is able to, without stockholder approval, issue preferred stock with voting and other rights that could adversely affect the voting power and other rights of the holders of the common stock and could have anti-takeover effects. The ability of our board of directors to issue preferred stock without stockholder approval could have the effect of delaying, deferring or preventing a change of our control or the removal of our existing management.

Series C Preferred Stock

There is currently one series of designated preferred stock, being the Series C Preferred Stock, 2,500 total shares of which are authorized and all of which 2,500 authorized shares of Series C Preferred Stock are issued, outstanding and held by Pete O'Heeron, our founder, Chief Executive Officer and Chairperson of our board of directors. The outstanding shares of Series C Preferred Stock are fully paid and nonassessable.

The Series C Preferred Stock rank senior to our common stock upon our liquidation, dissolution, winding up or otherwise.

The Series C Preferred Stock is entitled to vote on any matter to be voted on by our stockholders, in each case voting together with the holders of our common stock as a single class, and each share of Series C Preferred Stock is entitled to 13,000 votes. The Series C Preferred Stock is entitled to receive the same prior notice of any meeting of stockholders as provided to our common stockholders.

The Series C Preferred Stock is not entitled to any dividend, whether payable in cash, stock or property.

Subject to the superior rights of other, then outstanding, classes or series of preferred stock, in the event of any liquidation, dissolution or winding up of our company, the Series C Preferred Stock shall be entitled to receive, prior and in preference to any distribution in such liquidation, dissolution or winding up of any of our assets to the holders of our common stock, a liquidation preference of \$18.00 per share (subject to appropriate adjustment in the event of any stock split, combination or other similar recapitalization).

The Series C Preferred Stock may be converted at any time as follows:

- At the option of the holder, a share of Series C Preferred Stock may be converted into one share of our common stock; and
- Upon the election of the holders of a majority of the then outstanding shares of Series C Preferred Stock, all outstanding shares of Series C Preferred Stock may be converted into an equal number of shares of our common stock, on a one-for-one basis.

In addition, the Series C Preferred Stock is subject to a mandatory conversion upon any transfer of the Series C Preferred Stock. Each share of Series C Preferred Stock shall automatically convert, without the payment of additional consideration by or to the holder thereof, into one fully paid and non-assessable share of our common stock, upon any transfer of any share of Series C Preferred Stock, whether or not for value. Any shares of Series C Preferred Stock converted as described above must be retired and cancelled and may not be reissued as shares of such series.

For as long as the Series C Preferred Stock remain outstanding, the aggregate number of shares of Series C Preferred Stock then outstanding, shall be proportionately adjusted for any increase or decrease in the number of issued shares of our common stock resulting from a subdivision or combination of our common stock or other similar recapitalization, in each case effected without our receipt of consideration.

The Series C Preferred Stock is subject to an irrevocable proxy issued by Pete O'Heeron, the holder of all of the Series C Preferred Stock, in favor and for the benefit of, our board of directors, granting our board of directors the irrevocable proxy, for as long as the Series C Preferred Stock remains outstanding, to vote all of the Series C Preferred Stock on all matters on which the Series C Preferred Stock are entitled to vote, in any manner that our board of directors may determine in its sole and absolute discretion; provided, however, that such irrevocable proxy shall not, without the written consent of Pete O'Heeron, permit our board of directors to vote the Series C Preferred Stock with respect to any proposal to amend, delete or waive any rights of Pete O'Heeron with respect to the Series C Preferred Stock as set forth in our amended and restated certificate of incorporation. In light of the superior voting rights associated with the Series C Preferred Stock, the irrevocable proxy is intended to ensure that such superior voting rights are utilized in our best interest and to

avoid or mitigate conflicts that may arise in the future for Pete O’Heeron as an individual stockholder employee.

Anti-Takeover Effects of our Certificate of Incorporation, Bylaws and Delaware Law

Our amended and restated certificate of incorporation and amended and restated bylaws include a number of provisions that may have the effect of delaying, deferring or preventing another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

Classified Board

Our amended and restated certificate of incorporation requires our board of directors to be divided into three classes serving staggered three-year terms, with one class elected each year. The classification of directors has the effect of making it more difficult for stockholders to change the composition of our board of directors.

Stockholder Actions by Written Consent

Our amended and restated certificate of incorporation requires that, any action required or permitted to be taken by our stockholders must be effected at a duly-called annual or special meeting of our stockholders and may not be effected by written consent in lieu of a meeting.

Advance Notice Requirements

Our amended and restated bylaws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures specify that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken, and define what is considered timely. Our amended and restated bylaws specify the requirements as to form and content of all stockholder notices. These requirements may preclude stockholders from bringing matters before the stockholders at an annual or special meeting.

Director Removal and Vacancies

Our amended and restated certificate of incorporation requires that, a member of our board of directors or our entire board may only be removed for cause, and then only by the affirmative vote of the holders of at least 66 2/3% in voting power of our stock entitled to vote on such removal. In addition, our amended and restated certificate of incorporation requires that, any newly created directorship that results from an increase in the number of directors or any vacancy on our board of directors, must be filled solely by the affirmative vote of a majority of the total number of directors then in office, even if less than a quorum, or by a sole remaining director and may not be filled by the stockholders.

Supermajority Voting Requirements

Our amended and restated certificate of incorporation requires the affirmative vote of the holders of at least 66 2/3% in voting power of our stock entitled to vote thereon to (i) amend, alter or repeal our bylaws and adopt new bylaws or (ii) to amend, alter, change or repeal, or adopt any provision inconsistent with, certain provisions of our certificate of incorporation, including the provisions relating to the requirement to have a classified board, the provisions relating to the removal of directors, the provision precluding stockholder action by written consent and the choice of forum provision in our amended and restated certificate of incorporation (as explained below).

Undesignated Preferred Stock

Our amended and restated certificate of incorporation provides for authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our amended and restated certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued

shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in our control.

Exclusive Forum

Our amended and restated certificate of incorporation provides that, unless we consent in writing to the selection of an alternative forum, the (i) Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, the federal district court for the District of Delaware) shall, to the fullest extent permitted by law, be the sole and exclusive forum for (a) any derivative action or proceeding brought on our behalf, (b) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (c) any action arising pursuant to any provision of the DGCL, our certificate of incorporation or our bylaws or (d) any action asserting a claim governed by the internal affairs doctrine and (ii) to the fullest extent permitted by law, the federal district courts of the United States of America shall be the exclusive forum for the resolution of any complaint asserting a cause or causes of action arising under the Securities Act, including all causes of action asserted against any defendant to such complaint. The foregoing provision would not preclude stockholders that assert claims under the Exchange Act from bringing such claims in federal court, to the extent that the Exchange Act confers exclusive federal jurisdiction over such claims, subject to applicable law. Our choice of forum provision may impose additional litigation costs on stockholders in pursuing claims and may limit a stockholder's ability to bring a claim in a judicial forum that it believes to be favorable for disputes with us or any of our directors, officers or other employees, which may discourage lawsuits with respect to such claims.

Limitation of Liability and Indemnification of Directors and Officers

Our amended and restated certificate of incorporation provides that our directors and officers will be indemnified by us to the fullest extent authorized by Delaware law.

These provisions may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duty. These provisions also may have the effect of reducing the likelihood of derivative litigation against directors and officers, even though such an action, if successful, might otherwise benefit us and our stockholders. Furthermore, a stockholder's investment may be adversely affected to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions. We believe that these provisions and insurance are necessary to attract and retain talented and experienced directors and officers. In addition, we entered into separate indemnification agreements with each of our directors and executive officers.

Section 203 of the DGCL

As a Delaware corporation, we are subject to the provisions of Section 203 of the DGCL. This statute prevents certain Delaware corporations, under certain circumstances, from engaging in a "business combination" with an "interested stockholder." In general, Section 203 defines an "interested stockholder" as an entity or person who, together with the person's affiliates and associates, beneficially owns 15% or more of the outstanding voting stock of the corporation.

A "business combination" includes a merger or sale of more than 10% of our assets. However, the above provisions of Section 203 of the DGCL do not apply if:

- the business combination takes place more than three years after the interested stockholder became an "interested stockholder;"
- our board of directors approves the transaction that made the stockholder an "interested stockholder" prior to the date of the transaction;
- after the completion of the transaction that resulted in the stockholder becoming an interested stockholder, that stockholder owned at least 85% of our voting stock outstanding, other than statutorily excluded shares of common stock; or
- on or subsequent to the date of the transaction, the business combination is approved by our board of directors and authorized at a meeting of our stockholders, and not by written consent, by an affirmative vote of at least two-thirds of the outstanding voting stock not owned by the interested stockholder.

Listing

Our common stock commenced trading on The Nasdaq Global Market under the symbol “FBLG” on January 31, 2024.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is VStock Transfer LLC. The transfer agent and registrar’s address is 18 Lafayette Place, Woodmere, NY 11598.

DESCRIPTION OF DEPOSITARY SHARES

We may offer depositary shares representing fractional shares of our preferred stock of any series. The following description sets forth certain general terms and provisions of the depositary shares that we may offer pursuant to this prospectus. The particular terms of the depositary shares, including the fraction of a share of preferred stock that such depositary share will represent, and the extent, if any, to which the general terms and provisions may apply to the depositary shares so offered, will be described in the applicable prospectus supplement.

The shares of preferred stock represented by depositary shares will be deposited under a depositary agreement between us and a bank or trust company that meets certain requirements and is selected by us, which we refer to as the “bank depositary.” Each owner of a depositary share will be entitled to all the rights and preferences of the shares of preferred stock represented by the depositary share. The depositary shares will be evidenced by depositary receipts issued pursuant to the depositary agreement. Depositary receipts will be distributed to those persons purchasing the fractional shares of preferred stock in accordance with the terms of the offering. The deposit agreement will also contain provisions relating to the manner in which any subscription or similar rights we offer to holders of the preferred stock will be made available to the holders of depositary shares.

The following description is a general summary of some common provisions of a depositary agreement and the related depositary receipts. The description below and in any prospectus supplement does not include all of the terms of the depositary agreement and the related depositary receipts. Copies of the form of depositary agreement and the depositary receipts relating to any particular issue of depositary shares will be filed with the SEC each time we issue depositary shares, and you should read those documents for provisions that may be important to you. For more information on how you can obtain copies of the forms of the depositary agreement and the related depositary receipts, see “Where You Can Find Additional Information.”

Dividends and Other Distributions

If we pay a cash distribution or dividend on a series of preferred stock represented by depositary shares, the bank depositary will distribute these dividends to the record holders of these depositary shares. If the distributions are in property other than cash, the bank depositary will distribute the property to the record holders of the depositary shares. However, if the bank depositary determines that it is not feasible to make the distribution of property, the bank depositary may, with our approval, sell this property and distribute the net proceeds from this sale to the record holders of the depositary shares.

Redemption of Depositary Shares

If we redeem a series of preferred stock represented by depositary shares, the bank depositary will redeem the depositary shares from the proceeds received by the bank depositary in connection with the redemption. The redemption price per depositary share will equal the applicable fraction of the redemption price per share of the preferred stock. If fewer than all the depositary shares are redeemed, the depositary shares to be redeemed will be selected by lot or pro rata as the bank depositary may determine.

Voting the Preferred Stock

Upon receipt of notice of any meeting at which the holders of the preferred stock represented by depositary shares are entitled to vote, the bank depositary will mail the notice to the record holders of the depositary shares relating to the preferred stock. Each record holder of these depositary shares on the record date (which will be the same date as the record date for the preferred stock) may instruct the bank depositary as to how to vote the preferred stock represented by this holder’s depositary shares. The bank depositary will endeavor, insofar as practicable, to vote the amount of the preferred stock represented by such depositary shares in accordance with these instructions, and we will take all action which the bank depositary deems necessary in order to enable the bank depositary to do so. The bank depositary will abstain from voting shares of the preferred stock to the extent it does not receive specific instructions from the

holders of depositary shares representing this preferred stock.

Amendment and Termination of the Depositary Agreement

The form of depositary receipt evidencing the depositary shares and any provision of the depositary agreement may be amended by agreement between the bank depositary and us. However, any amendment that materially and adversely alters the rights of the holders of depositary shares will not be effective unless this amendment has been approved by the holders of at least a majority of the depositary shares then outstanding. The depositary agreement may be terminated by the bank depositary or us only if:

- all outstanding depositary shares have been redeemed; or
- there has been a final distribution in respect of the preferred stock in connection with any liquidation, dissolution or winding-up of the Company and this distribution has been distributed to the holders of depositary receipts.

Charges of Bank Depositary

We will pay all transfer and other taxes and governmental charges arising solely from the existence of the depositary arrangements. We will pay charges of the bank depositary in connection with the initial deposit of the preferred stock and any redemption of the preferred stock. Holders of depositary receipts will pay other transfer, tax and governmental charges and any other charges, including a fee for the withdrawal of shares of preferred stock upon surrender of depositary receipts, as are expressly provided in the depositary agreement to be for their accounts.

Withdrawal of Preferred Stock

Except as may be provided otherwise in the applicable prospectus supplement, upon surrender of depositary receipts at the principal office of the bank depositary, subject to the terms of the depositary agreement, the owner of the depositary shares may demand delivery of the number of whole shares of preferred stock and all money and other property, if any, represented by those depositary shares. Fractional shares of preferred stock will not be issued. If the depositary receipts delivered by the holder evidence a number of depositary shares in excess of the number of depositary shares representing the number of whole shares of preferred stock to be withdrawn, the bank depositary will deliver to this holder at the same time a new depositary receipt evidencing the excess number of depositary shares. Holders of preferred stock thus withdrawn may not thereafter deposit those shares under the depositary agreement or receive depositary receipts evidencing depositary shares therefor.

Miscellaneous

The bank depositary will forward to holders of depositary receipts all reports and communications from us that are delivered to the bank depositary and that we are required to furnish to the holders of preferred stock.

Neither the bank depositary nor we will be liable if we are prevented or delayed by law or any circumstance beyond our control in performing our obligations under the depositary agreement. The obligations of the bank depositary and us under the depositary agreement will be limited to performance in good faith of our duties thereunder, and we will not be obligated to prosecute or defend any legal proceeding in respect of any depositary shares or shares of preferred stock unless satisfactory indemnity is furnished. We may rely upon written advice of counsel or accountants, or upon information provided by persons presenting shares of preferred stock for deposit, holders of depositary receipts or other persons believed to be competent and on documents believed to be genuine.

Resignation and Removal of Bank Depositary

The bank depositary may resign at any time by delivering to us notice of its election to do so, and we may at any time remove the bank depositary. Any such resignation or removal will take effect upon the appointment of a successor bank depositary and the successor's acceptance of this appointment. The successor bank depositary must be appointed within 60 days after delivery of the notice of resignation or removal and must be a bank or trust company meeting the requirements of the depositary agreement.

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of common stock, preferred stock, depositary shares, contingent value rights or debt securities. The following description sets forth certain general terms and provisions of the warrants that we may offer pursuant to this prospectus.

The particular terms of the warrants and the extent, if any, to which the general terms and provisions may apply to the warrants so offered will be described in the applicable prospectus supplement.

Warrants may be issued independently or together with other securities and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the warrants and will not have any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants.

A copy of the forms of the warrant agreement and the warrant certificate relating to any particular issue of warrants will be filed with the SEC each time we issue warrants, and you should read those documents for provisions that may be important to you. For more information on how you can obtain copies of the forms of the warrant agreement and the related warrant certificate, see “Where You Can Find Additional Information.”

Debt Warrants

The prospectus supplement relating to a particular issue of warrants to issue debt securities will describe the terms of those warrants, including the following:

- the title of the warrants;
- the offering price for the warrants, if any;
- the aggregate number of the warrants;
- the designation and terms of the debt securities purchasable upon exercise of the warrants;
- if applicable, the designation and terms of the debt securities that the warrants are issued with and the number of warrants issued with each debt security;
- if applicable, the date from and after which the warrants and any debt securities issued with them will be separately transferable;
- the principal amount of debt securities that may be purchased upon exercise of a warrant and the price at which the debt securities may be purchased upon exercise;
- the dates on which the right to exercise the warrants will commence and expire;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- whether the warrants represented by the warrant certificates or debt securities that may be issued upon exercise of the warrants will be issued in registered or bearer form;
- information relating to book-entry procedures, if any;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- anti-dilution provisions of the warrants, if any;
- redemption or call provisions, if any, applicable to the warrants;
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants; and
- any other information we think is important about the warrants.

Stock and Depositary Share Warrants

The prospectus supplement relating to a particular issue of warrants to issue common stock, preferred stock or depositary shares will describe the terms of the common stock warrants, preferred stock warrants and depositary share warrants, including the following:

- the title of the warrants;
- the offering price for the warrants, if any;
- the aggregate number of the warrants;
- the designation and terms of the common stock, preferred stock or depositary shares purchasable upon exercise of the warrants;
- if applicable, the designation and terms of the securities that the warrants are issued with and the number of warrants issued with each security;
- if applicable, the date from and after which the warrants and any securities issued with them will be separately transferable;
- the number of shares of common stock, preferred stock or depositary shares that may be purchased upon exercise of a warrant and the price at which the shares may be purchased upon exercise;
- the dates on which the right to exercise the warrants will commence and expire;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- anti-dilution provisions of the warrants, if any;
- redemption or call provisions, if any, applicable to the warrants;
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants; and
- any other information we think is important about the warrants.

Exercise of Warrants

Each warrant will entitle the holder of the warrant to purchase at the exercise price set forth in the applicable prospectus supplement the number of shares of common stock, preferred stock or depositary shares or the principal amount of debt securities being offered. Holders may exercise warrants at any time up to the close of business on the expiration date set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants are void. Holders may exercise warrants as set forth in the prospectus supplement relating to the warrants being offered.

Until a holder exercises the warrants to purchase our common stock, preferred stock, depositary shares or debt securities, the holder will not have any rights as a holder of our common stock, preferred stock, depositary shares or debt securities, as the case may be, by virtue of ownership of warrants.

DESCRIPTION OF SUBSCRIPTION RIGHTS

We may issue to our stockholders subscription rights to purchase our common stock, preferred stock, depositary shares, contingent value rights or debt securities. The following description sets forth certain general terms and provisions of the subscription rights that we may

offer pursuant to this prospectus. The particular terms of the subscription rights and the extent, if any, to which the general terms and provisions may apply to the subscription rights so offered will be described in the applicable prospectus supplement.

Subscription rights may be issued independently or together with any other security offered by this prospectus and may or may not be transferable by the stockholder receiving the rights in the rights offering. In connection with any rights offering, we may enter into a standby underwriting agreement with one or more underwriters pursuant to which the underwriter will purchase any securities that remain unsubscribed for upon completion of the rights offering, or offer these securities to other parties who are not our stockholders. A copy of the form of subscription rights certificate will be filed with the SEC each time we issue subscription rights, and you should read that document for provisions that may be important to you. For more information on how you can obtain a copy of any subscription rights certificate, see “Where You Can Find Additional Information.”

The applicable prospectus supplement relating to any subscription rights will describe the terms of the offered subscription rights, including, where applicable, the following:

- the exercise price for the subscription rights;
- the number of subscription rights issued to each stockholder;
- the extent to which the subscription rights are transferable;
- any other terms of the subscription rights, including terms, procedures and limitations relating to the exchange and exercise of the subscription rights;
- the date on which the right to exercise the subscription rights will commence and the date on which the right will expire;
- the extent to which the subscription rights include an over-subscription privilege with respect to unsubscribed securities; and
- the material terms of any standby underwriting arrangement entered into by us in connection with the subscription rights offering.

DESCRIPTION OF CONTINGENT VALUE RIGHTS

We may issue contingent value rights pursuant to an agreement to be entered into by and between the Company and a trustee, agent and/or the purchasers (or representative(s) thereof) of such contingent value rights, which we refer to as the “CVR Agreement.” The contingent value rights will entitle the holder to a potential cash payment upon the satisfaction of one or more conditions set forth in the CVR Agreement. The following description sets forth certain general terms and provisions of the contingent value rights that we may offer pursuant to this prospectus. The particular terms of the contingent value rights and the extent, if any, to which the general terms and provisions may apply to the contingent value rights so offered will be described in the applicable prospectus supplement.

Contingent value rights may be issued independently or together with any other security offered by this prospectus. A copy of the form of contingent value rights certificate will be filed with the SEC each time we issue contingent value rights, and you should read that document for provisions that may be important to you. For more information on how you can obtain a copy of any contingent value rights certificate, see “Where You Can Find Additional Information.”

The applicable prospectus supplement relating to any contingent value rights will describe the terms of the offered contingent value rights, including, where applicable, the following:

- the description of the payment condition(s);
- the term and maturity date of the contingent value rights;
- the formula by which the potential cash payment will be determined upon the satisfaction of the payment condition(s);
- events of default under the CVR Agreement;
- the extent to which the contingent value rights are transferable; and

- any other terms of the contingent value rights.

The foregoing is not intended to be an exclusive list of the terms that may be applicable to any offered contingent value rights.

DESCRIPTION OF DEBT SECURITIES

The following description sets forth certain general terms and provisions of the debt securities that we may issue, which may be issued as convertible or exchangeable debt securities. We will set forth the particular terms of the debt securities we offer in a prospectus supplement and the extent, if any, to which the following general terms and provisions will apply to particular debt securities.

The debt securities will be issued under an indenture to be entered into between us and a trustee that we will specify in the applicable prospectus supplement. The indenture, and any supplemental indentures thereto, will be subject to, and governed by, the Trust Indenture Act of 1939, as amended. The following description of general terms and provisions relating to the debt securities and the indenture under which the debt securities will be issued is a summary only and therefore is not complete and is subject to, and qualified in its entirety by reference to, the terms and provisions of the indenture. The form of the indenture has been filed with the SEC as an exhibit to the registration statement of which this prospectus forms a part, and you should read the indenture for provisions that may be important to you. For more information on how you can obtain a copy of the form of the indenture, see “Where You Can Find Additional Information.”

Capitalized terms used in this section and not defined herein have the meanings specified in the indenture. When we refer to “we,” “our” and “us” in this section, we mean FibroBiologics, Inc. excluding, unless the context otherwise requires or as otherwise expressly stated, its subsidiaries.

General

Unless otherwise specified in a prospectus supplement, the debt securities will be our direct, unsecured obligations and will rank equally with all of our existing and future senior unsecured indebtedness and senior in right of payment to all of our subordinated indebtedness.

The indenture does not limit the aggregate principal amount of debt securities that may be issued under it and provides that debt securities may be issued under it from time to time in one or more series. We may specify a maximum aggregate principal amount for the debt securities of any series.

Unless otherwise specified in the applicable prospectus supplement, the indenture does not afford the holders of the debt securities the right to require us to repurchase or redeem the debt securities in the event of a highly-leveraged transaction.

We are not obligated to issue all debt securities of one series at the same time and, unless otherwise provided in the applicable prospectus supplement, we may reopen a series, without the consent of the holders of the outstanding debt securities of that series, for the issuance of additional debt securities of that series. Additional debt securities of a particular series will have the same terms and conditions as outstanding debt securities of such series, except for the issue date and, in some cases, the public offering price and the first interest payment date, and will be consolidated with, and form a single series with, such outstanding debt securities; provided, however, that if such additional debt securities are not fungible with the outstanding debt securities of such series for U.S. federal income tax purposes, the additional debt securities will have a separate CUSIP number.

We will set forth in a prospectus supplement relating to any debt securities being offered the aggregate principal amount and the following terms of the debt securities, if applicable:

- the title of debt securities;
- the price or prices (expressed as a percentage of the principal amount) at which the debt securities will be issued;
- any limit on the aggregate principal amount of the series of debt securities;
- whether the debt securities will be senior debt securities or subordinated debt securities, and if they are subordinated debt securities, the terms of the subordination;

- the date or dates on which the principal on the series of debt securities is payable;
- the rate or rates (which may be fixed or variable) per annum or the method used to determine such rate or rates (including any commodity, commodity index, stock exchange index or financial index) at which the series of debt securities will bear interest, if any, the date or dates from which such interest, if any, will accrue, the date or dates on which such interest, if any, will commence and be payable and any regular record date for the interest payable on any interest payment date;
- the right, if any, to extend the interest periods and the duration of that extension;
- the place or places where the principal of, and premium and interest, if any, on, the debt securities will be payable;
- the terms and conditions upon which the debt securities may be redeemed;
- any obligation we may have to redeem or purchase the debt securities pursuant to any sinking fund or analogous provisions or at the option of a holder of the debt securities;
- the dates on which and the price or prices at which we will repurchase the debt securities at the option of the holders of the debt securities and other detailed terms and provisions of such repurchase obligations;
- the denominations in which the debt securities will be issued, if other than denominations of \$2,000 and integral multiples of \$1,000 in excess thereof;
- whether the debt securities will be issued in the form of certificated debt securities or global debt securities;
- the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the principal amount;
- the designation of the currency, currencies or currency units in which payment of principal of, and premium and interest, if any, on, the debt securities will be made if other than U.S. dollars;
- any provisions relating to any security provided for the debt securities;
- any addition to or change in the events of default described in this prospectus or in the indenture and any change in the acceleration provisions described in this prospectus or in the indenture with respect to the debt securities;
- any addition to, or change in, the covenants described in this prospectus or in the indenture with respect to the debt securities;
- any other terms of the debt securities (which may supplement, modify or delete any provision of the indenture as it applies to such debt securities);
- any depositories, interest rate calculation agents, exchange rate calculation agents or other agents with respect to the series of debt securities, if other than those, if any, appointed in the indenture; and
- any provisions relating to conversion of the debt securities.

The foregoing is not intended to be an exclusive list of the terms that may be applicable to any offered debt securities.

In addition, the indenture does not limit our ability to issue convertible, exchangeable or subordinated debt securities. Any conversion, exchange or subordination provisions of debt securities will be described in the relevant prospectus supplement. Such terms may include provisions for conversion or exchange, either mandatory, at the option of the holder or at our option, in which case the number of shares of common stock or other securities to be received by the holders of debt securities would be calculated as of a time and in the manner stated in the prospectus supplement.

We may issue debt securities that provide for an amount less than their stated principal amount to be due and payable upon declaration of acceleration of their maturity pursuant to the terms of the indenture. We will provide you with information on the U.S. federal income

tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

If we denominate the purchase price of any of the debt securities in a foreign currency or currencies or a foreign currency unit or units, or if the principal of, and any premium and interest on, any series of debt securities is payable in a foreign currency or currencies or a foreign currency unit or units, we will provide you with information on the restrictions, elections, general tax considerations, specific terms and other information with respect to that issue of debt securities and such foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Exchange and Transfer

Debt securities may be transferred or exchanged at the office of the registrar or co-registrar designated by us.

We will not impose a service charge for any transfer or exchange, but we may require holders to pay any tax or other governmental charges associated with any transfer or exchange.

In the event of any redemption of debt securities of any series, we will not be required to:

- issue, register the transfer of, or exchange any debt security of that series during a period beginning at the opening of 15 business days before the day of sending of a notice of redemption and ending at the close of business on the day such notice is sent; or
- register the transfer of or exchange any debt security of that series selected, called or being called for redemption, in whole or in part, except the unredeemed portion of any series being redeemed in part.

We may initially appoint the trustee as the registrar. Any transfer agent, in addition to the registrar initially designated by us, will be named in the prospectus supplement. We may designate additional transfer agents or change transfer agents or change the office of the transfer agent. However, we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

Global Securities

The debt securities of any series may be represented, in whole or in part, by one or more global securities. Each global security will:

- be registered in the name of a depository that we will identify in a prospectus supplement;
- be deposited with the trustee as custodian for the depository or its nominee; and
- bear any required legends.

No global security may be exchanged in whole or in part for debt securities registered in the name of any person other than the depository or any nominee unless:

- the depository has notified us that it is unwilling or unable to continue as depository or has ceased to be qualified to act as depository, and in either case we fail to appoint a successor depository registered as a clearing agency under the Exchange Act within 90 days of such event;
- we execute and deliver to the trustee an officer's certificate to the effect that such global securities shall be so exchangeable; or
- an event of default with respect to the debt securities represented by such global securities shall have occurred and be continuing.

As long as the depository, or its nominee, is the registered owner of a global security, the depository or nominee will be considered the sole owner and holder of the debt securities represented by the global security for all purposes under the indenture. Except in the above limited circumstances, owners of beneficial interests in a global security:

- will not be entitled to have the debt securities registered in their names;
- will not be entitled to physical delivery of certificated debt securities; and

- will not be considered to be holders of those debt securities under the indenture.

Payments on a global security will be made to the depository or its nominee as the holder of the global security. Some jurisdictions have laws that require that certain purchasers of securities take physical delivery of such securities in definitive form. These laws may impair the ability to transfer beneficial interests in a global security.

Institutions that have accounts with the depository or its nominee are referred to as “participants.” Ownership of beneficial interests in a global security will be limited to participants and to persons that may hold beneficial interests through participants. The depository will credit, on its book-entry registration and transfer system, the respective principal amounts of debt securities represented by the global security to the accounts of its participants. Each person owning a beneficial interest in a global security must rely on the procedures of the depository (and, if such person is not a participant, on procedures of the participant through which such person owns its interest) to exercise any rights of a holder under the indenture.

Ownership of beneficial interests in a global security will be shown on and effected through records maintained by the depository, with respect to participants’ interests, or by any participant, with respect to interests of persons held by participants on their behalf. Payments, transfers and exchanges relating to beneficial interests in a global security will be subject to policies and procedures of the depository. The depository’s policies and procedures may change from time to time. Neither we nor the trustee will have any responsibility or liability for the depository’s acts or omissions or any participant’s records with respect to beneficial interests in a global security.

Payment and Paying Agent

The provisions of this subsection will apply to the debt securities unless otherwise indicated in the prospectus supplement. Payment of interest on a debt security on any interest payment date will be made to the person in whose name the debt security is registered at the close of business on the regular record date. Payment on debt securities of a particular series will be payable at the office of a paying agent or paying agents designated by us. However, at our option, we may pay interest by mailing a check to the record holder.

We may also name any other paying agents in the prospectus supplement. We may designate additional paying agents, change paying agents or change the office of any paying agent. However, we will be required to maintain a paying agent in each place of payment for the debt securities of a particular series.

Subject to any applicable abandoned property law, all monies paid by us to a paying agent for payment on any debt security that remain unclaimed at the end of two years after such payment was due will be repaid to us. Thereafter, the holder may look only to us for such payment.

Consolidation, Merger and Sale of Assets

Except as otherwise set forth in the applicable prospectus supplement, we may not merge or consolidate with or into any other person, in a transaction in which we are not the surviving corporation, or sell, convey, transfer, lease or otherwise dispose of all or substantially all of the properties and assets of us and our subsidiaries, taken as a whole, to any person, unless:

- the successor or transferee is a U.S. corporation, limited liability company, partnership, trust or other entity;
- the successor or transferee assumes our obligations on the debt securities and under the indenture pursuant to a supplemental indenture in form reasonably satisfactory to the trustee;
- immediately after giving effect to the transaction and treating our obligations in connection with or as a result of such transaction as having been incurred as of the time of such transaction, no default or event of default under the indenture shall have occurred and be continuing; and
- an officer’s certificate and an opinion of counsel have been delivered to the trustee in connection with the foregoing.

In the event of the above transaction, if there is a successor or transferee, then the successor or transferee will expressly assume all of our obligations under the indenture and automatically be substituted for us in the indenture and as issuer of the debt securities and may exercise every right and power of ours under the indenture with the same effect as if such successor or transferee had been named in our place in the indenture; provided, however, that the predecessor company will not be relieved of the obligation to pay principal and

interest on the debt securities except in the case of a sale of all of the assets of us and our subsidiaries.

Events of Default

Event of default means, with respect to any series of debt securities, any of the following:

- default in the payment of any interest on any debt security of that series when it becomes due and payable, and continuance of that default for a period of 30 days;
- default in the payment of principal of, or premium on, any debt security of that series when due and payable;
- failure on our part to comply with the covenant described under “—Consolidation, Merger and Sale of Assets”;

- default in the performance or breach of any other covenant or warranty by us in the indenture or any supplemental indenture with respect to such series (other than a covenant or warranty that has been included in the indenture or supplemental indenture solely for the benefit of a series of debt securities other than that series), which default continues uncured for a period of 60 days after (1) we receive written notice from the trustee or (2) we and the trustee receive written notice from the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of that series as provided in the indenture;
- certain events of bankruptcy, insolvency or reorganization of our company or our significant subsidiaries; and
- any other event of default provided with respect to debt securities of that series that is described in the applicable prospectus supplement.

We will promptly deliver to the trustee written notice of any event which with the giving of notice and the lapse of time would become a covenant event of default, or any other event of default provided with respect to debt securities of that series that is described in the applicable prospectus supplement, along with a description of the status and what action we are taking or propose to take with respect to such event of default.

No event of default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an event of default with respect to any other series of debt securities. The occurrence of an event of default may constitute an event of default under our bank credit agreements in existence from time to time. In addition, the occurrence of certain events of default or an acceleration under the indenture may constitute an event of default under certain of our other indebtedness outstanding from time to time.

If an event of default (other than an event of default resulting from certain events of bankruptcy, insolvency or reorganization of our company) with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the trustee if given by the holders), declare to be due and payable immediately the principal (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) of, and accrued and unpaid interest, if any, on all debt securities of that series. In the case of an event of default resulting from certain events of bankruptcy, insolvency or reorganization of our company, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. At any time after a declaration of acceleration with respect to debt securities of any series has been made, the holders of a majority in aggregate principal amount of the outstanding debt securities of that series may rescind and annul the acceleration if the rescission and annulment would not conflict with any judgment or decree already rendered and if all events of default with respect to that series, other than the non-payment of principal and interest, if any, with respect to debt securities of that series that has become due and payable solely because of the acceleration, have been cured or waived and all sums paid or advanced by the trustee and the reasonable compensation expenses and disbursements of the trustee and its agents and counsel have been paid as provided in the indenture.

The indenture provides that the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request of any holder of outstanding debt securities, unless the trustee receives security or indemnity satisfactory to it against any loss, liability or expense. Subject to certain rights of the trustee, the holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the

trustee or exercising any trust or power conferred on the trustee with respect to the debt securities of that series.

No holder of any debt security of any series will have any right to institute any proceeding, judicial or otherwise, with respect to the indenture or for the appointment of a receiver or trustee, or for any remedy under the indenture, unless:

- that holder has previously given to the trustee written notice of a continuing event of default with respect to debt securities of that series; and
- the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made written request, and offered security or indemnity satisfactory to the trustee, to institute the proceeding as trustee, and the trustee has not received from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series a direction inconsistent with that request and has failed to institute the proceeding within 60 days.

Notwithstanding the foregoing, the holder of any debt security will have an absolute and unconditional right to receive payment of the principal of, and premium and any interest on, that debt security on or after the due dates expressed in that debt security and to institute suit for the enforcement of such payment.

The indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any default or event of default (except in payment on any debt securities of that series) with respect to debt securities of that series if it in good faith determines that withholding notice is in the interest of the holders of those debt securities.

Modification and Waiver

We may amend or modify the indenture without the consent of any holder of debt securities of the series affected by the modifications or amendments in order to:

- cure any ambiguity, defect or inconsistency;
- conform the text of the indenture, including any supplemental indenture, or the debt securities to any corresponding provision of this “Description of Debt Securities” or description of the debt securities found in the prospectus supplement as evidenced by an officer’s certificate;
- provide for the issuance of additional debt securities;
- provide for the assumption of our obligations in the case of a merger or consolidation and our discharge upon such assumption provided that the provision under “Merger, Consolidation, or Sale of Assets” of the indenture is complied with;
- add covenants or make any change that would provide any additional rights or benefits to the holders of the debt securities;
- add guarantees with respect to the debt securities;
- provide for uncertificated debt securities in addition to or in place of certificated debt securities;
- secure the debt securities;
- add or appoint a successor or separate trustee;
- make any change that does not adversely affect the rights of any holder of debt securities in any material respect, as evidenced by an officer’s certificate; or
- obtain or maintain the qualification of the indenture under the Trust Indenture Act of 1939, as amended.

Other amendments and modifications of the indenture or the debt securities issued may be made with the consent of the holders of at least a majority of the aggregate principal amount of the outstanding debt securities of the affected series, and our compliance with any

provision of the indenture with respect to the debt securities may be waived by written notice to the trustee by the holders of a majority of the aggregate principal amount of the outstanding debt securities of the affected series. However, no modification or amendment may, without the consent of the holder of each outstanding debt security of the affected series:

- reduce the principal amount or any premium or change the stated maturity of any debt security or alter or waive any of the provisions with respect to the redemption or repurchase of the debt securities;
- change the place of payment or currency in which principal, any premium or interest is paid;
- impair the right to institute suit for the enforcement of any payment on the debt securities;
- waive a payment default with respect to the debt securities;
- reduce the interest rate or extend the time for payment of interest on the debt securities;
- make any change to the amendment and modification provisions in the indenture; or
- reduce the percentage in principal amount outstanding of debt securities, the consent of the holders of which is required for any of the foregoing modifications or otherwise necessary to modify, supplement or amend the indenture or to waive any past default.

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of an affected series may, on behalf of the holders of all debt securities of such series, waive our compliance with provisions of the indenture. Prior to the acceleration of the maturity of the debt securities of any series pursuant to the terms of the indenture, the holders of a majority in aggregate principal amount of the outstanding debt securities of such series may, on behalf of the holders of all the debt securities of such series, waive any past default under the indenture with respect to such debt securities and its consequences, except (i) a default with respect to such series in the payment of the principal of, or premium or any interest on, the debt securities of such series or (ii) a default or event of default in respect of a covenant or provision that cannot be modified or amended without the consent of all of the holders of the outstanding debt securities of the affected series.

Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

Legal Defeasance. The indenture provides that, in certain circumstances, we may be discharged from any and all obligations in respect of the debt securities of any series (except for certain obligations to register the transfer or exchange of debt securities, to replace stolen, lost or mutilated debt securities, and to maintain paying agencies and certain provisions relating to the treatment of funds held by paying agents). We will be so discharged upon the deposit with the trustee, in trust, of money and/or U.S. government obligations that, through the payment of interest and principal in accordance with their terms, will provide money in an amount sufficient in the written opinion of a nationally recognized firm of independent public accountants, a nationally recognized investment bank or a nationally recognized appraisal firm to pay and discharge each installment of principal, premium and interest in accordance with the terms of the indenture and the debt securities of that series.

This discharge may occur only if, among other things, we have delivered to the trustee an opinion of counsel stating that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable U.S. federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the beneficial owners of the debt securities of the applicable series will not recognize income, gain or loss for U.S. federal income tax purposes as a result of the deposit, defeasance and discharge and will be subject to U.S. federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit, defeasance and discharge had not occurred.

Defeasance of Certain Covenants. The indenture provides that, upon compliance with certain conditions, we may be released from our obligation to comply with certain covenants set forth in the indenture and any supplemental indenture, and any failure to comply with those covenants will not constitute a default or an event of default with respect to the debt securities of the applicable series, or covenant defeasance. If we exercise our covenant defeasance option with respect to a series of debt securities, payment of such debt securities may not be accelerated because of an event of default related to certain events of bankruptcy, insolvency or reorganization of our significant subsidiaries.

The conditions include:

- depositing with the trustee money and/or U.S. government obligations that, through the payment of interest and principal in accordance with their terms, will provide money in an amount sufficient in the written opinion of a nationally recognized firm of independent public accountants, a nationally recognized investment bank or a nationally recognized appraisal firm to pay and discharge each installment of principal of, premium and interest in accordance with the terms of the indenture and the debt securities of the applicable series; and
- delivering to the trustee an opinion of counsel to the effect that the beneficial owners of the debt securities of the applicable series will not recognize income, gain or loss for U.S. federal income tax purposes as a result of the deposit and related covenant defeasance and will be subject to U.S. federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit and related covenant defeasance had not occurred.

Governing Law

The indenture and the debt securities will be governed by, and construed in accordance with, the internal laws of the State of New York.

DESCRIPTION OF PURCHASE CONTRACTS

We may issue purchase contracts, including contracts obligating holders to purchase from us, and obligating us to sell to the holders, a specified number of shares of common stock or other securities at a future date or dates. The price per security of the securities and the number of securities may be fixed at the time the purchase contracts are issued or may be determined by reference to a specific formula set forth in the purchase contracts. The purchase contracts also may require us to make periodic payments to the holders of the purchase contracts, or vice versa, and those payments may be unsecured or refunded on some basis. The purchase contracts may require holders to secure their obligations thereunder in a specified manner and may provide for the prepayment of all or part of the consideration payable by holders in connection with the purchase of the underlying security or other property pursuant to the purchase contracts.

The securities related to the purchase contracts may be pledged to a collateral agent for our benefit pursuant to a pledge agreement to secure the obligations of holders of purchase contracts to purchase the underlying security or property under the related purchase contracts. The rights of holders of purchase contracts to the related pledged securities will be subject to our security interest therein created by the pledge agreement. No holder of purchase contracts will be permitted to withdraw the pledged securities related to such purchase contracts from the pledge arrangement.

The prospectus supplement relating to any particular issuance of purchase contracts will describe the terms of the purchase contracts. The description in the prospectus supplement will not necessarily be complete, and reference will be made to the purchase contracts, and, if applicable, collateral or depositary arrangements, relating to the purchase contracts, which will be filed with the SEC each time we issue purchase contracts. U.S. federal income tax considerations applicable to the purchase contracts will also be discussed in the prospectus supplement.

DESCRIPTION OF UNITS

We may issue units comprising one or more securities described in this prospectus in any combination. The following description sets forth certain general terms and provisions of the units that we may offer pursuant to this prospectus. The particular terms of the units and the extent, if any, to which the general terms and provisions may apply to the units so offered will be described in the applicable prospectus supplement.

Each unit will be issued so that the holder of the unit also is the holder of each security included in the unit. Thus, the unit will have the rights and obligations of a holder of each included security. Units will be issued pursuant to the terms of a unit agreement, which may provide that the securities included in the unit may not be held or transferred separately at any time or at any time before a specified date. A copy of the forms of the unit agreement and the unit certificate relating to any particular issue of units will be filed with the SEC each time we issue units, and you should read those documents for provisions that may be important to you. For more information on how you can obtain copies of the forms of the unit agreement and the related unit certificate, see “Where You Can Find Additional Information.”

The prospectus supplement relating to any particular issuance of units will describe the terms of those units, including, to the extent applicable, the following:

- the designation and terms of the units and the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provision for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units; and
- whether the units will be issued in fully registered or global form.

PLAN OF DISTRIBUTION

We may sell the offered securities in and outside the United States:

- through underwriters or dealers;
- directly to purchasers;
- in a rights offering;
- in “at the market” offerings, within the meaning of Rule 415(a)(4) of the Securities Act, to or through a market maker or into an existing trading market on an exchange or otherwise;
- through agents; or
- through a combination of any of these methods.

The prospectus supplement will include the following information:

- the terms of the offering;
- the names of any underwriters or agents;
- the name or names of any managing underwriter or underwriters;
- the purchase price or initial public offering price of the securities;
- the net proceeds from the sale of the securities;
- any delayed delivery arrangements;
- any underwriting discounts, commissions and other items constituting underwriters’ compensation;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any commissions paid to agents.

Sale through Underwriters or Dealers

If underwriters are used in the sale, the underwriters will acquire the securities for their own account. The underwriters may resell the securities from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. Underwriters may offer securities to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. Unless we inform you otherwise in the prospectus supplement, the obligations of the underwriters to purchase the securities will be subject to certain conditions, and the underwriters will be obligated to purchase all the offered securities if they purchase any of them. The underwriters may change from time to time any initial offering price to the public and any discounts or concessions allowed or reallocated or paid to dealers.

If we offer securities in a subscription rights offering to our existing security holders, we may enter into a standby underwriting agreement with dealers, acting as standby underwriters. We may pay the standby underwriters a commitment fee for the securities they commit to purchase on a standby basis. If we do not enter into a standby underwriting agreement, we may retain a dealer-manager to manage a subscription rights offering for us.

During and after an offering through underwriters, the underwriters may purchase and sell the securities in the open market. These transactions may include over-allotment and stabilizing transactions and purchases to cover syndicate short positions created in connection with the offering. The underwriters may also impose a penalty bid, which means that selling concessions allowed to syndicate members or other broker-dealers for the offered securities sold for their account may be reclaimed by the syndicate if the offered securities are repurchased by the syndicate in stabilizing or covering transactions. These activities may stabilize, maintain or otherwise affect the market price of the offered securities, which may be higher than the price that might otherwise prevail in the open market. If commenced, the underwriters may discontinue these activities at any time.

Some or all of the securities that we offer through this prospectus may be new issues of securities with no established trading market. Any underwriters to whom we sell our securities for public offering and sale may make a market in those securities, but they will not be obligated to do so and they may discontinue any market making at any time without notice. Accordingly, we cannot assure you of the liquidity of, or continued trading markets for, any securities that we offer.

If dealers are used in the sale of securities, we will sell the securities to them as principals. They may then resell those securities to the public at varying prices determined by the dealers at the time of resale. We will include in the prospectus supplement the names of the dealers and the terms of the transaction.

Direct Sales and Sales through Agents

We may sell the securities directly. In this case, no underwriters or agents would be involved. We may also sell the securities through agents designated from time to time at fixed prices or at varying prices determined at the time of sale. In the prospectus supplement, we will name any agent involved in the offer or sale of the offered securities, and we will describe any commissions payable to the agent. Unless we inform you otherwise in the prospectus supplement, any agent will agree to use its reasonable best efforts to solicit purchases for the period of its appointment.

We may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of those securities. We will describe the terms of any sales of these securities in the prospectus supplement.

Remarketing Arrangements

Offered securities may also be offered and sold, if so indicated in the applicable prospectus supplement, in connection with a remarketing upon their purchase, in accordance with a redemption or repayment pursuant to their terms, or otherwise, by one or more remarketing firms, acting as principals for their own accounts or as agents for us. Any remarketing firm will be identified and the terms of its agreements, if any, with us and its compensation will be described in the applicable prospectus supplement.

Delayed Delivery Contracts

If we so indicate in the prospectus supplement, we may authorize agents, underwriters or dealers to solicit offers from certain types of institutions to purchase securities from us at the public offering price under delayed delivery contracts. These contracts would provide for payment and delivery on a specified date in the future. The contracts would be subject only to those conditions described in the prospectus supplement. The prospectus supplement will describe the commission payable for solicitation of those contracts.

General Information

We may have agreements with the agents, dealers, underwriters and remarketing firms to indemnify them against certain civil liabilities, including liabilities under the Securities Act, or to contribute with respect to payments that the agents, dealers, underwriters or remarketing firms may be required to make. Agents, dealers, underwriters and remarketing firms may be customers of, engage in transactions with or perform services for us in the ordinary course of their businesses.

LEGAL MATTERS

Jones Day will pass upon the validity of the securities being offered hereby.

EXPERTS

The financial statements of FibroBiologics, Inc. as of and for the years ended December 31, 2023 and 2022, have been audited by Withum Smith+Brown, PC, an independent registered public accounting firm, as stated in their report incorporated by reference herein. Such audited financial statements have been so included in reliance upon the report of such firm given upon their authority as experts in accounting and auditing. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the report of Withum Smith+Brown, PC pertaining to such financial statements (to the extent covered by consents filed with the Securities and Exchange Commission) given on the authority of such firm as experts in accounting and auditing.



FibroBiologics, Inc.

**Up to \$6,150,000
Common Stock**

PROSPECTUS SUPPLEMENT

H.C. Wainwright & Co.

May 1, 2026