

PROSPECTUS SUPPLEMENT
(to Prospectus dated August 20, 2013)

\$70,000,000



Common Stock

We have entered into an Amended and Restated At Market Issuance Sales Agreement, which we refer to as the sales agreement, with MLV & Co. LLC (“MLV”) and FBR Capital Markets & Co. (“FBR”, each of MLV and FBR individually an “Agent” and collectively the “Agents”). In accordance with the terms of the sales agreement, we may offer and sell under this prospectus supplement and accompanying prospectus, shares of our common stock, \$0.001 par value per share, having an aggregate offering price of up to \$70,000,000 from time to time through the Agents. We are filing this prospectus supplement to amend and supplement the information previously included in our prospectus dated August 20, 2013 regarding the sales agreement and plan of distribution, and to update information regarding our company. This prospectus supplement is not complete without, and may not be delivered or used except in connection with our prospectus.

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 August 16, 2016 was \$2.77 per share.

Sales of our common stock, if any, under this prospectus supplement and accompanying prospectus, 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”), including sales made directly on the Exchange, any other existing trading market for our common stock, sales made to or through a market maker, in negotiated transactions at market prices, and/or any other method permitted by law. 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 up to 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. Before buying shares of our common stock, you should carefully consider the risk factors described in “Risk Factors” beginning on page SA-5 of the prospectus filed on August 20, 2013 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 determined if this prospectus is accurate or complete. Any representation to the contrary is a criminal offense.

FBR

MLV & Co.

The date of this prospectus supplement is August 17, 2016

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OUR COMPANY

Since inception in June 2006, we have been a biopharmaceutical company involved in the development of novel immunotherapy agents for the treatment of autoimmune diseases and cancer. In April 2015, we changed our name to Fortress Biotech, Inc. and began implementing our growth strategy to acquire, develop and commercialize novel pharmaceutical and biotechnology products. We plan to continue to develop and commercialize products both within Fortress and our subsidiaries, also referred to as the “Fortress Companies.” In addition to our internal development programs, we plan to leverage our biopharmaceutical business expertise and drug development capabilities to help the Fortress Companies innovate, develop and commercialize products. Additionally, we will provide funding and management services to each of the Fortress Companies and, from time to time, we and the Fortress Companies will seek licensing, acquisitions, partnerships, joint ventures and/or public and private financings to accelerate and provide additional funding to support our research and development programs.

Pursuant to our growth strategy, in April 2016, we and our wholly owned subsidiary FBIO Acquisition, Inc. (“Acquisition Sub”), entered into an Agreement and Plan of Merger (“Merger Agreement”) to acquire National Holdings Corporation (“NHLD”). As previously reported in our filings with the SEC, pursuant to the Merger Agreement (as subsequently amended in August 2016), we recently commenced a tender offer (the “Offer”) for all of the issued and outstanding shares of NHLD’s common stock, par value \$0.02 per share, at a purchase price of \$3.25 per share in cash, net to the seller in cash but subject to any required withholding of taxes. Following the completion of the Offer, if at least 80% of NHLD’s stock is tendered (in addition to other conditions), Acquisition Sub will merge with and into NHLD, with NHLD surviving as our subsidiary (“Merger”). Provided that the Merger Agreement is not terminated early, we will file financial statements relating to NHLD and the Merger with the SEC prior to selling securities under this prospectus supplement and accompanying prospectus.

PLAN OF DISTRIBUTION

We have entered into a sales agreement with the Agents under which we may offer and sell up to \$70,000,000 of shares of our common stock from time to time through either or both Agents. The sales agreement is filed with the SEC as an exhibit to our Current Report on Form 8-K dated August 17, 2016 and is incorporated herein by reference. The sales, if any, of shares of our common stock made under the sales agreement may be made by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415 of the Securities Act, including, without limitation, sales made directly on the Exchange, on any other existing trading market for the common stock or through a market maker. In addition, with our prior consent, the Agents may sell shares of our common stock by any other method permitted by law, including, but not limited to, negotiated transactions. We may instruct the Agents not to sell the shares of our 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 shares of our common stock upon notice and subject to other conditions. The Agents will not engage in any transactions that stabilizes the price of our common stock.

Each time we wish to issue and sell shares of our common stock under the sales agreement, we will notify either of the Agents of the number of shares to be issued, the dates on which such sales are anticipated to be made, any minimum price below which sales may not be made and other sales parameters as we deem appropriate. Once we have so instructed the Agent, unless such Agent declines to accept the terms of the notice, the Agent shall use commercially reasonable efforts consistent with its respective normal trading and sales practices to sell such shares up to the amount specified on such terms. The obligations of the Agents under the sales agreement to sell shares of our common stock are subject to a number of conditions that we must meet.

We will pay each Agent a commission for its services in acting as agent in the sale of the shares of our common stock. The Agents will be entitled to compensation at a commission rate of up to 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 close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. 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. We estimate that the total expenses for the offering, excluding compensation payable to the Agents under the terms of the sales agreement, will be approximately \$0.2 million.

Settlement for sales of shares of our common stock will occur on the third business day following the date on which any sales are made, or on another 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. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

The offering pursuant to the sales agreement will terminate upon the earlier of (i) the issuance and sale of all common shares subject to the agreement or (ii) termination of the sales agreement as permitted therein.

MLV & Co. LLC is an affiliate of FBR Capital Markets & Co.

The Agents and their respective affiliates may in the future provide various investment banking and other financial services for us and our affiliates, for which services they may in the future receive customary fees. To the extent required by Regulation M, the Agents will not engage in any market making activities involving our common stock while the offering is ongoing under our prospectus and this prospectus supplement.

\$70,000,000



Common Stock

PROSPECTUS SUPPLEMENT

FBR

MLV & Co.

August 17, 2016
