



FibroBiologics, Inc.

1,028,788 Shares of Common Stock

1,243,940 Pre-Funded Warrants to Purchase up to 1,243,940 Shares of Common Stock

2,272,728 Warrants to Purchase up to 2,272,728 Shares of Common Stock

159,091 Placement Agent Warrants to Purchase up to 159,091 Shares of Common Stock

3,675,759 Shares of Common Stock Issuable Upon Exercise of the Warrants, Pre-Funded Warrants, and Placement Agent Warrants

We are offering 1,028,788 shares of our common stock, par value \$0.00001 per share (the “common stock” or the “Common Stock”), together with warrants to purchase up to 2,272,728 shares of Common Stock (the “Warrants”), pursuant to this prospectus. The combined public offering price for each share of Common Stock, together with an accompanying Warrant to purchase one (1) share of Common Stock, is \$1.32. Each Warrant will have an exercise price of \$1.32 per share, will be exercisable beginning on the effective date of stockholder approval of the issuance of the shares of Common Stock issuable upon exercise of the Warrants (the “Warrant Stockholder Approval”). The Warrants will expire on the five (5) year anniversary of the effective date of the Warrant Stockholder Approval.

We are also offering pre-funded warrants (the “Pre-Funded Warrants”) to purchase up to 1,243,940 shares of Common Stock to those purchasers whose purchase of shares of Common Stock in this offering would result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding Common Stock following the consummation of this offering in lieu of the shares of our Common Stock that would result in ownership in excess of 4.99% (or, at the election of the purchaser, 9.99%). Each Pre-Funded Warrant will be exercisable for one (1) share of Common Stock at an exercise price of \$0.00001 per share. Each Pre-Funded Warrant is being issued together with the Warrants described above being issued with each share of Common Stock. The combined public offering price for each such Pre-Funded Warrant, together with an accompanying Warrant to purchase one (1) share of Common Stock, is \$1.32 minus \$0.00001, the exercise price of the Pre-Funded Warrants. Each Pre-Funded Warrant will be exercisable upon issuance and may be exercised at any time until all of the Pre-Funded Warrants are exercised in full. The Pre-Funded Warrants and accompanying Warrants are immediately separable and will be issued separately in this offering but must initially be purchased together in this offering. This prospectus also relates to the offering of the shares of Common Stock issuable upon exercise of the Warrants, Pre-Funded Warrants and Placement Agent Warrants (as defined herein). For each Pre-Funded Warrant sold, the number of shares of Common Stock sold will be reduced on a one-for-one basis.

There is no established public trading market for the Warrants or the Pre-Funded Warrants, and we do not expect a market to develop. We do not intend to apply for listing of the Warrants or the Pre-Funded Warrants on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the Warrants and the Pre-Funded Warrants will be limited.

The securities will be offered at a fixed combined public offering price and are expected to be issued in a single closing. We expect this offering to be completed on or about April 2, 2026, and we will deliver all securities to be issued in connection with this offering delivery versus payment/receipt versus payment upon receipt by us of investor funds. Accordingly, neither we nor the Placement Agent (as defined below) have made any arrangements to place

investor funds in an escrow account or trust account since the Placement Agent will not receive investor funds in connection with the sale of the securities offered hereunder.

We have engaged H.C. Wainwright & Co., LLC (the “Placement Agent”), to act as our exclusive placement agent in connection with this offering. The Placement Agent has agreed to use its reasonable best efforts to arrange for the sale of the securities offered by this prospectus. The Placement Agent is not purchasing or selling any of the securities we are offering and the Placement Agent is not required to arrange the purchase or sale of any specific number of securities or dollar amount. We have agreed to pay to the Placement Agent the Placement Agent fees set forth in the table below, which assumes that we sell all of the securities offered by this prospectus. There is no minimum number of securities or amount of proceeds required as a condition to closing in this offering and we may sell fewer than all of the securities offered hereby, which may significantly reduce the amount of proceeds received by us. In addition, because there is no escrow trust or similar arrangement and no minimum offering amount, investors could be in a position where they have invested in our company, but we are unable to fulfill all of our contemplated objectives due to a lack of interest in this offering. Investors in this offering will not receive a refund in the event that we do not sell an amount of securities sufficient to pursue our business goals described in this prospectus. Further, any proceeds from the sale of securities offered by us will be available for our immediate use, despite uncertainty about whether we would be able to use such funds to effectively implement our business plan. We will bear all costs associated with the offering. See “*Plan of Distribution*” on page 18 of this prospectus for more information regarding these arrangements.

Our common stock is listed on the Nasdaq Capital Market under the symbol “FBLG”. On March 30, 2026, the last reported sales price of our common stock on Nasdaq was \$2.28 per share.

The combined public offering price per share of Common Stock and accompanying Warrant and the combined public offering price per Pre-Funded Warrant and accompanying Warrant we are offering and the exercise price and other terms of the Warrants were negotiated between us and the purchasers, in consultation with the Placement Agent based on the trading of our Common Stock prior to this offering, among other factors. Other factors considered in determining the offering price of the securities we are offering and the exercise price and other terms of the Warrants include the history and prospects of our company, the stage of development of our business, our business plans for the future and the extent to which they have been implemented, an assessment of our management, general conditions of the securities markets at the time of the offering and such other factors as were deemed relevant.

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 give effect to the reverse split unless otherwise stated, however, documents incorporated by reference into this registration statement that were filed prior to March 30, 2026 do not give effect to the reverse stock split, unless otherwise stated.

You should read this prospectus, together with additional information described under the headings “*Incorporation of Certain Documents by Reference*” and “*Where You Can Find Additional Information*” carefully before you invest in any of our securities.

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 Summary—Implications of Being an Emerging Growth Company and a Smaller Reporting Company.*”

<u>Per Share and Accompanying Warrant</u>	<u>Per Pre-Funded Warrant and</u>	<u>Total</u>
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			Accompanying Warrant			
Combined public offering price	\$	1.32000	\$	1.31999	\$	2,999,988.52
Placement Agent fees ⁽¹⁾	\$	0.09240	\$	0.09240	\$	210,000.07
Proceeds to us, before expenses ⁽²⁾	\$	1.22760	\$	1.22759	\$	2,789,988.45

⁽¹⁾ Represents a cash fee equal to 7.0% of the aggregate gross proceeds raised in this offering. In addition, we have also agreed to pay the Placement Agent a management fee equal to 1.0% of the aggregate gross proceeds raised in this offering and to reimburse the Placement Agent for its legal fees and expenses and other out-of-pocket expenses in an amount of \$100,000. In addition, we have agreed to issue to the Placement Agent, or its designees, warrants (the "Placement Agent Warrants") as compensation in connection with this offering to purchase a number of shares of our Common Stock equal to 7.0% of the aggregate number of shares of Common Stock and Pre-Funded Warrants being offered at an exercise price equal to 125% of the combined public offering price per share of Common Stock and accompanying Warrant. See the section entitled "*Plan of Distribution*" of this prospectus for a description of the compensation to be received by the Placement Agent.

⁽²⁾ Because there is no minimum number of securities or amount of proceeds required as a condition to closing in this offering, the actual offering amount, Placement Agent fees, estimated expenses and net proceeds to us, if any, are not presently determinable and may be substantially less than the total maximum offering amounts set forth above. The amount of the proceeds to us presented in this table does not give effect to any exercise of the Warrants or Placement Agent Warrants offered hereby.

We anticipate that delivery of the securities against payment will be made on or about April 2, 2026, subject to the satisfaction of customary closing conditions.

Investing in our securities involves a high degree of risk. See the "*Risk Factors*" section beginning on page 6 of this prospectus for the risks and uncertainties you should consider before investing in our securities.

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.

H.C. Wainwright & Co.

Prospectus dated March 31, 2026

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You should rely only on the information contained in this prospectus or contained in any free writing prospectus filed with the Securities and Exchange Commission. Neither we nor the Placement Agent have authorized anyone to provide any information different from, or in addition to, the information contained in this prospectus and in any free writing prospectuses we have prepared or that have been prepared on our behalf or to which we have referred you. Neither we nor the Placement Agent take responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the securities offered hereby, but only under the circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is current only as of its date, regardless of the time of delivery of this prospectus or of any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since such date.

For investors outside the United States: Neither we nor the Placement Agent have done anything that would permit the use of or possession or distribution of this prospectus or any related free writing prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the securities hereby and the distribution of this prospectus outside the United States.

ABOUT THIS PROSPECTUS

The registration statement of which this prospectus forms a part that we filed with the Securities and Exchange Commission (the “SEC”) includes exhibits that provide more detail of the matters discussed in this prospectus. You should read this prospectus and the related exhibits filed with the SEC, together with the additional information described under “*Where You Can Find Additional Information*” and “*Incorporation of Certain Documents by Reference*” before making your investment decision. You should rely only on the information provided or incorporated by reference in this prospectus, in any prospectus supplement or in a related free writing prospectus, or documents to which we otherwise refer you. In addition, this prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information.

This prospectus includes important information about us, the securities being offered and other information you should know before investing in our securities. You should not assume that the information contained in or incorporated by reference in this prospectus is accurate on any date subsequent to the date set forth on the front cover of this prospectus, even though this prospectus is delivered or securities are sold or otherwise disposed of on a later date. It is important for you to read and consider all information contained or incorporated by reference in this prospectus in making your investment decision. This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been, are filed or will be filed as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described under “*Where You Can Find Additional Information*.”

Unless otherwise indicated, information contained in this prospectus concerning our industry and the markets in which we operate, including our general expectations and market position, market opportunity and market share, is based on information from our own management estimates and research, as well as from industry and general publications and research, 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. Our management estimates have not been verified by any independent source, and we have not independently verified any third-party information. In addition, assumptions and estimates of our and our industry’s future performance are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in “*Risk Factors*.” These and other factors could cause our future performance to differ materially from our assumptions and estimates. See “*Risk Factors*” and “*Cautionary Note Regarding Forward-Looking Statements*.”

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to the registration statement of which this prospectus is a part 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 agreements, 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.

To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any document incorporated by reference filed with SEC, before the date of this prospectus, on the other hand, you should rely on the information in this prospectus. If any statement in a document incorporated by reference is inconsistent with a statement in another document incorporated by reference having a later date, the statement in the document having the later date modifies or supersedes the earlier statement.

We may also provide a prospectus supplement or post-effective amendment to the registration statement to add information to, or update or change information contained in, this prospectus. You should read both this prospectus and any applicable prospectus supplement or post-effective amendment to the registration statement together with the additional information to which we refer you in the sections of this prospectus entitled “*Where You Can Find Additional Information*.”

PROSPECTUS SUMMARY

This summary highlights select information contained elsewhere in this prospectus or incorporated by reference into this prospectus from our filings with the SEC entitled “Information Incorporated by Reference.” This summary is not complete and does not contain all the information you should consider before making an investment decision. You should read the entire prospectus and the documents incorporated by reference into this prospectus carefully, including the sections entitled “Risk Factors,” “Cautionary Note Regarding Forward-Looking Statements,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and the accompanying notes in our Annual Report on Form 10-K and/or included elsewhere in, or incorporated by reference into, this prospectus before making an investment decision. Unless otherwise indicated or the context otherwise requires, all references in this prospectus to the “Company,” “FibroBiologics,” “we,” “us,” “our” and the “registrant” refer to FibroBiologics, Inc. and its consolidated subsidiaries.

Except as otherwise noted, all information in this prospectus reflects and assumes (i) the full cash exercise of the Pre-Funded Warrants issued in this offering and (ii) no exercise of the Warrants or Placement Agent Warrants issued in this offering.

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 MVLS Rule, for the previous thirty (30) consecutive trading day period. We were provided a 180-calendar day period to regain compliance with the MVLS Rule, through February 2, 2026.

On March 9, 2026, we received a letter from the Nasdaq Hearings Panel (the “Panel”) confirming that we demonstrated compliance with the MVLS 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 will remain listed and trading on the Nasdaq Capital Market at least pending the expiration of the extension granted to us by the Panel.

We intend to actively monitor the closing bid price of our common stock, our MVLS, and our stockholders' equity and evaluate all 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.

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 will be 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 will be combined into one share of common stock. The reverse stock split will reduce 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, will not be 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 give effect to the reverse split unless otherwise stated, however, documents incorporated by reference into this registration statement that were filed prior to March 30, 2026 do not give effect to the reverse stock split, unless otherwise stated.

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 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.

THE OFFERING

Securities we are offering:	1,028,788 shares of Common Stock, Pre-Funded Warrants to purchase up to 1,243,940 shares of Common Stock, and accompanying Warrants to purchase up to 2,272,728 shares of Common Stock. The shares of Common Stock, or Pre-Funded Warrants in lieu thereof, and in each case the accompanying Warrants, are immediately separable and will be issued separately in this offering but must initially be purchased together in this offering.
Description of Warrants:	<p>Each Warrant will be exercisable for one (1) share of Common Stock, will have an exercise price of \$1.32 per share, and will be exercisable beginning on the effective date of the Warrant Stockholder Approval. The Warrants will expire on the five (5) year anniversary of the effective date of the Warrant Stockholder Approval.</p> <p>To better understand the terms of the Warrants, you should carefully read the “<i>Description of Securities We Are Offering</i>” section of this prospectus. You should also read the form of Warrant, which is filed as an exhibit to the registration statement that includes this prospectus. This prospectus also relates to the offering of the shares of Common Stock issuable upon exercise of the Warrants. There is no established trading market for the Warrants and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the Warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the Warrants will be limited.</p>
Description of Pre-Funded Warrants:	<p>If the issuance of shares of our Common Stock to a purchaser in this offering would result in such purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding Common Stock following the consummation of this offering, then such purchaser may purchase in lieu of the shares of our Common Stock that would result in such excess ownership, a Pre-Funded Warrant to purchase shares of our Common Stock for a purchase price per share of Common Stock issuable upon exercise of such Pre-Funded Warrant equal to the per share combined public offering price for the Common Stock sold in this offering less \$0.00001. Each Pre-Funded Warrant will have an exercise price of \$0.00001 per share, will be exercisable upon issuance and may be exercised at any time until all of the Pre-Funded Warrants are exercised in full. Purchasers of Pre-Funded Warrants will also receive accompanying Warrants as if such purchasers were buying shares of our Common Stock in this offering. This prospectus also relates to the offering of the shares of Common Stock issuable upon exercise of these Pre-Funded Warrants.</p> <p>To better understand the terms of the Pre-Funded Warrants, you should carefully read the “<i>Description of Securities We Are Offering</i>” section of this prospectus. You should also read the form of Pre-Funded Warrant, which is filed as an exhibit to the registration statement that includes this prospectus. There is no established trading market for the Pre-Funded Warrants, and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the Pre-Funded Warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the Pre-Funded Warrants will be limited.</p>
Description of Placement Agent Warrants:	We have also agreed to issue to the Placement Agent or its designees as compensation in connection with this offering, the Placement Agent Warrants to purchase up to 159,091 shares of Common Stock. The Placement Agent Warrants will be exercisable beginning on the effective date of the Warrant Stockholder Approval and will have substantially the same terms as the Warrants, except that the Placement Agent Warrants will have an exercise price of \$1.65 per share (representing 125% of the combined public offering price per share of Common Stock and accompanying Warrant) and a termination

date that will be five (5) years from the commencement of the sales of securities pursuant to this offering. See “*Plan of Distribution*” below.

To better understand the terms of the Placement Agent Warrants, you should carefully read the descriptions of the Placement Agent Warrants in the “*Description of Securities We Are Offering*” and “*Plan of Distribution*” sections of this prospectus. You should also read the form of Placement Agent Warrant, which is filed as an exhibit to the registration statement that includes this prospectus. This prospectus also relates to the offering of the shares of Common Stock issuable upon exercise of the Placement Agent Warrant.

Common stock to be outstanding prior to this offering: 3,512,845 shares.

Common stock to be outstanding after this offering⁽¹⁾: 5,785,573 shares of Common Stock, assuming full cash exercise of the Pre-Funded Warrants issued in this offering and no exercise of the Warrants or Placement Agent Warrants issued in this offering and an combined public offering price of \$1.32 per share of Common Stock and accompanying Warrant.

Use of Proceeds: We estimate that the net proceeds of this offering based upon a combined public offering price of \$1.32 per share of Common Stock and accompanying Warrant, after deducting Placement Agent fees and estimated offering expenses, will be approximately \$2.5 million, assuming full cash exercise of the Pre-Funded Warrants offered hereby and no exercise of the Warrants and Placement Agent Warrants.

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: Investing in our securities involves a high degree of risk. See “*Risk Factors*” beginning on page 6 of this prospectus for a discussion of factors you should carefully consider before deciding to invest in our securities.

Best Efforts Offering: We have agreed to offer and sell the securities offered hereby to the purchasers through the Placement Agent. The Placement Agent is not required to buy or sell any specific number or dollar amount of the securities offered hereby, but it will use its reasonable best efforts to solicit offers to purchase the securities offered by this prospectus. See “*Plan of Distribution*” on page 18 of this prospectus.

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

Lock-up: We, each of our officers, directors, and certain of our stockholders have agreed, subject to certain exceptions, not to sell, offer, agree to sell, contract to sell, hypothecate, pledge, grant any option to purchase, make any short sale of, or otherwise dispose of or hedge, directly or indirectly, any shares of our capital stock or any securities convertible into or exercisable or exchangeable for shares of capital stock, for a period of thirty (30) days after the date of this prospectus, without the prior written consent of the placement agent. See “*Shares Eligible for Future Sale*” and “*Plan of Distribution*” for additional information.

⁽¹⁾ The number of shares outstanding after this offering is based on 3,512,845 shares of our common stock outstanding as of March 31, 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 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; and
- 159,091 shares of common stock reserved for issuance upon the exercise of the Placement Agent Warrants to be issued in connection with this offering.

Unless otherwise indicated, all information in this prospectus (a) gives effect to the 1-for-20 reverse stock split of our common stock effected on March 30, 2026, and (b) assumes (i) the full cash exercise of the Pre-Funded Warrants issued in this offering and (ii) no exercises of any outstanding stock options or warrants and no exercise of the Warrants or the Placement Agent Warrants issued in this offering.

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 under the section titled “Risk Factors” in our most recent Annual Report on Form 10-K for the year ended December 31, 2025, or the Annual Report, which is incorporated by reference into this 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, and the documents incorporated by reference herein, 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 also contains 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

You will experience immediate dilution as a result of this offering and may experience additional dilution in the future.

The combined public offering price for the shares offered hereby will be substantially higher than the net tangible book value per share of our common stock as of December 31, 2025, immediately after this offering. See the section entitled “Dilution” of this prospectus for a more detailed discussion of the dilution you will incur if you purchase Common Stock or Pre-Funded Warrants in this offering. If you purchase securities in this offering, you will incur substantial and immediate dilution in the pro forma as adjusted net tangible book value of your investment. Historical net tangible book value per share of Common Stock represents our total tangible assets (total assets less intangible assets) less total liabilities divided by the number of shares of Common Stock outstanding as of that date. To the extent that issued and outstanding securities that are convertible or exercisable into common stock are so exercised or converted, including the Warrants, there will be further dilution to your investment. We may also issue additional common stock, warrants, options and other securities exercisable or convertible into common stock in the future that may result in further dilution of your shares of our common stock.

Future sales of our common stock, or the perception that such sales may occur, could depress the trading price of our common stock.

After the completion of this offering (and assuming the cash exercise in full of Pre-Funded Warrants are sold in this offering and assuming that the Warrants and Placement Agent Warrants are not exercised), we expect to have 5,785,573 shares of our common stock outstanding, which may be resold in the public market immediately after this offering. We and all of our executive officers and directors have signed lock-up agreements for a period of thirty (30) days following the date of this prospectus, subject to specified exceptions. See “Plan of Distribution.”

The Placement Agent may, in its sole discretion and without notice, release all or any portion of the shares of our common stock subject to lock-up agreements.

As restrictions on resale end, the market price of our common stock could drop significantly if the holders of these shares of our common stock sell them or are perceived by the market as intending to sell them. These factors could also make it more difficult for us to raise additional funds through future offerings of our common stock or other securities.

The best efforts structure of this offering may have an adverse effect on our business plan.

The Placement Agent is offering the securities in this offering on a best efforts basis. The Placement Agent is not required to purchase any securities or arrange for the purchase or sale of any specific number or dollar amount of the securities, but will use its best efforts to sell the securities offered. As a “best efforts” offering, there can be no assurance that the offering contemplated hereby will ultimately be consummated or will result in any proceeds being made available to us. Because there is no minimum offering amount required as a condition to the closing of this offering, the actual offering amount, placement agent fees and proceeds to us are not presently determinable and may be substantially less than the maximum amounts set forth herein. The success of this offering will impact our ability to use the proceeds to execute our business plan. We may have insufficient capital to implement our business plan, potentially resulting in greater operating losses unless we are able to raise the required capital from alternative sources. There is no assurance that alternative capital, if needed, would be available on terms acceptable to us, or at all. Additionally, there is no escrow account and no minimum offering amount, investors could be in a position where they have invested in us, but we are unable to fulfill our objectives due to a lack of interest in this offering. Further, because there is no escrow account in operation and no minimum investment amount, any proceeds from the sale of securities offered by us will be available for our immediate use, despite uncertainty about whether we would be able to use such funds to effectively implement our business plan. Investor funds will not be returned under any circumstances whether during or after the 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.

Purchasers who purchase our securities in this offering pursuant to a securities purchase agreement may have rights not available to purchasers that purchase without the benefit of a securities purchase agreement.

In addition to rights and remedies available to all purchasers in this offering under federal securities and state law, the purchasers that enter into a securities purchase agreement will also be able to bring claims of breach of contract against us. The ability to pursue a claim for breach of contract provides those investors with the means to enforce the covenants uniquely available to them under the securities purchase agreement including, but not limited to: (i) timely delivery of shares; (ii) agreement to not enter into variable rate financings for one (1) year from closing, subject to certain exceptions; (iii) agreement to not enter into any equity financings for thirty (30) days from closing, subject to certain exceptions; and (iv) indemnification for breach of contract.

There is no public market for the Warrants and Pre-Funded Warrants being offered in this offering.

There is no established public trading market for the Warrants and Pre-Funded Warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list the Warrants or Pre-Funded Warrants on any securities exchange or nationally recognized trading system, including The Nasdaq Capital Market. Without an active market, the liquidity of the Warrants or Pre-Funded Warrants will be limited.

The holders of Warrants and Pre-Funded Warrants purchased in this offering will have no rights as common stockholders until such holders exercise their Warrants or Pre-Funded Warrants and acquire shares of our Common Stock, except as set forth in the Warrants and Pre-Funded Warrants.

Until a holder of Warrants and Pre-Funded Warrants acquires the shares of Common Stock upon exercise of the Warrants and Pre-Funded Warrants, as the case may be, such holder will have no rights with respect to the shares of Common Stock underlying such Warrants and Pre-Funded Warrants, except as set forth in the Warrants and Pre-Funded Warrants. Upon exercise of the Warrants and Pre-Funded Warrants, holders will be entitled to exercise the rights of common stockholders only as to matters for which the record date occurs after the exercise date.

The Warrants and Pre-Funded Warrants are speculative in nature.

The Warrants and Pre-Funded Warrants do not confer any rights of Common Stock ownership on their holders, such as voting rights, but rather merely represent the right to acquire shares of Common Stock at a fixed price for a limited period of time. There can be no assurance that the market price of the Common Stock will ever equal or exceed the exercise price of the Warrants, and consequently, it may not ever be profitable for holders of the Warrants to exercise the Warrants.

If we are required to obtain Warrant Stockholder Approval, until we are able to receive such approval, the Warrants will not be exercisable, and if we are unable to obtain such approval for the Warrants, they will have no value.

The Warrants will be exercisable beginning on the effective date of the Warrant Stockholder Approval. The Warrants will not be exercisable until, and unless, we obtain the Warrant Stockholder Approval from our stockholders. While we intend to promptly seek the Warrant Stockholder Approval, there is no guarantee that the Warrant Stockholder Approval will ever be obtained. If we are unable to obtain the Warrant Stockholder Approval, the Warrants will have no value. In addition, we may incur substantial cost in, and management may be required to devote substantial time and attention to, attempting to obtain the Warrant Stockholder Approval.

An investment in this offering may result in uncertain U.S. federal income tax consequences.

The U.S. federal, state, local and non-U.S. tax consequences of an investment in our securities may vary depending on a holder's particular circumstances. Prospective investors are urged to consult their own tax advisors regarding such tax consequences.

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 MVLS Rule, for the previous thirty (30) consecutive trading day period. We were provided a 180-calendar day period to regain compliance with the MVLS 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 MVLS 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 MVLS 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 MVLS 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 MVLS 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 MVLS 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 MVLS 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 the 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 will remain listed and trading on the Nasdaq Capital Market at least pending the expiration of the extension granted to us by the Panel.

We intend to actively monitor the closing bid price of our common stock, our MVLS, and our stockholders' equity and evaluate all 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 will be 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 will be combined into one share of common stock. Although we are taking definitive steps to regain compliance with the applicable rules, there can be no assurance that we will be granted a further extension to do so or that any actions we take will be successful in our effort to regain compliance with the listing rules. Furthermore, 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.

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 and the documents incorporated by reference in this prospectus contain forward-looking statements that can involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this prospectus, the documents incorporated by reference in this prospectus, and the documents that we reference in this prospectus and have filed with the SEC as exhibits to the registration statement of which this prospectus is a part, 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 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;
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- 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; and
- the impact of laws and regulations.

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 and the documents incorporated by reference 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 until after we distribute this prospectus, 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.

MARKET AND INDUSTRY DATA

This prospectus and the documents incorporated by reference in this prospectus 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 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 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
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- “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 and is not incorporated herein.

TRADEMARKS, SERVICE MARKS AND TRADENAMES

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

We estimate that the net proceeds from this offering will be approximately \$2.5 million, after deducting the Placement Agent’s fees and estimated offering expenses payable by us, and assuming the full cash exercise of the Pre-Funded Warrants issued in this offering and no exercise of the Warrants or Placement Agent Warrants issued in this offering. However, because this is a reasonable best efforts offering and there is no minimum offering amount required as a condition to the closing of this offering and we may not sell all or any of these securities offered pursuant to this prospectus, the actual offering amount, the Placement Agent’s fees and net proceeds to us are not presently determinable and may be substantially less than the maximum amounts set forth on the cover page of this prospectus. Based on the public offering price set forth above, we estimate that our net proceeds from the sale of 75%, 50%, and 25% of the securities offered in this offering would be approximately \$1.8 million, \$1.0 million, and \$0.3 million, respectively, after deducting the Placement Agent’s fees and estimated offering expenses payable by us, and assuming the full cash exercise of the Pre-Funded Warrants issued in this offering and no exercise of the Warrants or Placement Agent Warrants issued in this offering.

These estimates exclude the proceeds, if any, from the cash exercise of the Warrants issued in this offering. If all of the Warrants issued in this offering were to be exercised in cash at an exercise price of \$1.32 per share of Common Stock, we would receive additional proceeds of approximately \$3.0 million. We cannot predict when or if these Warrants will be exercised. It is possible that these Warrants may expire and may never be exercised. Additionally, the Warrants contain a cashless exercise provision that permit exercise of Warrants on a cashless basis at any time where there is no effective registration statement under the Securities Act covering the issuance of the underlying shares.

These estimates also exclude the proceeds, if any, from the cash exercise of the Placement Agent Warrants issued in this offering. If all of the Placement Agent Warrants issued in this offering were to be exercised in cash at an exercise price of \$1.65 per share of Common Stock, we would receive additional proceeds of approximately \$0.3 million. We cannot predict when or if these Placement Agent Warrants will be exercised. It is possible that these Placement Agent Warrants may expire and may never be exercised. Additionally, the Placement Agent Warrants contain a cashless exercise provision that permit exercise of Placement Agent Warrants on a cashless basis at any time where there is no effective registration statement under the Securities Act covering the issuance of the underlying shares.

We intend to use the net proceeds from this offering 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.

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.

DILUTION

Except as otherwise noted, all information in this prospectus reflects and assumes (i) the full cash exercise of the Pre-Funded Warrants issued in this offering and (ii) no exercise of the Warrants or Placement Agent Warrants issued in this offering.

If you invest in this offering, your ownership interest will be diluted to the extent of the difference between the public offering price per share of Common Stock and accompanying Warrant and the as adjusted net tangible book value per share of our common stock immediately after this offering.

The historical net tangible book value of our common stock as of December 31, 2025 was \$6.2 million or \$1.8509 per share. Historical net tangible book value per share of Common Stock represents our total tangible assets (total assets less intangible assets) less total liabilities divided by the number of shares of Common Stock outstanding as of that date. After giving effect to 133,108 shares issued subsequent to December 31, 2025, as if such share issuances had occurred on December 31, 2025 (the “pro forma adjustments”), our pro forma net tangible book value as of December 31, 2025 would have been \$3.5 million, or approximately \$1.0178 per share of Common Stock.

After giving further effect to the sale of 1,028,788 shares of Common Stock, Pre-Funded Warrants to purchase 1,243,940 shares of Common Stock, and accompanying Warrants in this offering at an combined public offering price of \$1.32 per share of Common Stock and accompanying Warrant for net proceeds of approximately \$2.5 million, after deducting the Placement Agent’s fees and estimated offering expenses payable by us, as if such offering and such share issuances had occurred on December 31, 2025, our pro forma as adjusted net tangible book value as of December 31, 2025 would have been \$9.4 million, or approximately \$1.0378 per share of Common Stock. This represents an immediate increase in net tangible book value per share of \$0.0200 to the existing stockholders and an immediate dilution in net tangible book value per share of \$0.2822 to new investors. We determine dilution by subtracting the pro forma as adjusted net tangible book value per share after this offering from the amount of cash that a new investor paid for the securities offered in this offering. The following table illustrates this per share dilution to new investors:

Public offering price per share of Common Stock and accompanying Warrant	\$	1.32
Historical net tangible book value per share as of December 31, 2025	\$	1.8509
Decrease in net tangible book value per share after giving effect to the pro forma adjustments	\$	(0.8331)
Pro forma net tangible book value per share as of December 31, 2025	\$	1.0178
Increase in pro forma as adjusted net tangible book value per share after giving effect to the offering	\$	0.0200
Pro forma as adjusted net tangible book value per share as of December 31, 2025	\$	1.0378
Dilution in net tangible book value per share to new investors participating in this offering	\$	0.2822

The above discussion and table are based on 3,325,987 shares of our common stock outstanding as of December 31, 2025 (giving effect to the 1-for-20 reverse stock split of our common stock effected on March 30, 2026), and excludes as of such date (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 our 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;
- 428,511 shares of common stock underlying the pre-funded warrants that were issued in the November 18 Offering, at an exercise price of \$0.0002 per share;
- 605,511 shares of common stock underlying the November 18 Warrants that were issued in 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 the November 24 Offering, 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 the December 14 Offering, at an exercise price of \$6.60 per share;
- 18,296 shares of common stock issuable upon exercise of the warrants to be 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; and
- 159,091 shares of common stock reserved for issuance upon the exercise of the Placement Agent Warrants to be issued in connection with this offering.

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.

DESCRIPTION OF CAPITAL STOCK

Authorized Capital Stock

Our amended and restated certificate of incorporation authorizes us to issue 310,000,000 shares of capital stock, which may consist of: (i) 300,000,000 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 trades on The Nasdaq Capital Market under the symbol "FBLG."

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 SECURITIES WE ARE OFFERING

We are offering 1,028,788 shares of Common Stock, together with 2,272,728 Warrants to purchase up to 2,272,728 shares of Common Stock. We are also offering Pre-Funded Warrants to purchase up to 1,243,940 shares of Common Stock to those purchasers whose purchase of shares of Common Stock in this offering would result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding Common Stock following the consummation of this offering in lieu of the shares of our Common Stock that would result in ownership in excess of 4.99% (or, at the election of the purchaser, 9.99%). Each Pre-Funded Warrant will be exercisable for one (1) share of Common Stock. Each Pre-Funded Warrant is being issued together with the same Warrant described above being issued with each share of Common Stock. The shares of Common Stock or Pre-Funded Warrants, as the case may be, and the accompanying Warrants, can only be

purchased together in this offering, but the shares of Common Stock and Pre-Funded Warrants and accompanying Warrants are immediately separable and will be issued separately in this offering. We are also registering the shares of Common Stock issuable from time to time upon exercise of the Pre-Funded Warrants and Warrants offered hereby.

Common Stock

The material terms and provisions of our common stock are described under the caption “*Description of Capital Stock*”.

Warrants

The following summary of certain terms and provisions of the Warrants included with the shares of Common Stock and the Pre-Funded Warrants that are being issued hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the Warrants, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of Warrant for a complete description of the terms and conditions of the Warrants.

Exercise Price, Duration and Form

Each Warrant will have an exercise price of \$1.32 per share. The Warrants will be exercisable beginning on the effective date of the Warrant Stockholder Approval. The Warrants will expire on the five (5) year anniversary of the effective date of the Warrant Stockholder Approval. The Warrants will be issued separately from the Common Stock and may be transferred separately immediately thereafter. The Warrants will be issued in certificated form only.

We intend to promptly, and in no event later than ninety (90) days after the consummation of this offering, seek the Warrant Stockholder Approval, but we cannot assure you that such approval will be obtained. We have agreed with the investors in this offering that, if we do not obtain the Warrant Stockholder Approval at the first stockholder meeting for such purpose after this offering, we will call a stockholder meeting every ninety (90) days thereafter until the earlier of the date we obtain such approval or the Warrants are no longer outstanding.

Exercise Price Adjustments

The exercise price of the Warrants will be subject to adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock.

Exercisability

The Warrants will be exercisable, at the option of the holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). The holder (together with its affiliates) may not exercise any portion of such holder’s Warrants to the extent that the holder would own more than 4.99% (or, at the election of the holder, 9.99%) of the outstanding common stock immediately after exercise, as such percentage ownership is determined in accordance with the terms of the Warrants, except that upon at least 61 days’ prior notice from the holder to us, the holder may decrease or increase such percentage ownership of outstanding stock after exercising the holder’s Warrants but such percentage shall not exceed 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise.

Cashless Exercise

If, at the time the holder exercises its Warrants, a registration statement registering the issuance or resale of the Warrant Shares under the Securities Act is not then effective or available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) a number of Warrant Shares net of a number of shares of common stock with market value equal to the total exercise price, as determined according to a formula set forth in the Warrant.

Fundamental Transactions

In the event of a fundamental transaction, as described in the Warrants and generally our merger or consolidation with or into another person (other than a reincorporation in a different state), the sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of our assets, any, direct or indirect, purchase offer, tender offer or exchange offer (whether by us or another person) is completed pursuant to which holders of our common stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of more than 50% of the voting power of our common equity, any reclassification, reorganization or recapitalization of our common stock or any compulsory share exchange pursuant to which our common stock is effectively converted into or exchanged for other securities, cash or property, the consummation, directly or indirectly, of a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) whereby another person or group acquires more than 50% of the voting power of the common equity of the Company (other than Pete O'Heeron, our Chief Executive Officer, through his holdings of common stock and Series C Preferred Stock), the holder will have the right to receive as alternative consideration, for each share of our common stock that would have been issuable upon such exercise immediately prior to the occurrence of such fundamental transaction, at the option of the holder, the number of shares of common stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration receivable as a result of such transaction by a holder of the number of shares of our common stock for which the Warrant is exercisable immediately prior to such event. Additionally, as more fully described in the Warrants, in the event of certain fundamental transactions, the holders of those Warrants will be entitled, at the holder's option, to receive consideration in an amount equal to the Black Scholes Value (as defined in the Warrants) of the remaining unexercised portion of the Warrants within the later of five (5) days of the holder's election or on the date of consummation of such transaction.

Transferability

Subject to applicable securities laws and procedures provided in the Warrant, a Warrant may be transferred at the option of the holder upon surrender of such Warrant to us together with the appropriate instruments of transfer.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the Warrants. Rather, the number of shares of common stock to be issued will, at our election, either be rounded up to the next whole share or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Trading Market

There is no established public trading market for the Warrants, and we do not expect such a market to develop. We do not intend to apply to list the Warrants on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the Warrants will be limited.

Right as a Stockholder

Except as otherwise provided in the Warrants or by virtue of the holder's ownership of shares of our common stock, such holder of Warrants does not have the rights or privileges of a holder of our common stock, including any voting rights, dividends or other rights, until such holder exercises such holder's Warrants.

Pre-Funded Warrants

The following summary of certain terms and provisions of the Pre-Funded Warrants that are being issued hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the Pre-Funded Warrant, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of Pre-Funded Warrant for a complete description of the terms and conditions of the Pre-Funded Warrants.

Exercise Price, Duration and Form

The Pre-Funded Warrants will be immediately exercisable and may be exercised at any time until all of the Pre-Funded Warrants are exercised in full.

Each Pre-Funded Warrant will have an initial exercise price of \$0.00001 per share. The Pre-Funded Warrants will be exercisable immediately, and may be exercised at any time until all of the Pre-Funded Warrants are exercised in full. The Pre-Funded Warrants will be issued separately from the accompanying Warrants. The Pre-Funded Warrants will be issued in certificated form only.

Exercise Price Adjustments

The exercise price of the Pre-Funded Warrants will be subject to adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock.

Exercisability

The Pre-Funded Warrants will be exercisable, at the option of the holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). The holder (together with its affiliates) may not exercise any portion of such holder's Pre-Funded Warrants to the extent that the holder would own more than 4.99% (or, at the election of the holder, 9.99%) of the outstanding common stock immediately after exercise, as such percentage ownership is determined in accordance with the terms of the Pre-Funded Warrants. Purchasers of Pre-Funded Warrants in this offering may also elect prior to the issuance of the Pre-Funded Warrants to have the initial exercise limitation set at 9.99% of our outstanding Common Stock, except that upon at least 61 days' prior notice from the holder to us, the holder may decrease or increase such percentage ownership of outstanding stock after exercising the holder's Pre-Funded Warrants but such percentage shall not exceed 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise.

Cashless Exercise

In lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) a number of Pre-Funded Warrant Shares net of a number of shares of common stock with market value equal to the total exercise price, as determined according to a formula set forth in the Pre-Funded Warrant.

Fundamental Transactions

In the event of a fundamental transaction, as described in the Pre-Funded Warrants and generally our merger or consolidation with or into another person (other than a reincorporation in a different state), the sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of our assets, , any, direct or indirect, purchase offer, tender offer or exchange offer (whether by us or another person) is completed pursuant to which holders of our common stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of more than 50% of the voting power of our common equity, any reclassification, reorganization or recapitalization of our common stock or any compulsory share exchange pursuant to which our common stock is effectively converted into or exchanged for other securities, cash or property, the consummation, directly or indirectly, of a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) whereby another person or group acquires more than 50% of the voting power of the common equity of the Company (other than Pete O'Heeron, our Chief Executive Officer, through his holdings of common stock and Series C Preferred Stock), the holder will have the right to receive as alternative consideration, for each share of our common stock that would have been issuable upon such exercise immediately prior to the occurrence of such fundamental transaction, at the option of the holder, the number of shares of common stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration receivable as a result of such transaction by a holder of the number of shares of our common stock for which the Pre-Funded Warrant is exercisable immediately prior to such event.

Transferability

Subject to applicable securities laws and procedures provided in the Pre-Funded Warrant, a Pre-Funded Warrant may be transferred at the option of the holder upon surrender of such Pre-Funded Warrant to us together with the appropriate instruments of transfer.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the Pre-Funded Warrants. Rather, the number of shares of common stock to be issued will, at our election, either be rounded up to the next whole share or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Trading Market

There is no established public trading market for the Pre-Funded Warrants, and we do not expect such a market to develop. We do not intend to apply to list the Pre-Funded Warrants on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the Pre-Funded Warrants will be limited.

Right as a Stockholder

Except as otherwise provided in the Pre-Funded Warrants or by virtue of the holder's ownership of shares of our common stock, such holder of Pre-Funded Warrants does not have the rights or privileges of a holder of our common stock, including any voting rights, dividends or other rights, until such holder exercises such holder's Pre-Funded Warrants.

Placement Agent Warrants

We have also agreed to issue to the Placement Agent or its designees as compensation in connection with this offering, the Placement Agent Warrants to purchase up to one (1) share of Common Stock. The Placement Agent Warrants will be exercisable beginning on the effective date of the Warrant Stockholder Approval and will have substantially the same terms as the Warrants described above, except that the Placement Agent Warrants will have an exercise price of \$1.65 per share (representing 125% of the combined public offering price per share and accompanying Warrant) and a termination date that will be five (5) years from the commencement of the sales pursuant to this offering. See "*Plan of Distribution*" below.

PLAN OF DISTRIBUTION

H.C. Wainwright & Co., LLC has agreed to act as our exclusive placement agent in connection with this offering subject to the terms and conditions of the engagement letter dated November 10, 2025 (as amended on March 12, 2026, the "Engagement Agreement"). The Placement Agent is not purchasing or selling any of the shares of common stock offered by this prospectus, nor is it required to arrange the purchase or sale of any specific number or dollar amount of shares of common stock but has agreed to use its reasonable best efforts to arrange for the sale of all of the shares of common stock offered hereby. Therefore, we may not sell the entire number of shares of common stock offered pursuant to this prospectus. This is a reasonable best efforts offering, and there is no minimum offering amount required as a condition to the closing of this offering. Therefore, we may not sell all of the securities being offered hereby. The terms of this offering are subject to market conditions and negotiations between us, the Placement Agent and prospective investors. Under the terms of the Engagement Agreement, the Placement Agent has no authority to bind us. The Placement Agent may engage sub-agents or selected dealers to assist with this offering.

Investors purchasing securities offered hereby will have the option to execute a securities purchase agreement with us. In addition to rights and remedies available to all purchasers in this offering under federal securities and state law, the purchasers which enter into a securities purchase agreement will also be able to bring claims of breach of contract against us. The ability to pursue a claim for breach of contract is material to larger purchasers in this offering as a means to enforce the following covenants uniquely available to them under the securities purchase agreement: (i) a covenant to not enter into variable rate financings for a period of one (1) year following the closing of the offering,

subject to certain exceptions; and (ii) a covenant to not enter into any equity financings for thirty (30) days from closing of the offering, subject to certain exceptions. The nature of the representations, warranties and covenants in the securities purchase agreements shall include:

- standard issuer representations and warranties on matters such as organization, qualification, authorization, no conflict, no governmental filings required, current in SEC filings, no litigation, labor or other compliance issues, environmental, intellectual property and title matters and compliance with various laws such as the Foreign Corrupt Practices Act; and
- covenants regarding matters such as no integration with other offerings, filing of a Current Report on Form 8-K to disclose entering into these securities purchase agreements, no stockholder rights plans, no material nonpublic information, use of proceeds, indemnification of purchasers, reservation and listing of shares of Common Stock and no subsequent equity sales for thirty (30) days.

We expect to deliver the shares of Common Stock, Warrants and Pre-Funded Warrants being offered pursuant to this prospectus on or about April 2, 2026, subject to satisfaction of customary closing conditions.

We have agreed to indemnify the Placement Agent and specified other persons against specified liabilities, including liabilities under the Securities Act, and to contribute to payments the Placement Agent may be required to make in respect thereof.

Fees and Expenses

We have agreed to pay the Placement Agent a total cash fee equal to 7.0% of the aggregate gross proceeds raised in this offering and a management fee equal to 1.0% of the aggregate gross proceeds raised in this offering. We will also reimburse the Placement Agent's legal fees and expenses in an amount of \$100,000. We estimate the total offering expenses of this offering that will be payable by us, excluding the Placement Agent's fees and expenses, will be approximately \$140,950. After deducting the Placement Agent's fees and our estimated offering expenses, we expect the net proceeds from this offering to be approximately \$2.5 million.

	Per Share of Common Stock and Accompanying Warrant	Per Pre-Funded Warrant and Accompanying Warrant	Total
Combined public offering price	\$ 1.32000	\$ 1.31999	\$ 2,999,988.52
Placement Agent fee	\$ 0.09240	\$ 0.09240	\$ 210,000.07
Proceeds to us, before expenses ⁽¹⁾	\$ 1.22760	\$ 1.22759	\$ 2,789,988.45

⁽¹⁾ Because there is no minimum number of securities or amount of proceeds required as a condition to closing in this offering, the actual offering amount, Placement Agent fees, estimated expenses and net proceeds to us, if any, are not presently determinable and may be substantially less than the total maximum offering amounts set forth above. The amount of the proceeds to us presented in this table does not give effect to any exercise of the Warrants or Placement Agent Warrants offered hereby.

Placement Agent Warrants

We have agreed to grant Placement Agent Warrants to the Placement Agent or its designees to purchase a number of shares of our Common Stock equal to 7.0% of the aggregate number of shares of Common Stock and Pre-Funded Warrants sold to the investors in this offering. The Placement Agent Warrants will have an exercise price of \$1.65 per share (equal to 125% of the combined public offering price per share of Common Stock and accompanying Warrant), will be exercisable beginning on the effective date of the Warrant Stockholder Approval and will terminate on the five (5) year anniversary of the commencement of sales in this offering. The Placement Agent Warrants are registered on the registration statement of which this prospectus is a part. The form of the Placement Agent Warrant will be included as an exhibit to this Registration Statement of which this prospectus forms a part.

Right of First Refusal

We have granted the Placement Agent a right of first refusal for a period of nine (9) months following the consummation of this offering to act as sole book-running manager, sole underwriter or sole placement agent for each and every future public or private offering or other capital-raising financing of equity, equity-linked or debt securities by us or any of our successors or subsidiaries, subject to certain exceptions. Notwithstanding anything to the contrary contained in this paragraph, in accordance with FINRA Rule 5110(g)(6)(A)(i), any such right of first refusal described in this paragraph shall not have a duration of more than three years from the commencement of sales of the first offering or the termination date of the term of the Engagement Agreement.

Indemnification

We have agreed to indemnify the Placement Agent against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the Placement Agent may be required to make for these liabilities.

Tail

We have also agreed to pay the Placement Agent a tail fee equal to the cash and warrant compensation in this offering, if any investor, subject to certain exceptions, who with our written approval was contacted or introduced to us by the placement agent during the term of its engagement, provides us with capital in any public or private offering or other financing or capital raising transaction during the twelve (12) month period following expiration or termination of the Engagement Agreement, subject to certain exceptions.

Other Relationships

From time to time, the Placement Agent or its affiliates has provided, or may provide in the future, various advisory, investment and commercial banking and other services to us or our affiliates in the ordinary course of business, for which it has or may receive customary fees and commissions. Except as disclosed in this prospectus, we have no present arrangements with the Placement Agent for any services.

H.C. Wainwright & Co., LLC acted as the placement agent in a best efforts public offering that closed in November 2025. The Placement Agent received 7.0% of the aggregate gross proceeds raised in the offering, 1.0% of the aggregate gross proceeds raised in the offering, and reimbursement of certain of its expenses. Additionally, the Company issued to the Placement Agent (or its designees) warrants to purchase 7.0% of the number of shares of Common Stock sold in the offering, or up to 15,672 shares of common stock, at an exercise price of \$8.38 per share. The exercisability of the warrants is subject to stockholder approval.

H.C. Wainwright & Co., LLC also acted as the placement agent in a best efforts public offering that closed in December 2025. The Placement Agent received 7.0% of the aggregate gross proceeds raised in the offering, 1.0% of the aggregate gross proceeds raised in the offering, and reimbursement of certain of its expenses. Additionally, the Company issued to the Placement Agent (or its designees) warrants to purchase 7.0% of the number of shares of Common Stock sold in the offering, or up to 18,295 shares of common stock, at an exercise price of \$8.25 per share. The exercisability of the warrants is subject to stockholder approval.

In addition, in the ordinary course of their business activities, the Placement Agent and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) 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. The Placement Agent and 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.

Determination of Offering Price

The combined public offering price per share of Common Stock and accompanying Warrant and the combined public offering price per Pre-Funded Warrant and accompanying Warrant we are offering, and the exercise prices and other

terms of the Warrants were negotiated between us and the investors, in consultation with the Placement Agent based on the trading of our Common Stock prior to this offering, among other things. Other factors considered in determining the offering prices of the securities we are offering and the exercise prices and other terms of the Warrants include the history and prospects of our company, the stage of development of our business, our business plans for the future and the extent to which they have been implemented, an assessment of our management, general conditions of the securities markets at the time of the offering and such other factors as were deemed relevant.

Lock-Up Agreements

Each of our executive officers and directors have agreed to be subject to a lock-up period of thirty (30) days following the date of closing of the offering pursuant to this prospectus. This means that, during the applicable lock-up period, without the placement agent's prior written consent, we and such persons may not offer for sale, contract to sell, sell, distribute, grant any option, right or warrant to purchase, pledge, hypothecate or otherwise dispose of, directly or indirectly, any of our shares of Common Stock or any securities convertible into, or exercisable or exchangeable for, shares of Common Stock, subject to customary exceptions. The Placement Agent may waive the terms of these lock-up agreements in its sole discretion and without notice.

In addition, we have also agreed to a similar lock-up restriction on the issuance and sale of our securities for the thirty (30) days following the closing of this offering, subject to certain exceptions. In addition, we have agreed not issue any securities that are subject to a price reset based on the trading prices of our Common Stock or upon a specified or contingent event in the future or enter into any agreement to issue securities at a future determined price for a period of one (1) year following the closing date of this offering, subject to an exception.

Regulation M Compliance

The Placement Agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by it and any profit realized on the sale of our securities offered hereby by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. The placement agent will be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of our securities by the placement agent. Under these rules and regulations, the placement agent may not (i) engage in any stabilization activity in connection with our securities; and (ii) bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until they have completed their participation in the distribution.

Listing and Transfer Agent

Our Common Stock is listed on the Nasdaq Capital Market and trades under the symbol "FBLG." 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. There is no established public trading market for the Warrants or the Pre-Funded Warrants, and we do not plan on making an application to list the Warrants or the Pre-Funded Warrants on the Nasdaq Capital Market, any national securities exchange or other nationally recognized trading system.

Electronic Distribution

This prospectus may be made available in electronic format on websites or through other online services maintained by the Company and/or the placement agent, or by their respective affiliates. Other than this prospectus in electronic format, the information on the Company's and/or the placement agent's websites and any information contained in any other websites maintained by the Company and/or the placement agent is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or the placement agent in its capacity as an underwriter, and should not be relied upon by investors.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Sichenzia Ross Ference Carmel LLP. Certain legal matters will be passed upon for the Placement Agent by Haynes and Boone, LLP, New York, New York.

EXPERTS

The consolidated 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 consolidated financial statements are incorporated herein by reference in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act, with respect to the shares of common stock being offered by this prospectus. This prospectus, which constitutes part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits and schedules filed therewith. Statements contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement.

We are subject to the information and reporting requirements of the Exchange Act and, in accordance with such law, will file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. You may obtain documents that we file with the SEC at www.sec.gov. Our website address is www.fibrobiologics.com. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus. Our website address is included in this prospectus as an inactive textual reference only.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

SEC rules permit us to "incorporate by reference" certain information into this prospectus, which means that we can disclose important information about us by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be a part of this prospectus, except for information superseded by information contained in this prospectus or in any subsequently filed incorporated document. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus. This means that you must carefully review all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded. However, we undertake no obligation to update or revise any statements we make, except as required by law.

This prospectus incorporates by reference the documents listed below and any filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents furnished and not filed with the SEC) on or after the date of this prospectus and prior to the termination of the offering covered by this prospectus:

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2025 filed on February 24, 2026, as amended by Amendment No. 1 to [Form 10-K](#) filed on March 13, 2026;
 - our Current Reports on Form 8-K filed with the SEC on [January 2, 2026](#), [February 6, 2026](#), [February 23, 2026](#), and [March 6, 2026](#) (except, in each case, any information, including exhibits, furnished and not filed with the SEC); and
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- 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.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed to be modified or superseded to the extent that a statement contained in this prospectus or in any subsequently filed document which is or is deemed to be incorporated by reference in this prospectus modifies or supersedes that statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We will furnish without charge to each person, including any beneficial owner, to whom a prospectus is delivered, upon written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents. Any such request may be made by writing or calling us at the following address or phone number:

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



FibroBiologics, Inc.

1,028,788 Shares of Common Stock

1,243,940 Pre-Funded Warrants to Purchase up to 1,243,940 Shares of Common Stock

2,272,728 Warrants to Purchase up to 2,272,728 Shares of Common Stock

159,091 Placement Agent Warrants to Purchase up to 159,091 Shares of Common Stock

3,675,759 Shares of Common Stock Issuable Upon Exercise of the Warrants, Pre-Funded Warrants, and Placement Agent Warrants

PRELIMINARY PROSPECTUS

H.C. Wainwright & Co.

March 31, 2026
