PROSPECTUS SUPPLEMENT

(to the Prospectus dated July 30, 2021)

Up to \$40,000,000



Shares of Common Stock

In accordance with the terms of the At Market Issuance Sales Agreement entered into with Cantor Fitzgerald & Co. ("Cantor"), H.C. Wainwright & Co., LLC ("Wainwright"), B. Riley Securities, Inc. (formerly B. Riley FBR, Inc.) ("B. Riley"), and Dawson James Securities, Inc. ("Dawson James") (each, an "Agent" and together, the "Agents"), dated May 29, 2020 (the "Sales Agreement"), we may offer and sell under this prospectus supplement shares of our common stock, \$0.001 par value per share (the "Common Stock"), having an aggregate offering price of up to \$40,000,000 from time to time through or to the Agents, acting as sales agent or principal. On July 21, 2021, we filed a registration statement on Form S-3 (No. 333-258145), which became effective on July 30, 2021 (the "Registration Statement"). This prospectus supplement is being filed to reflect our sales under the Sales Agreement pursuant to the Registration Statement. Previously, sales under the Sales Agreement were made under a registration statement on Form S-3 (No. 333-238327), which became effective on May 26, 2020 (the "2020 Registration Statement"). References in this prospectus supplement to any prior sales of Common Stock under the Sales Agreement prior to the date of this prospectus supplement shall be deemed references to sales under the 2020 Registration Statement. As of the date of this prospectus supplement, we have sold 19,411,915 shares of Common Stock under the Sales Agreement and 2020 Registration Statement for approximately \$48.7 million in gross proceeds. We may offer and sell the number of shares of Common Stock having a maximum aggregate sales price of up to \$40 million registered on the Registration Statement on which this offering is being made pursuant to this prospectus supplement.

Our Common Stock is traded on The Nasdaq Capital Market (the "Exchange") under the symbol "FBIO." The last reported sale price of our Common Stock on May 17, 2023 was \$0.6783 per share.

Sales of our Common Stock, if any, under this prospectus supplement will be made by any method permitted that is deemed an "at the market offering" as defined in Rule 415 under the Securities Act of 1933, as amended (the "Securities Act"). The Agents are not required to sell any specific amount of shares of our Common Stock, but will act as our sales agents using commercially reasonable efforts consistent with their normal trading and sales practices. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The Agents will be entitled to compensation at a commission rate of 3.0% of the gross sales price per share of our Common Stock sold. In connection with the sale of our Common Stock on our behalf, each of the Agents will be deemed to be an "underwriter" within the meaning of the Securities Act, and the compensation of the Agents will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to the Agents with respect to certain liabilities, including liabilities under the Securities Act

Investing in our Common Stock involves a high degree of risk. See "Risk Factors" beginning on page S-3 of this prospectus supplement and in the documents incorporated by reference therein and any free writing prospectus that we have authorized for use in connection with this offering.

Neither the Securities and Exchange Commission (the "SEC") nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

Cantor H.C. Wainwright & Co. B. Riley Securities Dawson James

The date of this prospectus supplement is May 26, 2023

PROSPECTUS SUPPLEMENT

IMPORTANT NOTICE ABOUT INFORMATION IN THIS PROSPECTUS SUPPLEMENT	<u>S-ii</u>
FORWARD-LOOKING STATEMENTS	<u>S-iii</u>
PROSPECTUS SUPPLEMENT SUMMARY	<u>S-1</u>
THE OFFERING	<u>S-2</u>
<u>RISK FACTORS</u>	<u>S-3</u>
CAPITALIZATION	<u>S-6</u>
<u>USE OF PROCEEDS</u>	<u>S-7</u>
DILUTION	<u>S-8</u>
<u>DIVIDEND POLICY</u>	<u>S-9</u>
DESCRIPTION OF SECURITIES WE ARE OFFERING	<u>S-10</u>
CERTAIN U.S. FEDERAL INCOME TAX CONSIDERATIONS	S-11
PLAN OF DISTRIBUTION	<u>S-16</u>
DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES	<u>S-17</u>
LEGAL MATTERS	<u>S-17</u>
EXPERTS	<u>S-17</u>
WHERE YOU CAN FIND ADDITIONAL INFORMATION	<u>S-17</u>
INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE	S-17

ABOUT THIS PROSPECTUS	<u>i</u>
FORWARD-LOOKING STATEMENTS	i
SUMMARY	1
DESCRIPTION OF CAPITAL STOCK	1
DESCRIPTION OF WARRANTS	5
DESCRIPTION OF DEBT SECURITIES	5
DESCRIPTION OF UNITS	9
PLAN OF DISTRIBUTION	<u>10</u>
LEGAL MATTERS	<u>11</u>
EXPERTS	<u>11</u>
WHERE YOU CAN FIND MORE INFORMATION	<u>11</u>
INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE	<u>11</u>

S-i

IMPORTANT NOTICE ABOUT INFORMATION IN THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement, which describes the specific terms of this offering, the Common Stock, and also adds to and updates information contained in the accompanying base prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying base prospectus. The second part is the accompanying base prospectus, which gives more general information about securities we may offer from time to time, some of which may not apply to this offering of Common Stock. Generally, when we refer only to the "prospectus" we are referring to both this prospectus supplement and the accompanying base prospectus combined. If the information relating to this offering varies between this prospectus supplement and the accompanying base prospectus, you should rely on the information in this prospectus supplement.

Any statement made in this prospectus supplement or in a document incorporated or deemed to be incorporated by reference into this prospectus supplement will be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement or in any other subsequently filed document that is also incorporated by reference into this prospectus supplement 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 supplement. Please read "Available Information" and "Information Incorporated by Reference" in this prospectus supplement.

You should rely only on the information contained in or incorporated by reference in this prospectus supplement and any free writing prospectus that we may authorize for use in connection with this offering. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information appearing in this prospectus supplement, the documents incorporated by reference in this prospectus supplement and any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospectus may have changed since those dates. You should read this prospectus supplement, the documents incorporated by reference in this prospectus supplement and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision.

Unless otherwise indicated in this prospectus supplement or the context otherwise requires, all references to "we," "us," "our," "the Company," and "Fortress" refer to Fortress Biotech, Inc. individually, to one or more of its subsidiaries and/or partner companies, or to all such entities as a group, as dictated by context. Generally, "subsidiary" refers to a private Fortress subsidiary, "partner company" refers to a public Fortress subsidiary, and "partner" refers to entities with whom one of the foregoing parties has a significant business relationship, such as an exclusive license or an ongoing product-related payment obligation. The context in which any such term is used throughout this document, however, may dictate a different construal from the foregoing.

S-ii

FORWARD-LOOKING STATEMENTS

This prospectus supplement, including the documents that we incorporate by reference, may contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Statements in this prospectus supplement, and documents we incorporate by reference, that are not descriptions of historical facts are forward-looking statements that are based on management's current expectations and are subject to risks and uncertainties that could negatively affect our business, operating results, financial condition and stock price. For such forward-looking statements, we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995. We have attempted to identify forward-looking statements by terminology including "anticipates," "believes," "can," "continue," "could," "estimates," "expects," "intends," "may," "might," "plans," "potential," "predicts," "should," or "will" or the negative of these terms or other comparable terminology. Factors that could cause actual results to differ materially from those currently anticipated include those set forth under "Risk Factors" including, in particular, risks relating to:

- · our growth strategy;
- financing and strategic agreements and relationships;
- our need for substantial additional funds and uncertainties relating to financings;
- · our ability to identify, acquire, close and integrate product candidates successfully and on a timely basis;
- · our ability to attract, integrate and retain key personnel;
- · the early stage of products under development;
- · the results of research and development activities;
- · uncertainties relating to preclinical and clinical testing;
- the ability to secure and maintain third-party manufacturing, marketing and distribution of our and our partner companies' products and product candidates;

- government regulation;
- patent and intellectual property matters; and
- competition.

You should read this prospectus supplement and the documents that we reference herein completely and with the understanding that our actual future results may be materially different from what we currently expect. You should assume that the information appearing in this prospectus supplement and any document incorporated by reference is accurate as of its date only. Because the risk factors referred to above could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We qualify all of the information presented in this prospectus supplement, the accompanying prospectus and any document incorporated herein by reference, and particularly our forward-looking statements, by these cautionary statements.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information contained elsewhere in or incorporated by reference into this prospectus supplement. Because this is a summary, it may not contain all of the information that may be important to you and to your investment decision. The following summary is qualified in its entirety by the more detailed information and financial statements and notes thereto included elsewhere in this prospectus supplement and the documents incorporated herein by reference and other documents to which we refer. You should read "Risk Factors" beginning on page S-3 of this prospectus supplement, as well as the information appearing under the caption "Item 1A. Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022 and "Item 1A. Risk Factors" in our Quarterly Report on Form 10-O for the quarter ended March 31, 2023, as may be updated by our subsequently filed Exchange Act reports, for more information about important risks that you should consider carefully before buying our securities.

Overview

Fortress Biotech, Inc. ("Fortress" or the "Company") is a biopharmaceutical company dedicated to acquiring, developing and commercializing pharmaceutical and biotechnology products and product candidates, which we do through Fortress itself and through partner companies and subsidiaries. Fortress has a talented and experienced business development team, comprising scientists, doctors and finance professionals, who work in concert with our extensive network of key opinion leaders to identify and evaluate promising products and product candidates for potential acquisition. We have executed arrangements in partnership with some of the world's foremost universities, research institutes and pharmaceutical companies, including City of Hope National Medical Center, Fred Hutchinson Cancer Center, St. Jude Children's Research Hospital, Dana-Farber Cancer Institute, Nationwide Children's Hospital, Cincinnati Children's Hospital Medical Center, Columbia University, the University of Pennsylvania, Mayo Foundation for Medical Education and Research, AstraZeneca plc., and Dr. Reddy's Laboratories, Ltd.

Business Strategy

Following the exclusive license or other acquisition of the intellectual property underpinning a product or product candidate, Fortress leverages its business, scientific, regulatory, legal and financial expertise to help the partner companies and subsidiaries achieve their goals. Our partner companies and subsidiaries then assess a broad range of strategic arrangements to accelerate and provide additional funding to support research and development, including joint ventures, partnerships, out-licensings, sales transactions, and public and private financings. To date, four partner companies are publicly-traded, and two of our subsidiaries have consummated strategic partnerships with industry leaders AstraZeneca plc, as successor-in-interest to Alexion Pharmaceuticals, Inc., ("AstraZeneca") and Sentynl Therapeutics, Inc. ("Sentynl").

Our subsidiaries and partner companies that are pursuing development and/or commercialization of biopharmaceutical products and product candidates are Aevitas Therapeutics, Inc. ("Aevitas"), Avenue Therapeutics, Inc. (Nasdaq: ATXI, "Avenue"), Baergic Bio, Inc. ("Baergic," a subsidiary of Avenue), Cellvation, Inc. ("Cellvation"), Checkpoint Therapeutics, Inc. (Nasdaq: CKPT, "Checkpoint"), Cyprium Therapeutics, Inc. ("Cyprium"), Helocyte, Inc. ("Helocyte"), Journey Medical Corporation (Nasdaq: DERM, "Journey" or "JMC"), Mustang Bio, Inc. (Nasdaq: MBIO, "Mustang"), Oncogenuity, Inc. ("Oncogenuity") and Urica Therapeutics, Inc. ("Urica").

Corporate Information

Our principal executive offices are located at 1111 Kane Concourse, Suite 301 Bay Harbor Islands, FL 33154, and our telephone number is 781-652-4500. We maintain a website on the Internet at www.fortressbiotech.com and our e-mail address is info@fortressbiotech.com. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Exchange Act are available, free of charge, under the Investor Relations tab of our website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The SEC also maintains an Internet website located at www.sec.gov that contains the information we file or furnish electronically with the SEC. Information found on, or accessible through, our website is not a part of, and is not incorporated into, this prospectus supplement, and you should not consider it part of this prospectus supplement.

THE OFFERING

Issuer: Fortress Biotech, Inc.

Securities Being Offered: Shares of our Common Stock having an aggregate offering price of up to \$40,000,000.

"At the market offering" as defined in Rule 415 under the Securities Act, through or to the Agents, as sales agents or Manner of Offering:

principal. See "Plan of Distribution" in this prospectus supplement for more information.

Use of Proceeds:

We intend to use the net proceeds of this offering for our operations, including, but not limited to, general corporate purposes, which may include research and development expenditures, clinical trial expenditures, manufacture and supply of product, and working capital.

Risk Factors: Investing in our Common Stock involves a high degree of risk. You should carefully consider each of the risks described

under the caption "Risk Factors" beginning on page S-3 of this prospectus supplement and in the documents incorporated

by reference into this prospectus supplement.

Nasdaq Capital Market Symbol: FBIO

S-2

RISK FACTORS

Investing in shares of our Common Stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, including the consolidated financial statements and the related notes, as well as the risks, uncertainties and other information set forth in the reports and other materials filed or furnished by our partner companies Avenue, Checkpoint, Journey and Mustang with the SEC, before deciding to invest in our Common Stock, as well as any amendment or update to our risk factors in subsequent filings with the SEC, and other information in our consolidated financial statements, all of which are incorporated by reference into this prospectus supplement. If any of the following risks, the risk factors incorporated by reference hereto, or the risks included in the public filings of Avenue, Checkpoint, Journey or Mustang were to materialize, our business, financial condition, results of operations, and future growth prospects could be materially and adversely affected. In that event, the market price of our Common Stock could decline, and you could lose part of or all of your investment in our Common Stock. In addition, you should be aware that the below stated risks should be read as being applicable to our subsidiaries and partner companies such that, if any of the negative outcomes associated with any such risk is experienced by one of our subsidiaries or partner companies, the value of Fortress' holdings in such entity may decline.

Risks Related to this Offering and Ownership of Shares of Our Common Stock

The market for our Common Stock may not provide investors with adequate liquidity.

The Common Stock is currently listed on The Nasdaq Capital Market. However, the trading market for the Common Stock may not be maintained and may not provide investors with adequate liquidity. The liquidity of the market for the Common Stock depends on a number of factors, including prevailing interest rates, our financial condition and operating results, the number of holders of the Common Stock, the market for similar securities and the interest of securities dealers in making a market in the Common Stock. We cannot predict the extent to which investor interest in our Company will maintain the trading market in our Common Stock, or how liquid that market will be. If an active market is not maintained, investors may have difficulty selling shares of our Common Stock.

Our revenues, operating results and cash flows may fluctuate in future periods, and we may fail to meet investor expectations, which may cause the price of our Common Stock to decline.

Variations in our quarterly and year-end operating results are difficult to predict, and our income and cash flows may fluctuate significantly from period to period. If our operating results fall below the expectations of investors or securities analysts, the price of our Common Stock could decline substantially. Specific factors that may cause fluctuations in our operating results include:

- · demand and pricing for our products;
- · government or commercial healthcare reimbursement policies;
- · physician and patient acceptance of any of our products;
- introduction of competing products;
- our operating expenses which fluctuate due to growth of our business;
- · timing and size of any new product or technology acquisitions we may complete; and
- · variable sales cycle and implementation periods for our products.

The market price of the Common Stock could be substantially affected by various factors.

The market price of the Common Stock depends on many factors, which may change from time to time, including:

· prevailing interest rates, increases in which may have an adverse effect on the market price of the Common Stock;

S-3

- · trading prices of similar securities;
- · general economic and financial market conditions;
- government action or regulation;
- the financial condition, performance and prospects of us and our competitors;
- changes in financial estimates or recommendations by securities analysts with respect to us or our competitors in our industry;
- our issuance of preferred equity or debt securities; and
- · actual or anticipated variations in quarterly operating results of us and our competitors.

As a result of these and other factors, holders of the Common Stock may experience a decrease, which could be substantial and rapid, in the market price of the Common Stock, including decreases unrelated to our operating performance or prospects.

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

We intend to use the net proceeds from this offering for our operations, including, but not limited to, general corporate purposes, which may include research and development expenditures, clinical trial expenditures, manufacture and supply of product, and working capital. However, our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our Common Stock. The failure by management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our Common Stock to decline, and delay our growth strategy, including but not limited to, the development and commercialization of our and our subsidiaries' product candidates.

Some of our executives, directors and principal stockholders can control our direction and policies, and their interests may be adverse to the interests of our other stockholders.

At May 24, 2023, Lindsay A. Rosenwald, M.D., our Chairman, President and Chief Executive Officer, beneficially owned 11.7% of our issued and outstanding Common Stock. At May 24, 2023, Michael S. Weiss, our Executive Vice Chairman, Strategic Development, beneficially owned 11.2% of our issued and outstanding Common Stock. By virtue of their holdings and membership on our Board of Directors, Dr. Rosenwald and Mr. Weiss may individually influence our management and our affairs and may make it difficult for us to consummate corporate transactions such as mergers, consolidations or the sale of all or substantially all of our assets that may be favorable from our standpoint or that of our other stockholders.

We have broad discretion in the use of the net proceeds from this offering and may invest or spend the proceeds in ways with which you do not agree and in ways that may not yield a return on your investment.

Our management will have broad discretion in the application of the net proceeds from this offering, if any, including for any of the purposes described in the section titled "Use of Proceeds," as well as our existing cash, and you will be relying on the judgment of our management regarding such application. You will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used effectively. Our management might not apply the net proceeds or our existing cash in ways that ultimately increase the value of your investment. If we do not invest or apply the net proceeds from this offering or our existing cash in ways that enhance stockholder value, we may fail to achieve expected results, which could cause our stock price to decline.

S-4

If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the net tangible book value of your shares.

The offering price per share in this offering may exceed the net tangible book value per share of our Common Stock outstanding prior at the time of sale. After giving effect to the sale of our Common Stock in the maximum aggregate offering amount of \$40,000,000 at an assumed offering price of \$0.6783 per share, which was the last reported sale price of our Common Stock on the Nasdaq Capital Market on May 17, 2023, and after deducting estimated offering commissions and expenses payable by us, our net tangible book value as of March 31, 2023 would have been approximately \$32.5 million, or \$0.17 per share of Common Stock. This represents an immediate dilution of \$0.51 in net tangible book value per share to purchasers of our Common Stock in this offering and an immediate increase in as-adjusted net tangible book value of approximately \$0.22 per share to our existing stockholders. Future issuances of our Common Stock or Common Stock-related securities, together with the exercise of outstanding stock options, if any, may result in further dilution. See "Dilution" below for a more detailed discussion of the dilution you may incur in connection with this offering.

You may experience future dilution as a result of future equity offerings.

In order to raise additional capital, we may in the future offer additional shares of our Common Stock or other securities convertible into or exchangeable for our Common Stock at prices that may not be the same as the price per share paid by any investor in this offering. We may sell shares or other securities in any other offering at a price per share that is less than the price per share paid by any investor in this offering, and investors purchasing shares or other securities in the future could have rights superior to you. The price per share at which we sell additional shares of our Common Stock, or securities convertible or exchangeable into Common Stock, in future transactions may be higher or lower than the price per share paid by any investor in this offering.

The actual number of shares of Common Stock we will issue under the Sales Agreement, at any one time or in total, is uncertain.

Subject to certain limitations in the Sales Agreement and compliance with applicable law, we have the discretion to deliver a placement notice to any Agent at any time throughout the term of the Sales Agreement. The number of shares that are sold by any such Agent after delivering a placement notice will fluctuate based on the market price of our Common Stock during the sales period and limits we set with such Agent. Because the price per share of each share sold will fluctuate based on the market price of our Common Stock during the sales period, it is not possible at this stage to predict the number of shares that will be ultimately issued.

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

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

S-5

CAPITALIZATION

The following table sets forth our capitalization as of March 31, 2023:

- · on an actual basis; and
- on an as adjusted basis to give effect to the issuance and sale of our Common Stock in the aggregate amount of \$40 million at an assumed offering price of \$0.6783 per share, the last reported sale price of our Common Stock on the Exchange on May 17, 2023, after deducting placement agent fees and estimated offering expenses payable by us.

You should read this table together with our financial statements and related notes and the 'Management's Discussion and Analysis of Financial Condition and Results of Operations' in each of our Annual Report on Form 10-K for the year ended December 31, 2022 and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2023.

	March 31, 2023 (unaudited)		
(\$ in thousands, except share and per share amounts)	Actual	As Adjusted	
Cash and cash equivalents	\$ 152,483	\$ 191,283	
Notes payable, long-term, net	89,996	89,996	
Stockholders' Equity (Deficit)	, and the second	,	
Cumulative Redeemable Perpetual Preferred Stock (\$0.001 par value), 15,000,000 authorized, 5,000,000 designated Series A shares, liquidation value \$25.00 per share			
Class A Preferred Stock	3	3	
Common Stock (\$0.001 par value), 200,000,000 shares authorized			
Common Stock shares	130	189	
Additional paid-in capital	693,433	732,174	
Accumulated deficit	(655,770)	(655,770)	
Total Stockholders' Equity attributed to the company	37,796	76,596	
Non-controlling interests	(17,990)	(17,990)	

The number of shares of Common Stock to be outstanding after this offering is based on 130,417,161 shares of our Common Stock outstanding as of March 31, 2023, and excludes as of that date:

19,806

58,606

· 2,426,701 shares of Common Stock underlying unvested Restricted Stock Units;

Total Capitalization

- 1,390,000 shares of Common Stock underlying deferred Restricted Stock Units;
- · 2,270,000 shares of Common Stock underlying deferred Restricted Stock Awards;
- 2,603,490 shares of Common Stock issuable upon the exercise of stock options with a weighted average exercise price of \$1.37 per share; and
- 1,909,450 shares of Common Stock issuable upon exercise of outstanding warrants with a weighted average exercise price of \$3.11 per share.

Unless otherwise indicated, all information in this prospectus supplement assumes no exercise of the outstanding options or warrants or settlement of outstanding restricted stock units, described above.

S-6

USE OF PROCEEDS

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

We intend to use the net proceeds of this offering for our operations, including, but not limited to, general corporate purposes, which may include research and development expenditures, clinical trial expenditures, manufacture and supply of product, and working capital. The timing and amounts of our actual expenditures will depend on several factors. As of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses for the net proceeds to us from an offering. Accordingly, our management will have broad discretion in the application of proceeds.

S-7

DILUTION

Our net tangible book value as of March 31, 2023 was approximately \$(6.3) million, or \$(.05) per share of our Common Stock. Our net tangible book value per share represents our total tangible assets less total liabilities divided by the number of shares of our Common Stock outstanding on March 31, 2023. After giving effect to the sale of our Common Stock in the aggregate amount of \$40 million at an assumed offering price of \$0.6783 per share, the last reported sale price of our Common Stock on Nasdaq on May 17, 2023, and after deducting the estimated offering expenses payable by us, our as adjusted net tangible book value as of March 31, 2023 would have been approximately \$32.5 million, or \$0.17 per share of our Common Stock. This represents an immediate increase in net tangible book value of \$0.22 per share to our existing shareholders and an immediate dilution in net tangible book value of \$0.51 per share to new investors purchasing shares of our Common Stock in this offering.

We determine dilution by subtracting the as adjusted net tangible book value per share after this offering from the offering price per share of our Common Stock. The following table illustrates the dilution in net tangible book value per share to new investors:

Offering price per share		\$ 0.68
Net tangible book value per share as of March 31, 2023	\$ (0.05)	
Increase in net tangible book value per share attributable to new investors in this offering	\$ 0.22	
As adjusted net tangible book value per share after giving effect to this offering		\$ 0.17
Dilution in net tangible book value per share to new investors		\$ 0.51

The number of shares of our outstanding Common Stock reflected in the discussion and table above is based on 130,417,161 shares of Common Stock outstanding as of March 31, 2023, and excludes as of that date:

- · 2,426,701 shares of Common Stock underlying unvested Restricted Stock Units;
- · 1,390,000 shares of Common Stock underlying deferred Restricted Stock Units;
- · 2,270,000 shares of Common Stock underlying deferred Restricted Stock Awards;

- 2,603,490 shares of Common Stock issuable upon the exercise of stock options with a weighted average exercise price of \$1.37 per share; and
- 1,909,450 shares of Common Stock issuable upon exercise of outstanding warrants with a weighted average exercise price of \$3.11 per share.

To the extent that outstanding options or warrants are exercised, you may 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 could result in further dilution to our stockholders.

S-8

DIVIDEND POLICY

We have never paid cash dividends to the holders of our Common Stock and currently intend to retain all available funds and any future earnings to fund the development and expansion of our business. We do not anticipate paying any cash dividends to the holders of our Common Stock in the foreseeable future.

S-9

DESCRIPTION OF SECURITIES WE ARE OFFERING

Description of Capital Stock

The following description summarizes the material terms of Fortress capital stock. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description of our capital stock, you should refer to our certificate of incorporation, our bylaws and to the provisions of applicable Delaware law

Common Stock

Our Common Stock is traded on The Nasdaq Capital Market under the symbol "FBIO." The last reported sale price of our Common Stock on May 17, 2023 was \$0.6783 per share.

The Company's Certificate of Incorporation, as amended, authorizes the Company to issue up to 200,000,000 shares of \$0.001 par value Common Stock, of which 130,417,161 shares were outstanding at March 31, 2023.

The terms, rights, preference and privileges of the Common Stock are as follows:

Voting Rights

Each holder of Common Stock is entitled to one vote per share of Common Stock held on all matters submitted to a vote of the stockholders, including the election of directors. The Company's certificate of incorporation and bylaws do not provide for cumulative voting rights.

Dividends

Subject to preferences that may be applicable to any then outstanding preferred stock, the holders of the Company's outstanding shares of Common Stock are entitled to receive dividends, if any, as may be declared from time to time by the Company's Board of Directors out of legally available funds.

Liquidation

In the event of the Company's liquidation, dissolution or winding up, holders of Common Stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of the Company's debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock.

Rights and Preference

Holders of the Company's Common Stock have no preemptive, conversion or subscription rights, and there is no redemption or sinking fund provisions applicable to our Common Stock. The rights, preferences and privileges of the holders of Common Stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of the Company's preferred stock that are or may be issued.

Fully Paid and Nonassessable

All of the Company's outstanding shares of Common Stock are fully paid and nonassessable.

S-10

CERTAIN U.S. FEDERAL INCOME TAX CONSIDERATIONS

The following discussion summarizes certain U.S. federal income tax considerations in connection with the acquisition, ownership and disposition of the Common Stock offered by this prospectus supplement. This discussion does not purport to be a complete analysis of all potential tax effects of such transactions, nor does this discussion address the effects of other U.S. federal tax laws, such as estate and gift tax laws, or of state, local, non-U.S or other tax considerations that may be relevant to a purchaser or holder of the Common Stock in light of their particular circumstances. This discussion is based on the U.S. Internal Revenue Code of 1986, as amended (the "Code"), the Treasury regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service (the "IRS"), in each case as of the date hereof. These authorities may change, possibly with retroactive effect, or may be subject to differing interpretations that may adversely affect a holder of the Common Stock. There can be no assurance that the IRS or a court of law will not take a contrary position to the position discussed below regarding the tax consequences

of the acquisition, ownership and disposition of the Common Stock.

This discussion is limited to holders that hold the Common Stock as a capital asset within the meaning of Section 1221 of the Code (generally property held for investment). This discussion does not describe all of the U.S. federal income tax consequences that may be relevant to a holder in light of its particular circumstances, including the impact of the alternative minimum tax and the Medicare contribution tax on net investment income. In addition, this discussion does not address consequences for holders subject to special rules, including without limitation:

- U.S. expatriates and former citizens or long-term residents of the United States;
- · persons holding the Common Stock as part of a hedge, straddle, conversion, or other integrated transaction;
- · banks, insurance companies, and other financial institutions;
- · brokers, dealers or traders in securities;
- · "controlled foreign corporations," "passive foreign investment companies," and corporations that accumulate earnings to avoid U.S. federal income tax;
- S corporations or entities or arrangements that are treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- · real estate investment trusts or regulated investment companies;
- U.S. persons whose functional currency is not the U.S. dollar;
- persons subject to special tax accounting rules;
- persons who hold or receive the Common Stock pursuant to the exercise of any employee stock option or otherwise as compensation;
- persons deemed to sell our Common Stock under the constructive sale provisions of the Code;
- · tax-qualified retirement plans, individual retirement accounts or other tax-deferred accounts; and
- "qualified foreign pension funds" as defined in Section 897(1)(2) of the Code.

If a partnership (or any other entity treated as a partnership for U.S. federal income tax purposes) holds the Common Stock, the U.S. federal income tax treatment of a partner of that partnership generally will depend upon the status of the partner and the activities of the partnership. If you are a partnership or a partner of a partner of a partner holding the Common Stock, you should consult your tax advisors as to the particular U.S. federal income tax consequences of holding and disposing of the Common Stock.

This discussion is for information purposes only and is not tax advice. You should consult your own independent tax advisor concerning the application of the U.S. federal income tax laws to your particular circumstances as well as any tax consequences related to the acquisition, ownership, or disposition of the Common Stock arising under other U.S. federal tax laws and the laws of any state, local or non-U.S. tax jurisdiction or under any applicable income tax treaty.

For purposes of this discussion, a "U.S. holder" is a beneficial owner of our Common Stock that, for U.S. federal income tax purposes, is or is treated as:

- an individual who is a citizen or resident of the United States;
- · a corporation created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- · an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust that (i) is subject to the primary supervision of a U.S. court and the control of one or more "United States persons" (within the meaning of Section 770 1(a)(30) of the Code) or (ii) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

A "non-U.S. holder" is any beneficial owner of our Common Stock that is not a U.S. holder.

S-11

U.S. Holders

Distributions in General

If distributions are made with respect to the Common Stock, such distributions will be treated as dividends to the extent of our current or accumulated earnings and profits as determined under the Code. Subject to customary conditions and limitations, dividends will be eligible for the dividends received deduction in the case of U.S. holders that are (or are treated for U.S. federal income tax purposes) as corporations. Dividends paid to non-corporate U.S. holders generally will qualify for taxation at preferential rates if those holders meet certain holding period and other applicable requirements. Dividends received by non-corporate U.S. holders may also be subject to the additional 3.8% tax on net investment income. Any portion of a distribution that exceeds our current and accumulated earnings and profits will first be applied to reduce a U.S. holder's tax basis in the Common Stock, but not below zero. Distributions in excess of a U.S. holder's tax basis in its shares will be taxable as gain from the disposition of the Common Stock, the tax treatment of which is discussed below.

Extraordinary Dividends

Dividends that exceed certain thresholds in relation to a U.S. holder's tax basis in the Common Stock could be characterized as "extraordinary dividends" under Section 1059 of the Code. Corporate U.S. holders that have held our Common Stock for two years or less before the dividend announcement date and that receive an extraordinary dividend will generally be required to reduce their tax basis in the stock by the nontaxed portion of the dividend due to the dividends received deduction. If the amount of the reduction exceeds the U.S. holder's tax basis in the stock, the excess will be taxable as gain from the disposition of the stock, the tax treatment of which is discussed below. Non-corporate U.S. holders that receive an extraordinary dividend will be required to treat any losses on the sale of our Common Stock as long-term capital losses to the extended of the extraordinary dividends such U.S. holders receive that qualify for taxation as the preferential rates discussed above under "— Distributions in General." U.S. holders are urged to consult their tax advisors with respect to the eligibility for an amount of any dividend received deduction and the application of Section 1059 of the Code to any dividends they receive.

Disposition of Common Stock by Sale, Exchange or Redemption

Upon any sale or disposition (other than certain redemptions, as discussed below) of the Common Stock, a U.S. holder generally will recognize capital gain or loss equal to the difference between the amount realized by the U.S. holder and the U.S. holder's adjusted tax basis in the Common Stock. Such capital gain or loss will be long-term capital gain or loss if the U.S. holder's holding period for the Common Stock is longer than one year. Non-corporate U.S. holders may be eligible for preferential tax rates on long-term capital gains but also may be subject to the additional 3.8% tax on net investment income. The deductibility of capital losses is subject to limitations.

A redemption of the Common Stock will be treated as a sale or exchange described in the preceding paragraph if the redemption, based on the facts and circumstances, is treated for U.S. federal income tax purposes as (i) a "complete termination" of your interest in the Common Stock, (ii) a "substantially disproportionate" redemption of your Common Stock, or (iii) is "not essentially equivalent to a dividend", each within the meaning of Section 302 of the Code. In determining whether any of these tests has been met, you must take into account not only the Common Stock and other equity interests that you actually own but also other equity interests that you constructively own under U.S. federal income tax rules.

If you meet none of the alternative tests described above, the redemption will be treated as a distribution subject to the rules described under "—Distributions In General." If a redemption of the Common Stock is treated as a distribution that is taxable as a dividend, you are urged to consult your tax advisor regarding the allocation of your tax basis as between the redeemed and remaining shares of Common Stock.

Information Reporting and Backup Withholding

We or an applicable withholding agent will report to our U.S. holders and the IRS the amount of dividends (including deemed dividends) paid during each year and the amount of any tax withheld with respect to the Common Stock. Certain non-corporate U.S. holders may be subject to U.S. backup withholding at a rate of 24% on payments of dividends on the Common Stock unless the holder furnishes the payor or its agent with a taxpayer identification number, certified under penalties of perjury, and certain other information or otherwise establishes an exemption from backup withholding. Backup withholding tax is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a U.S. holder's U.S. federal income tax liability, provided the U.S. holder timely furnishes the required information to the IRS.

Non-U.S. Holders

Distributions

If distributions are made with respect to the Common Stock, such distributions will be treated as dividends to the extent of our current or accumulated earnings and profits as determined under the Code and may be subject to withholding as discussed below. Any portion of a distribution that exceeds our current and accumulated earnings and profits will first be applied to reduce the Non-U.S. holder's basis in the Common Stock, but not below zero. If the distribution exceeds our current and accumulated earnings and profits and the Non-U.S. holder's basis, the excess will be treated as gain from the disposition of the Common Stock, the tax treatment of which is discussed below.

In addition, if we are classified as a U.S. real property holding corporation (a "USRPHC") within the meaning of Section 897(c) of the Code and any distribution exceeds our current and accumulated earnings and profits, we will need to satisfy our withholding requirements either by (a) treating the entire distribution (even if in excess of earnings and profits) as a dividend subject to the withholding rules described below and withhold at a minimum rate of 15% or such lower rate as may be specified by an applicable income tax treaty for distributions from a USRPHC; or (b) treating (i) only the amount of the distribution equal to our reasonable estimate of our current and accumulated earnings and profits as a dividend subject to the withholding rules in the following paragraph; and (ii) the excess portion of the distribution as subject to withholding at a rate of 15% (or such lower rate as may be specified by an applicable income tax treaty), as if such excess were the result of a sale of shares in a USRPHC, with a credit generally allowed against the Non-U.S. holder's U.S. federal income tax liability for the tax withheld from such excess. We believe that we currently are not a USRPHC, and we do not expect to become a USRPHC for the foreseeable future (see discussion of USRPHCs below under "— Disposition of Common Stock, Including Redemptions").

Dividends (including amounts distributed by a USRPHC and subject to withholding as dividends per the preceding paragraph) paid to a Non-U.S. holder of the Common Stock will be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. However, dividends that are treated as being effectively connected with the conduct of a trade or business by the Non-U.S. holder within the United States (and, where a tax treaty applies, are attributable to a permanent establishment maintained by the Non-U.S. holder in the United States) are not subject to this withholding tax, provided that certain certification and disclosure requirements are satisfied including completing IRS Form W-8ECI (or other applicable forms). Instead, such dividends are subject to U.S. federal income tax on a net income basis in the same manner as if the Non-U.S. holder were a United States person (as defined under the Code), unless an applicable income tax treaty provides otherwise. Any such effectively connected dividends received by a foreign corporation may be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty.

A Non-U.S. holder of the Common Stock who wishes to claim the benefit of an applicable treaty rate and avoid backup withholding for dividends, as discussed below, will be required to (i) complete IRS Form W-8BEN or Form W-8BEN-E (or other applicable form) and certify under penalty of perjury that such holder is not a United States person as defined under the Code and is eligible for treaty benefits, or (ii) if the Common Stock is held through certain foreign intermediaries, satisfy the relevant certification requirements of applicable Treasury regulations. A Non-U.S. holder of the Common Stock eligible for a reduced rate of U.S. withholding tax pursuant to an income tax treaty may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the U.S. Internal Revenue Service.

S-13

Disposition of Common Stock, Including Redemptions

Any gain realized by a Non-U.S. holder on the disposition of the Common Stock generally will not be subject to U.S. federal income or withholding tax unless:

- the gain is effectively connected with the conduct of a trade or business by the Non-U.S. holder in the United States (and, if required by an applicable income tax treaty, attributable to a permanent establishment maintained by the Non-U.S. holder in the United States);
- the Non-U.S. holder is an individual who is present in the United States for 183 days or more in the taxable year of disposition, and certain other conditions are met; or
- we are or have been a USRPHC, as defined in Section 897(c) of the Code, and a Non-U.S. holder owned directly or pursuant to applicable attribution rules at any time during the five-year period ending on the date of disposition more than 5% of the Common Stock assuming that the Common Stock is regularly traded on an established securities market, within the meaning of Section 897(c)(3) of the Code.

A Non-U.S. holder described in the first bullet point above will generally be subject to tax on the gain derived from the sale under regular graduated U.S. federal income tax rates in the same manner as if the Non-U.S. holder were a United States person as defined under the Code, and, if it is a corporation, may also be subject to branch profits tax equal of 30% (generally applicable to its effectively connected earnings and profits) or at such lower rate as may be specified by an applicable income tax treaty.

An individual Non-U.S. holder described in the second bullet point above will be subject to a flat 30% tax (or at such reduced rate as may be provided by an applicable tax treaty) on the gain derived from the sale, which may be offset by U.S. source capital losses, even if the individual is not considered a resident of the United States for U.S. federal income tax purposes.

A Non-U.S. holder described in the third bullet point above will be subject to U.S. federal income tax under regular graduated federal income tax rates with respect to the gain realized in the same manner as if the Non-U.S. holder were a United States person as defined under the Code. A corporation is a USRPHC if it is a U.S. corporation and the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests and its other assets used or held for use in a trade or business. We believe that we currently are not a USRPHC for U.S. federal income tax purposes, and we do not expect to become a USRPHC for the foreseeable future. Our Common Stock will be listed on the NASDAQ Capital Market and we believe that, for as long as we continue to be so listed, our Common Stock will be treated as regularly traded on an established securities market. However, if we become a USRPHC and our Common Stock is regularly traded on an established securities market, a Non-U.S. holder generally will be subject to U.S. federal income tax on any gain from the disposition of such stock if such Non-U.S. holder has owned or is deemed to have owned more than 5% of our Common Stock, at any time within the shorter of the five-year period preceding the disposition or such holder's holding period for such stock.

Non-U.S. holder will recognize capital gain or loss equal to the difference between the amount realized by the Non-U.S. holder and the Non-U.S. holder's adjusted tax basis in the Common Stock. Such capital gain or loss will be long-term capital gain or loss if the Non-U.S. holder's holding period for the Common Stock is longer than one year. A Non-U.S. holder should consult its own independent tax advisors with respect to applicable tax rates and netting rules for capital gains and losses. Certain limitations exist on the deduction of capital losses by both corporate and non-corporate taxpayers.

Information reporting and backup withholding.

We must annually report to the IRS and to each Non-U.S. holder the amount of dividends (including constructive dividends) paid to such Non-U.S. holder and the tax withheld with respect to such dividends, regardless of whether withholding was required. Copies of the information returns reporting such dividends and withholding may also be made available under the provisions of an applicable tax treaty or agreement with the tax authorities in the country in which the non-U.S. holder resides. U.S. backup withholding will generally apply to the payment of dividends to non-U.S. holders unless such non-U.S. holders furnish to the payor an IRS Form W-8BEN or Form W-8BEN-E (or other applicable form) or otherwise establish an exemption.

S-14

Payment by a U.S. office of a broker of the proceeds of a sale of shares of our Common Stock is subject to both backup withholding and information reporting unless the non-U.S. holder, or beneficial owner thereof, as applicable, certifies that it is a non-U.S. holder on Form W-8BEN or Form W-8BEN-E (or other suitable substitute or successor form), or otherwise establishes an exemption. Subject to certain exceptions, backup withholding and information reporting generally will not apply to a payment of proceeds from the sale of shares of our Common Stock if such sale is effected through a foreign office of a broker, provided that the broker does not have certain U.S. connections. Any amount withheld under the backup withholding rules from a payment to a non-U.S. holder is allowable as a credit against such holder's U.S. federal income tax liability (if any), which may entitle the holder to a refund if in excess of such liability, provided that the holder timely provides the required information to the IRS. Non-U.S. holders are urged to consult their own tax advisers regarding the application of backup withholding in their particular circumstances and the availability of and procedure for obtaining an exemption from backup withholding under current Treasury Regulations.

Foreign Account Tax Compliance Act.

Sections 1471 to 1474 of the Code (such sections, and the Treasury Regulations and administrative guidance issued thereunder, commonly referred to as FATCA) impose a 30% U.S. withholding tax on certain "withholdable payments" made to a "foreign financial institution" or a "nonfinancial foreign entity." "Withholdable payments" include payments of dividends and the gross proceeds from a disposition of certain property (such as shares of our Common Stock), if such disposition occurs after December 31, 2018. In general, if a holder is a "foreign financial institution" (which includes investment entities such as hedge funds and private equity funds), the 30% withholding tax will apply to withholdable payments made to such holder, unless such holder enters into an agreement with the U.S. Department of Treasury to collect and provide substantial information regarding its U.S. account holders, including certain account holders that are foreign entities with U.S. owners, and to withhold 30% on certain "pass-through payments." If such holder is a "non-financial foreign entity," FATCA also generally will impose a withholding tax of 30% on withholdable payments made to such holder unless the holder provides the withholding agent with a certification that it does not have any "substantial United States owners" or a certification identifying its direct and indirect substantial United States owners. Intergovernmental agreements between the United States and a holder's resident country may modify some of the foregoing requirements.

Although withholding under FATCA would also have applied to payments of gross proceeds from the sale or other disposition of the Common Stock on or after January 1, 2019, Treasury Regulations proposed in late 2018 eliminate FATCA withholding on payments of gross proceeds entirely. Taxpayers generally may rely on these proposed Treasury Regulations until final Treasury Regulations are issued.

We will not pay any additional amounts to holders of the Common Stock in respect of any amounts withheld. Non-U.S. holders should consult their own tax advisers with respect to the U.S. federal income tax consequences of FATCA on their ownership and disposition of shares of our Common Stock.

Documentation that holders provide in order to be treated as FATCA compliant may be reported to the IRS and other tax authorities, including information about a holder's identity, its FATCA status and if applicable, its direct and indirect U.S. owners. Prospective investors should consult their tax advisers about how information reporting and the possible imposition of withholding tax under FATCA may apply to their investment in the Common Stock.

S-15

PLAN OF DISTRIBUTION

On May 29, 2020, we entered into a Sales Agreement (the "Sales Agreement") with Cantor Fitzgerald & Co., H.C. Wainwright & Co., LLC, B. Riley Securities, Inc. (formerly B. Riley FBR, Inc.), and Dawson James Securities, Inc. (together, the "Agents") under which we have issued and sold our Common Stock for approximately \$48.7 million in gross proceeds, and under which up to an additional \$40 million registered on the Registration Statement on which this offering is being made may be sold pursuant to this prospectus supplement from time to time through or to the Agents, acting as agent or principal. A copy of the Sales Agreement is filed as an exhibit to our Current Report on Form 8-K filed with the SEC on May 29, 2020.

Upon delivery of a placement notice and subject to the terms and conditions of the Sales Agreement, the Agents may sell our Common Stock by any method permitted by law deemed to be "at the market distributions" as defined in Rule 415 under the Securities Act. We may instruct the Agents not to sell Common Stock if the sales cannot be effected at or above the price designated by us from time to time. We or the Agents may suspend the offering of Common Stock upon notice and subject to other conditions.

We will pay the Agents commissions, in cash, for their services in acting as agents in the sale of our Common Stock. The Agents will be entitled to compensation at a fixed commission rate of 3.0% of the gross proceeds from each sale of our Common Stock. Because there is no minimum offering amount required as a condition to closing this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. We have also agreed to reimburse the Agents for certain specified expenses, including the fees and disbursements of their legal counsel in an amount not to exceed \$50,000. We estimate that the total expenses for the offering to-date, excluding compensation and reimbursements payable to the Agents under the terms of the Sales Agreement, are approximately \$170,000.

Settlement for sales of Common Stock will occur on the second business day following the date on which any sales are made, or on some other date that is agreed upon by us and the Agents in connection with a particular transaction, in return for payment of the net proceeds to us. Sales of our Common Stock as contemplated in this prospectus supplement will be settled through the facilities of The Depository Trust Company or by such other means as we and the Agents may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

The Agents will use their commercially reasonable efforts, consistent with its sales and trading practices, to solicit offers to purchase the Common Stock under the terms and subject to the conditions set forth in the Sales Agreement. In connection with the sale of the Common Stock on our behalf, each of the Agents will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of the Agents will be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to the Agents against certain civil liabilities, including liabilities under the Securities Act.

The offering of our Common Stock pursuant to the Sales Agreement will terminate upon the termination of the Sales Agreement as permitted therein. We and each Agent may each terminate the Sales Agreement at any time upon five days' prior notice or by an Agent at any time in certain circumstances, including the occurrence of a material and adverse change in our business or financial condition that makes it impractical or inadvisable to market our Common Stock or to enforce contracts for the sale of our Common Stock

The Agents and their respective affiliates have in the past and may in the future provide various investment banking, commercial banking and other financial services for us and our affiliates, for which services they may in the future receive customary fees.

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

S-16

DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES

Our directors and officers are indemnified as provided by Section 145 of the General Corporation Law of Delaware and our amended and restated bylaws. We have agreed to indemnify each of our directors and certain officers against certain liabilities, including liabilities under the Securities Act. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the provisions described above, or otherwise, we have been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than our payment of expenses incurred or paid by our director, officer or controlling person in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, we will, unless in the opinion of our counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

LEGAL MATTERS

Certain legal matters relating to the validity of the securities offered hereby will be passed upon for us by McGuireWoods LLP, Charlotte, North Carolina. Duane Morris LLP, New York, New York, is counsel for the Agents in connection with this offering.

EXPERTS

The consolidated financial statements of Fortress Biotech, Inc. as of December 31, 2022 and 2021, and for each of the years in the two-year period ended December 31, 2022, have been incorporated by reference in this Prospectus, in reliance on the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as expert in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We are subject to the reporting requirements of the Exchange Act of 1934, as amended, and file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains an Internet website that contains reports, proxy and information statements and other information regarding issuers, including us, that file electronically with the SEC. The SEC's Internet website address is www.sec.gov. Our Internet website address is www.fortressbiotech.com.

We have filed with the SEC a registration statement under the Securities Act relating to the offering of our Common Stock. The registration statement, including the attached exhibits, contains additional relevant information about us and the Common Stock. This prospectus supplement and the accompanying prospectus do not contain all of the information set forth in the registration statement. The registration statement and the documents referred to below under "Incorporation of Certain Information by Reference" are available on our Internet website, www.fortressbiotech.com and on the SEC's website at www.sec.gov. We have not incorporated by reference into this prospectus supplement the information on, or that can be accessed through, our website, and you should not consider it to be a part of this prospectus supplement.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" information we file with it into our registration statement of which this prospectus supplement is a part, which means that we can disclose important information to you by referring you to other documents. The information incorporated by reference is considered to be part of this prospectus supplement, and information that we file later with the SEC and incorporate by reference will automatically update and supersede this information. We incorporate by reference into this prospectus supplement the documents listed below and all future filings made by us with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, except for information "furnished" under Items 2.02, 7.01 or 9.01 on Form 8-K or other information "furnished" to the SEC which is not deemed filed and not incorporated in this prospectus supplement, until the termination of the offering of securities described in the applicable prospectus supplement.

S-17

We hereby incorporate by reference the following documents:

- (a) our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on March 31, 2023 (the "2022 Form 10-K");
- (b) our Quarterly Report on Form 10-Q for the quarters ended March 31, 2023, filed with the SEC on May 15, 2023;
- (c) our Current Reports on Form 8-K filed with the SEC on February 9, 2023, April 13, 2023 and May 5, 2023; and
- (d) the description of our Common Stock included in Exhibit 4.3 to the 2022 Form 10-K.

Any statement contained in this prospectus or in a document incorporated by reference into this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus modifies or supersedes such 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 you, on written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents. You should direct any requests for documents in writing to: Fortress Biotech, Inc., 1111 Kane Concourse Suite 301 Bay Harbor Islands, FL 33154, Attention: Corporate Secretary, Tel: 781-652-4500. These documents are also available on the Investors section of our website, which is located at www.fortressbiotech.com, or as described under "Where You Can Find Additional Information" above. The reference to our website address does not constitute incorporation by reference of the information contained on our

You should rely only on information contained in, or incorporated by reference into, this prospectus. We have not authorized anyone to provide you with information different from that contained in this prospectus or incorporated by reference in this prospectus. We are not making offers to sell the securities in any jurisdiction in which such an offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make such offer or solicitation.

S-18

PROSPECTUS





Common Stock Preferred Stock Warrants Debt Securities Units

We may offer and sell an indeterminate number of shares of our common stock, preferred stock, warrants to purchase our common stock, preferred stock, debt securities, or units comprised of two or more such securities (the "Securities") from time to time under this prospectus. You should read this prospectus and any prospectus supplement carefully before you invest.

We may offer the Securities in one or more offerings in amounts, at prices, and on terms determined at the time of the offering. We may sell the Securities through agents we select or through underwriters and dealers we select. If we use agents, underwriters or dealers, we will name them and describe their compensation in a prospectus supplement.

This prospectus provides a general description of the Securities we may offer. Each time we sell Securities, we will provide specific terms of the Securities offered in a supplement to this prospectus. The prospectus supplement may also add, update or change information contained in this prospectus. You should read this prospectus and the applicable prospectus supplement carefully before you invest in any Securities. This prospectus may not be used to consummate a sale of Securities unless accompanied by the applicable prospectus supplement.

Our common stock is listed for trading on the Nasdaq Capital Market under the symbol "FBIO." Our 9.375% Series A Perpetual Preferred Stock is listed for trading on the Nasdaq Capital Market under the symbol "FBIOP."

Investing in our Securities involves risks.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this Prospectus is July 30, 2021

TABLE OF CONTENTS

Page

Prospectus	
ABOUT THIS PROSPECTUS	<u>ii</u>
FORWARD-LOOKING STATEMENTS	<u>ii</u>
<u>SUMMARY</u>	<u>1</u>
DESCRIPTION OF CAPITAL STOCK	<u>1</u>
DESCRIPTION OF WARRANTS	<u>5</u>
DESCRIPTION OF DEBT SECURITIES	<u>5</u>
DESCRIPTION OF UNITS	9
PLAN OF DISTRIBUTION	<u>10</u>
	<u>11</u>
<u>LEGAL MATTERS</u>	
EXPERTS	<u>11</u>
WHERE YOU CAN FIND MORE INFORMATION	<u>11</u>
INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE	<u>11</u>

ABOUT THIS PROSPECTUS

This prospectus is part of a "shelf" registration statement that we have filed with the SEC. By using a shelf registration statement, we may sell our Securities, as described in this prospectus, from time to time in one or more offerings. Each time we sell Securities, we will provide a prospectus supplement to this prospectus that contains specific information about the terms of such offering. The prospectus supplement may also add, update or change information contained in this prospectus. Before purchasing any securities, you should carefully read both this prospectus and any supplement, together with the additional information incorporated into this prospectus or described under the headings "Where You Can Find Additional Information" and "Incorporation of Certain Documents by Reference."

You should rely only on the information contained or incorporated by reference in this prospectus and any prospectus supplement. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We will not make an offer to sell Securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus, as well as information we previously filed with the Securities and Exchange Commission (the "SEC" or "Commission") and have incorporated by reference, is accurate as of the date on the front cover of this prospectus only, or when such document was filed with the SEC. Our business, financial condition, results of operations and prospects may have changed since the relevant date.

Neither we, nor any of our officers, directors, agents or representatives or underwriters, make any representation to you about the legality of an investment. You should not interpret the contents of this prospectus, any prospectus supplement, or any free writing prospectus to be legal, business, investment or tax advice. You should consult with your own advisors for that type of advice and consult with them about the legal, tax, business, financial and other issues that you should consider before investing in our common stock

When we refer to "Fortress," "we," "our," "us" and the "Company" in this prospectus, we mean Fortress Biotech, Inc., unless otherwise specified. When we refer to "you," we mean the potential holders of the applicable series of Securities.

We will not use this prospectus to offer and sell Securities unless it is accompanied by a prospectus supplement that more fully describes the terms of the offering.

FORWARD-LOOKING STATEMENTS

This prospectus, including the documents that we incorporate by reference, may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Statements in this prospectus, and documents we incorporate by reference, that are not descriptions of historical facts are forward-looking statements that are based on management's current expectations and are subject to risks and uncertainties that could negatively affect our business, operating results, financial condition and stock price. We have attempted to identify forward-looking statements by terminology including "anticipates," "believes," "can," "continue," "could," "estimates," "expects," "intends," "may," "might," "plans," "potential," "predicts," "should," or "will" or the negative of these terms or other comparable terminology. Factors that could cause actual results to differ materially from those currently anticipated include those set forth under "Risk Factors" including, in particular, risks relating to:

- our growth strategy;
- our ability to continue to commercialize products;
- our ability to identify, acquire, close and integrate product candidates and companies successfully and on a timely basis;
- financing and strategic agreements, acquisitions and relationships;
- · our need for substantial additional funds and uncertainties relating to financings;

i

- our ability to attract, integrate and retain key personnel;
- the early stage of products under development;
- the results of research and development activities;
- uncertainties relating to preclinical and clinical testing;
- our ability to secure and maintain third-party manufacturing, marketing and distribution of our products;
- dependence on third-party suppliers;
- government regulation;
- patent and intellectual property matters; and
- · competition.

You should read this prospectus and the documents that we reference herein completely and with the understanding that our actual future results may be materially different from what we currently expect. You should assume that the information appearing in this prospectus and any document incorporated by reference is accurate as of its date only. Because the risk factors referred to above could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events, and we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We qualify all of the information presented in this prospectus, any accompanying prospectus supplement and any document incorporated herein by reference, and particularly our forward-looking statements, by these cautionary statements.

Overview

Fortress Biotech, Inc. ("Fortress" or the "Company") is a biopharmaceutical company dedicated to acquiring, developing and commercializing pharmaceutical and biotechnology products and product candidates, which the Company does at the Fortress level, at its majority-owned and majority-controlled subsidiaries and joint ventures, and at entities the Company founded and in which it maintains significant minority ownership positions. Fortress has a talented and experienced business development team comprised of scientists, doctors and finance professionals, who identify and evaluate promising products and product candidates for potential acquisition by new or existing partner companies. Fortress, through its partner companies has executed such arrangements in partnership with some of the world's foremost universities, research institutes and pharmaceutical companies, including City of Hope National Medical Center, Fred Hutchinson Cancer Research Center, St. Jude Children's Research Hospital, Dana-Farber Cancer Institute, Nationwide Children's Hospital, Cincinnati Children's Hospital Medical Center, Columbia University, the University of Pennsylvania, and AstraZeneca plc.

Business Strategy

Following the exclusive license or other acquisition of the intellectual property underpinning a product or product candidate, Fortress leverages its business, scientific, regulatory, legal and financial expertise to help the partners achieve their goals. Partner companies then assess a broad range of strategic arrangements to accelerate and provide additional funding to support research and development, including joint ventures, partnerships, out-licensings, and public and private financings. To date, three partner companies are publicly-traded, and three have consummated strategic partnerships with industry leaders: Alexion Pharmaceuticals, Inc.; InvaGen Pharmaceuticals, Inc. ("InvaGen") (a subsidiary of Cipla Limited); and Sentynl Therapeutics, Inc. ("Sentynl").

As of March 31, 2021, several of the Fortress partner companies possess licenses to product candidate intellectual property, including Aevitas Therapeutics, Inc. ("Aevitas"), Avenue Therapeutics, Inc. ("Avenue"), Baergic Bio, Inc. ("Baergic"), Caelum Biosciences, Inc. ("Caelum"), Cellvation, Inc. ("Cellvation"), Checkpoint Therapeutics, Inc. ("Checkpoint"), Cyprium Therapeutics, Inc. ("Cyprium"), FBIO Acquisition Corp. VIII, Helocyte, Inc. ("Helocyte"), Journey Medical Corporation ("Journey" or "JMC"), Mustang Bio, Inc. ("Mustang") and Oncogenuity, Inc. ("Oncogenuity").

Our principal executive offices are located at 2 Gansevoort Street, 9th Floor, New York, New York 10014, and our telephone number is 781-652-4500. We maintain a website on the internet at www.fortressbiotech.com and our e-mail address is info@fortressbiotech.com. Our internet website, and the information contained on it, are not to be considered part of this prospectus.

DESCRIPTION OF CAPITAL STOCK

The following description summarizes the material terms of Fortress capital stock as of the date of this registration statement. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description of our capital stock, you should refer to our certificate of incorporation, our bylaws and to the provisions of applicable Delaware law.

Common Stock

Our common stock is traded on The Nasdaq Capital Market under the symbol "FBIO." The last reported sale price of our common stock on July 22, 2021 was \$3.15 per share.

The Company's Certificate of Incorporation, as amended, authorizes the Company to issue 170,000,000 shares of \$0.001 par value Common Stock of which 97,263,054 shares were outstanding at March 31, 2021.

The terms, rights, preference and privileges of the Common Stock are as follows:

Voting Rights

Each holder of Common Stock is entitled to one vote per share of Common Stock held on all matters submitted to a vote of the stockholders, including the election of directors. The Company's certificate of incorporation and bylaws do not provide for cumulative voting rights.

Dividends

Subject to preferences that may be applicable to any then-outstanding preferred stock, the holders of the Company's outstanding shares of Common Stock are entitled to receive dividends, if any, as may be declared from time to time by the Company's Board of Directors out of legally available funds.

Liquidation

In the event of the Company's liquidation, dissolution or winding up, holders of Common Stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of the Company's debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock.

Rights and Preference

Holders of the Company's Common Stock have no preemptive, conversion or subscription rights, and there is no redemption or sinking fund provisions applicable to our Common Stock. The rights, preferences and privileges of the holders of Common Stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of the Company's preferred stock that are or may be issued.

Fully Paid and Nonassessable

All of the Company's outstanding shares of Common Stock are fully paid and nonassessable.

Series A Preferred Stock

On October 26, 2017, the Company designated 5,000,000 shares of preferred stock as Series A Cumulative Redeemable Perpetual Preferred Stock, or Series A Preferred Stock. The Company currently has 15,000,000 authorized shares of preferred stock. As of March 31, 2021, there were 3,427,138 shares of our Series A Preferred Stock outstanding. Our Series A Preferred Stock is traded on The Nasdaq Capital Market under the symbol "FBIOP." The last reported sale price of our Series A Preferred Stock on July 22, 2021 was \$25.78 per share.

Except as may be otherwise required by law, the voting rights of the holders of the Series A Preferred Stock are limited to the affirmative vote or consent of the holders of at least two-thirds of the votes entitled to be cast by the holders of the Series A Preferred Stock outstanding at the time in connection with the: (1) authorization or creation, or increase in the authorized or issued amount of, any class or series of capital stock ranking senior to the Series A Preferred Stock with respect to payment of dividends or the distribution of assets upon liquidation, dissolution or winding up or reclassification of any of the Company's authorized capital stock into such shares, or creation, authorization or issuance of any obligation or security convertible into or evidencing the right to purchase any such shares; or (2) amendment, alteration, repeal or replacement of the Company's certificate of incorporation, including by way of a merger, consolidation or otherwise in which the Company may or may not be the surviving entity, so as to materially and adversely affect and deprive holders of Series A Preferred Stock of any right, preference, privilege or voting power of the Series A Preferred Stock.

2

Dividends

Dividends on Series A Preferred Stock accrue daily and will be cumulative from, and including, the date of original issue and shall be payable monthly at the rate of 9.375% per annum of its liquidation preference, which is equivalent to \$2.34375 per annum per share. The first dividend on Series A Preferred Stock sold in the offering was payable on December 31, 2017 (in the amount of \$0.299479 per share) to the holders of record of the Series A Preferred Stock at the close of business on December 15, 2017 and thereafter for each subsequent quarter in the amount of \$0.5839375 per share. The Company recorded approximately \$6.5 million and \$2.6 million of dividends in Additional Paid in Capital on the Consolidated Balance Sheets as of December 31, 2020 and 2019, respectively.

No Maturity Date or Mandatory Redemption

The Series A Preferred Stock has no maturity date, and the Company is not required to redeem the Series A Preferred Stock. Accordingly, the Series A Preferred Stock will remain outstanding indefinitely unless the Company decides to redeem it pursuant to its optional redemption right or its special optional redemption right in connection with a Change of Control (as defined below), or under the circumstances set forth below under "Limited Conversion Rights Upon a Change of Control" and elect to convert such Series A Preferred Stock. The Company is not required to set aside funds to redeem the Series A Preferred Stock.

Optional Redemption

The Series A Preferred Stock may be redeemed in whole or in part (at the Company's option) any time on or after December 15, 2022, upon not less than 30 days nor more than 60 days' written notice by mail prior to the date fixed for redemption thereof, for cash at a redemption price equal to \$25.00 per share, plus any accumulated and unpaid dividends to, but not including, the redemption date.

Special Optional Redemption

Upon the occurrence a Change of Control (as defined below), the Company may redeem the shares of Series A Preferred Stock, at its option, in whole or in part, within one hundred twenty (120) days of any such Change of Control, for cash at \$25.00 per share, plus accumulated and unpaid dividends (whether or not declared) to, but excluding, the redemption date. If, prior to the Change of Control conversion date, the Company has provided notice of its election to redeem some or all of the shares of Series A Preferred Stock (whether pursuant to the Company's optional redemption right described above under "Optional Redemption" or this special optional redemption right), the holders of shares of Series A Preferred Stock will not have the Change of Control conversion right with respect to the shares of Series A Preferred Stock called for redemption. If the Company elects to redeem any shares of the Series A Preferred Stock as described in this paragraph, the Company may use any available cash to pay the redemption price.

A "Change of Control" is deemed to occur when, after the original issuance of the Series A Preferred Stock, the following have occurred and are continuing:

- the acquisition by any person, including any syndicate or group deemed to be a "person" under Section 13(d)(3) of the Exchange Act of beneficial ownership, directly or indirectly, through a purchase, merger or other acquisition transaction or series of purchases, mergers or other acquisition transactions of the Company's stock entitling that person to exercise more than 50% of the total voting power of all the Company's stock entitled to vote generally in the election of the Company's directors (except that such person will be deemed to have beneficial ownership of all securities that such person has the right to acquire, whether such right is currently exercisable or is exercisable only upon the occurrence of a subsequent condition); and
- following the closing of any transaction referred to in the bullet point above, neither the Company nor the acquiring or surviving entity has a class of common equity securities (or American Depositary Receipts representing such securities) listed on the NYSE, the NYSE American LLC or the Nasdaq Stock Market, or listed or quoted on an exchange or quotation system that is a successor to the NYSE, the NYSE American LLC or the Nasdaq Stock Market.

3

Conversion, Exchange and Preemptive Rights

Except as described below under "Limited Conversion Rights upon a Change of Control," the Series A Preferred Stock is not subject to preemptive rights or convertible into or exchangeable for any other securities or property at the option of the holder.

Limited Conversion Rights upon a Change of Control

Upon the occurrence of a Change of Control, each holder of shares of Series A Preferred Stock will have the right (unless, prior to the Change of Control Conversion Date, the Company has provided or provides irrevocable notice of its election to redeem the Series A Preferred Stock as described above under "Optional Redemption," or "Special Optional Redemption") to convert some or all of the shares of Series A Preferred Stock held by such holder on the Change of Control Conversion Date, into the Common Stock Conversion Consideration, which is equal to the lesser of:

- the quotient obtained by dividing (i) the sum of the \$25.00 liquidation preference per share of Series A Preferred Stock plus the amount of any accumulated and unpaid dividends (whether or not declared) to, but not including, the Change of Control Conversion Date (unless the Change of Control Conversion Date is after a record date for a Series A Preferred Stock dividend payment and prior to the corresponding Dividend Payment Date, in which case no additional amount for such accumulated and unpaid dividend will be included in this sum) by (ii) the Common Stock Price (such quotient, the "Conversion Rate"); and
- · 13.05483 shares of common stock, subject to certain adjustments.

In the case of a Change of Control pursuant to which the Company's common stock will be converted into cash, securities or other property or assets, a holder of Series

A Preferred Stock will receive upon conversion of such Series A Preferred Stock the kind and amount of Alternative Form Consideration which such holder would have owned or been entitled to receive upon the Change of Control had such holder held a number of shares of the Company's common stock equal to the Common Stock Conversion Consideration immediately prior to the effective time of the Change of Control.

Notwithstanding the foregoing, the holders of shares of Series A Preferred Stock will not have the Change of Control Conversion Right if the acquiror has shares listed or quoted on the NYSE, the NYSE American LLC or Nasdaq Stock Market or listed or quoted on an exchange or quotation system that is a successor to the NYSE, the NYSE American LLC or Nasdaq Stock Market, and the Series A Preferred Stock becomes convertible into or exchangeable for such acquiror's listed shares upon a subsequent Change of Control of the acquiror.

Liquidation Preference

In the event the Company liquidates, dissolves or is wound up, holders of the Series A Preferred Stock will have the right to receive \$25.00 per share, plus any accumulated and unpaid dividends to, but not including, the date of payment, before any payment is made to the holders of the Company's common stock.

Ranking

The Series A Preferred Stock will rank, with respect to rights to the payment of dividends and the distribution of assets upon the Company's liquidation, dissolution or winding up, (1) senior to all classes or series of the Company's common stock and to all other equity securities issued by the Company other than equity securities referred to in clauses (2) and (3); (2) on a par with all equity securities issued by the Company with terms specifically providing that those equity securities rank on a par with the Series A Preferred Stock with respect to rights to the payment of dividends and the distribution of assets upon the Company's liquidation, dissolution or winding up; (3) junior to all equity securities issued by the Company with terms specifically providing that those equity securities rank senior to the Series A Preferred Stock with respect to rights to the payment of dividends and the distribution of assets upon the Company liquidation, dissolution or winding up; and (4) junior to all of the Company's existing and future indebtedness.

4

DESCRIPTION OF WARRANTS

We may issue warrants to purchase shares of our common stock or preferred stock in one or more series together with other securities or separately, as described in each applicable prospectus supplement.

The prospectus supplement relating to any warrants we offer will include specific terms relating to the offering. These terms will include some or all of the following:

- the title of the warrants;
- the aggregate number of warrants offered;
- · the designation, number and terms of the shares of common stock purchasable upon exercise of the warrants and procedures by which those numbers may be adjusted;
- the exercise price of the warrants;
- the dates or periods during which the warrants are exercisable;
- the designation and terms of any securities with which the warrants are issued;
- if the warrants are issued as a unit with another security, the date on and after which the warrants and the other security will be separately transferable;
- if the exercise price is not payable in U.S. dollars, the foreign currency, currency unit or composite currency in which the exercise price is denominated;
- · any minimum or maximum amount of warrants that may be exercised at any one time;
- any terms relating to the modification of the warrants;
- · any terms, procedures and limitations relating to the transferability, exchange or exercise of the warrants; and
- · any other specific terms of the warrants.

DESCRIPTION OF DEBT SECURITIES

We may offer debt securities which may be senior, subordinated or junior subordinated and may be convertible. Unless otherwise specified in the applicable prospectus supplement, our debt securities will be issued in one or more series under an indenture to be entered into between us and a trustee. We will issue the debt securities offered by this prospectus and any accompanying prospectus supplement under an indenture to be entered into between us and the trustee identified in the applicable prospectus supplement. The terms of the debt securities will include those stated in the indenture and those made part of the indenture by reference to the Trust Indenture Act of 1939, as in effect on the date of the indenture. We have filed a copy of the form of indenture as an exhibit to the registration statement in which this prospectus is included. The indenture will be subject to and governed by the terms of the Trust Indenture Act of 1939.

The following description briefly sets forth certain general terms and provisions of the debt securities that we may offer. The particular terms of the debt securities offered by any prospectus supplement and the extent, if any, to which these general provisions may apply to the debt securities, will be described in the related prospectus supplement. Accordingly, for a description of the terms of a particular issue of debt securities, reference must be made to both the related prospectus supplement and to the following description.

5

Debt Securities

be authorized from time to time pursuant to a supplemental indenture entered into between us and the trustee or an order delivered by us to the trustee. For each series of debt securities we offer, a prospectus supplement accompanying this prospectus will describe the following terms and conditions of the series of debt securities that we are offering, to the extent applicable:

- · title and aggregate principal amount;
- whether the debt securities will be senior, subordinated or junior subordinated;
- applicable subordination provisions, if any;
- · provisions regarding whether the debt securities will be convertible or exchangeable into other securities or property of the Company or any other person;
- percentage or percentages of principal amount at which the debt securities will be issued;
- maturity date(s);
- · interest rate(s) or the method for determining the interest rate(s);
- · whether interest on the debt securities will be payable in cash or additional debt securities of the same series;
- dates on which interest will accrue or the method for determining dates on which interest will accrue and dates on which interest will be payable;
- · whether the amount of payment of principal of, premium, if any, or interest on the debt securities may be determined with reference to an index, formula or other method;
- redemption, repurchase or early repayment provisions, including our obligation or right to redeem, purchase or repay debt securities under a sinking fund, amortization or analogous provision;
- · if other than the debt securities' principal amount, the portion of the principal amount of the debt securities that will be payable upon declaration of acceleration of the maturity;
- authorized denominations;
- form;
- · amount of discount or premium, if any, with which the debt securities will be issued, including whether the debt securities will be issued as "original issue discount" securities;
- the place or places where the principal of, premium, if any, and interest on the debt securities will be payable;

6

- where the debt securities may be presented for registration of transfer, exchange or conversion;
- the place or places where notices and demands to or upon the Company in respect of the debt securities may be made;
- · whether the debt securities will be issued in whole or in part in the form of one or more global securities;
- if the debt securities will be issued in whole or in part in the form of a book-entry security, the depository or its nominee with respect to the debt securities and the circumstances under which the book-entry security may be registered for transfer or exchange or authenticated and delivered in the name of a person other than the depository or its nominee;
- · whether a temporary security is to be issued with respect to such series and whether any interest payable prior to the issuance of definitive securities of the series will be credited to the account of the persons entitled thereto;
- the terms upon which beneficial interests in a temporary global security may be exchanged in whole or in part for beneficial interests in a definitive global security or for individual definitive securities;
- the guarantors, if any, of the debt securities, and the extent of the guarantees and any additions or changes to permit or facilitate guarantees of such debt securities;
- · any covenants applicable to the particular debt securities being issued;
- any defaults and events of default applicable to the debt securities, including the remedies available in connection therewith;
- · currency, currencies or currency units in which the purchase price for, the principal of and any premium and any interest on, such debt securities will be payable;
- time period within which, the manner in which and the terms and conditions upon which the Company or the purchaser of the debt securities can select the payment currency;
- · securities exchange(s) on which the debt securities will be listed, if any;
- · whether any underwriter(s) will act as market maker(s) for the debt securities;
- extent to which a secondary market for the debt securities is expected to develop;
- provisions relating to defeasance;
- · provisions relating to satisfaction and discharge of the indenture;

- any restrictions or conditions on the transferability of the debt securities;
- · provisions relating to the modification of the indenture both with and without the consent of holders of debt securities issued under the indenture;
- any addition or change in the provisions related to compensation and reimbursement of the trustee;
- · provisions, if any, granting special rights to holders upon the occurrence of specified events;

7

- whether the debt securities will be secured or unsecured, and, if secured, the terms upon which the debt securities will be secured and any other additions or changes relating to such security; and
- any other terms of the debt securities that are not inconsistent with the provisions of the Trust Indenture Act of 1939 (but may modify, amend, supplement or delete any of the terms of the indenture with respect to such series of debt securities).

General

One or more series of debt securities may be sold as "original issue discount" securities. These debt securities would be sold at a substantial discount below their stated principal amount, bearing no interest or interest at a rate which at the time of issuance is below market rates. One or more series of debt securities may be variable rate debt securities that may be exchanged for fixed rate debt securities.

United States federal income tax consequences and special considerations, if any, applicable to any such series will be described in the applicable prospectus supplement.

Debt securities may be issued where the amount of principal and/or interest payable is determined by reference to one or more currency exchange rates, commodity prices, equity indices or other factors. Holders of such debt securities may receive a principal amount or a payment of interest that is greater than or less than the amount of principal or interest otherwise payable on such dates, depending upon the value of the applicable currencies, commodities, equity indices or other factors. Information as to the methods for determining the amount of principal or interest, if any, payable on any date, the currencies, commodities, equity indices or other factors to which the amount payable on such date is linked and certain additional United States federal income tax considerations will be set forth in the applicable prospectus supplement.

The term "debt securities" includes debt securities denominated in U.S. dollars or, if specified in the applicable prospectus supplement, in any other freely transferable currency or units based on or relating to foreign currencies.

We expect most debt securities to be issued in fully registered form without coupons and in denominations of \$1,000 and any integral multiples thereof. Subject to the limitations provided in the indenture and in the prospectus supplement, debt securities that are issued in registered form may be transferred or exchanged at the principal corporate trust office of the trustee, without the payment of any service charge, other than any tax or other governmental charge payable in connection therewith.

Global Securities

The debt securities of a series may be issued in whole or in part in the form of one or more global securities that will be deposited with, or on behalf of, a depositary identified in the prospectus supplement. Global securities will be issued in registered form and in either temporary or definitive form. Unless and until it is exchanged in whole or in part for the individual debt securities, a global security may not be transferred except as a whole by the depositary for such global security to a nominee of such depositary or by a nominee of such depositary or any such nominee to a successor of such depositary or a nominee of such successor. The specific terms of the depositary arrangement with respect to any debt securities of a series and the rights of and limitations upon owners of beneficial interests in a global security will be described in the applicable prospectus supplement.

Governing Law

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

8

DESCRIPTION OF UNITS

We may issue, in one more series, units comprised of shares of our common stock, preferred stock, warrants to purchase common stock or preferred stock, debt securities or any combination of those securities. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

We may evidence units by unit certificates that we issue under a separate agreement. We may issue the units under a unit agreement between us and one or more unit agents. If we elect to enter into a unit agreement with a unit agent, the unit agent will act solely as our agent in connection with the units and will not assume any obligation or relationship of agency or trust for or with any registered holders of units or beneficial owners of units. We will indicate the name and address and other information regarding the unit agent in the applicable prospectus supplement relating to a particular series of units if we elect to use a unit agent.

We will describe in the applicable prospectus supplement the terms of the series of units being offered, including:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- · any provisions of the governing unit agreement that differ from those described herein; and
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units.

The other provisions regarding our common stock, preferred stock, warrants and debt securities as described in this section will apply to each unit to the extent such unit consists of shares of our common stock, warrants and/or debt securities.

PLAN OF DISTRIBUTION

We may sell the Securities covered in this prospectus in any of three ways (or in any combination):

- through underwriters or dealers;
- · directly to a limited number of purchasers or to a single purchaser; or
- through agents.

Each time that we use this prospectus to sell our Securities, we will also provide a prospectus supplement that contains the specific terms of the offering. The prospectus supplement will set forth the terms of the offering of the Securities, including:

- the name or names of any underwriters, dealers or agents and the amounts of any Securities underwritten or purchased by each of them; and
- the public offering price of the common stock and the proceeds to us and any discounts, commissions or concessions allowed or reallowed or paid to dealers.

Any public offering price and any discounts or concessions allowed or reallowed or paid to dealers may be changed from time to time.

If underwriters are used in the sale of any Securities, the Securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The Securities may be either offered to the public through underwriting syndicates represented by managing underwriters, or directly by underwriters. Generally, the underwriters' obligations to purchase the Securities will be subject to certain conditions precedent. The underwriters will be obligated to purchase all of the Securities if they purchase any of Securities.

We may sell the Securities through agents from time to time. The prospectus supplement will name any agent involved in the offer or sale of the securities and any commissions we pay to them. Generally, any agent will be acting on a best efforts basis for the period of its appointment.

We may authorize underwriters, dealers or agents to solicit offers by certain purchasers to purchase the Securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. The contracts will be subject only to those conditions set forth in the prospectus supplement, and the prospectus supplement will set forth any commissions we pay for solicitation of these contracts.

Agents and underwriters may be entitled to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments which the agents or underwriters may be required to make in respect thereof. Agents and underwriters may be customers of, engage in transactions with, or perform services for us in the ordinary course of business.

We may enter into derivative transactions with third parties, or sell Securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell Securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use Securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of Securities, and may use Securities received from us in settlement of those derivatives to close out any related open borrowings of Securities. The third party in such sale transactions will be an underwriter and will be identified in the applicable prospectus supplement (or a post-effective amendment).

10

LEGAL MATTERS

Certain legal matters will be passed upon for us by Alston & Bird LLP, New York, New York. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The financial statements as of December 31, 2020 and 2019, and for each of the two years in the period ended December 31, 2020 incorporated by reference in this Prospectus, have been so incorporated in reliance on the reports of BDO USA, LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the Securities offered hereby. This prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. For further information with respect to the Company and its Securities, reference is made to the registration statement and the exhibits and any schedules filed therewith. Statements contained in this prospectus as to the contents of any contract or other document referred to are not necessarily complete and in each instance, if such contract or document is filed as an exhibit, reference is made to the copy of such contract or other document filed as an exhibit to the registration statement, each statement being qualified in all respects by such reference. A copy of the registration statement, including the exhibits and schedules thereto, may be read and copied at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Information on the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an internet site at www.sec.gov, from which interested persons can electronically access the registration statement, including the exhibits and any schedules thereto.

We are subject to the information reporting requirements of the Exchange Act, and we file periodic reports and other information with the SEC. All documents filed with the SEC are available for inspection and copying at the addresses set forth above. We also maintain an internet site at www.fortressbiotech.com. Our website and the information contained therein or connected thereto shall not be deemed to be incorporated into this prospectus or the registration statement of which it forms a part.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" the information we file with them which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the SEC will automatically update and supersede this information. This prospectus incorporates by reference the documents listed below (other than, unless otherwise specifically indicated, current reports furnished under Item 2.02, Item 7.01 or Item 9.01 of Form 8-K and exhibits filed on such form that are related to such items):

- (a) Our Annual Report on Form 10-K for the fiscal year ended December 31, 2020(and our annual report on Form 10-K/A for the fiscal year ended December 31, 2020, filed with the SEC on April 9, 2021;
- (b) Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021;
- (c) Our Current Reports on Form 8-K filed with the SEC on February 24, 2021, March 31, 2021, April 1, 2021, April 13, 2021, May 17, 2021, June 17, 2021, June 23, 2021, and July 15, 2021 (excluding any information furnished pursuant to Item 2.02 or Item 9.01); and

11

(d) The description of the Common Stock as included under the caption "Description of Registrant's Securities to be Registered" in our Registration Statements on Form 8-A12B filed with the Commission on <u>December 7, 2011</u> and <u>November 7, 2017</u>, and any amendment or report filed for the purpose of further updating such descriptions.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of this offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference.

12

Up to \$40,000,000



Shares of Common Stock

PROSPECTUS SUPPLEMENT

May 26, 2023

Cantor H.C. Wainwright & Co. B. Riley Securities Dawson James