

PROSPECTUS



5,525,000 Units (each Unit contains one Share of Common Stock and one Common Warrant to purchase one Share of Common Stock)
4,475,000 Pre-funded Units (each Pre-funded Unit contains one Pre-funded Warrant to Purchase one Share of Common Stock and one Common Warrant to purchase one Share of Common Stock)
(4,475,000 Shares of Common Stock Underlying the Pre-funded Warrants) and

(10,000,000 Shares of Common Stock Underlying the Common Warrants)

We are offering 5,525,000 units (each unit consisting of one share of our common stock and one common warrant to purchase one share of our common stock). Each common warrant contained in a unit has an exercise price of \$0.80 per share. The common warrants contained in the units will be exercisable immediately and will expire five years from the date of issuance. We are also offering the shares of our common stock that are issuable from time to time upon exercise of the common warrants contained in the units.

We are also offering to each purchaser whose purchase of units in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% of our outstanding common stock immediately following the consummation of this offering, 4,475,000 pre-funded units (each pre-funded unit consisting of one pre-funded warrant to purchase one share of our common stock and one common warrant to purchase one share of our common stock) in lieu of units that would otherwise result in the purchaser's beneficial ownership exceeding 4.99% of our outstanding common stock (or at the election of the purchaser, 9.99%). Each pre-funded warrant contained in a pre-funded unit will be exercisable for one share of our common stock. The purchase price of each pre-funded unit will equal the price per unit being sold to the public in this offering minus \$0.01, and the exercise price of each pre-funded warrant included in the pre-funded unit will be \$0.01 per share. This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants contained in the pre-funded units sold in this offering. Each common warrant contained in a pre-funded unit has an exercise price of \$0.80 per share. The common warrants contained in the pre-funded units will be exercisable immediately and will expire five years from the date of issuance. We are also offering the shares of our common stock that are issuable from time to time upon exercise of the common warrants contained in the pre-funded units.

Our common stock is listed on the NASDAQ Global Market under the symbol "EBIO". The last reported sale price for our common stock on the NASDAQ Global Market on November 2, 2017 was \$0.72 per share. We do not intend to apply for listing of the pre-funded warrants or common warrants on any securities exchange or other nationally recognized trading system. There is no established public trading market for the pre-funded warrants or common warrants, and we do not expect a market to develop.

Units and the pre-funded units will not be issued or certificated. The shares of common stock or pre-funded warrants, as the case may be, and the common warrants can only be purchased together in this offering but the securities contained in the units or pre-funded units will be issued separately.

We are an "emerging growth company" as defined by the Jumpstart Our Business Startups Act of 2012 and, as such, we are eligible for reduced public company reporting requirements. Please see "Summary—Implications of Being an Emerging Growth Company."

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 6 of this prospectus and under similar headings in the documents incorporated by reference into this prospectus.

| | Per Unit | Per Pre-funded Unit | Total |
|---|----------|---------------------|--------------|
| Public offering price | \$ 0.80 | \$ 0.79 | \$ 7,955,250 |
| Underwriting discounts and commissions(1) | \$ 0.056 | \$ 0.056 | \$ 560,000 |
| Proceeds, before expenses, to us(2) | \$ 0.744 | \$ 0.734 | \$ 7,395,250 |

(1) We have agreed to reimburse the underwriter for certain of its expenses. See “Underwriting” for a description of the compensation to be received by the underwriter.

(2) Excludes potential proceeds from the exercise of the common warrants or pre-funded warrants being offered pursuant to this prospectus.

We have granted the underwriter the option to purchase up to 1,500,000 additional shares of common stock at a purchase price of \$0.79 per share and/or common warrants to purchase up to an aggregate of 1,500,000 shares of common stock at a purchase price of \$0.01 per common warrant with an exercise price of \$0.80 per share to cover over-allotments, if any, less the underwriting discounts and commissions. The underwriter may exercise its option at any time within 30 days from the date of this prospectus. If the underwriter exercises the option in full, the total underwriting discounts and commissions payable by us will be \$644,000, and the total proceeds to us, before expenses, will be \$8,511,250, excluding potential proceeds from the exercise of the common warrants included in the over allotment option.

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

The underwriter expects to deliver the securities to purchasers on November 3, 2017.

Sole Book-Running Manager

H.C. Wainwright & Co.

The date of this prospectus is November 1, 2017.

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You should read this prospectus, including the information incorporated by reference herein, and any related free writing prospectus that we have authorized for use in connection with this offering.

You should rely only on the information that we have included or incorporated by reference in this prospectus and any related free writing prospectus that we may authorize to be provided to you. We have not authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus or any related free writing prospectus that we may authorize to be provided to you. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or any related free writing prospectus. This prospectus and any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

You should not assume that the information contained in this prospectus or any related free writing prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference herein or therein is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus or any related free writing prospectus is delivered, or securities are sold, on a later date.

This prospectus contains or incorporates by reference summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed or have been incorporated by reference as exhibits to the registration statement of which this prospectus forms a part, and you may obtain copies of those documents as described in this prospectus under the heading “Where You Can Find More Information.”

PROSPECTUS SUMMARY

This summary highlights information contained in other parts of this prospectus and in the documents we incorporate by reference. Because it is only a summary, it does not contain all of the information that you should consider before investing in our securities and it is qualified in its entirety by, and should be read in conjunction with, the more detailed information appearing elsewhere in this prospectus, any applicable free writing prospectus and the documents incorporated by reference herein and therein. You should read all such documents carefully, especially the risk factors and our consolidated financial statements and the related notes included or incorporated by reference herein or therein, before deciding to buy our securities. Unless the context requires otherwise, references in this prospectus to “Eleven,” “we,” “us” and “our” refer to Eleven Biotherapeutics, Inc. and our subsidiaries.

Company Overview

We are a biologics oncology company focused primarily on designing, engineering and developing targeted protein therapeutics, or TPTs. Our TPTs are single protein therapeutics composed of targeting moieties genetically fused via linker domains to cytotoxic protein payloads that are produced through our proprietary recombinant one-step manufacturing process. We target tumor cell surface antigens that allow for rapid internalization into the targeted cancer cell and have limited expression on normal cells. We have designed our TPTs to overcome the fundamental efficacy and safety challenges inherent in existing antibody drug conjugates, or ADCs, where a payload is chemically attached to a targeting antibody.

Our most advanced product candidate is Vicinium™, which is a locally-administered TPT. In a completed Phase 2 clinical trial, of the 45 evaluable subjects treated with Vicinium, 40% achieved a complete response or no evidence of disease at three months while 16% remained disease-free for at least 18 months. In the third quarter of 2015, we, through our subsidiary, Viventia Bio Inc., or Viventia, commenced in the United States and Canada a Phase 3 clinical trial of Vicinium for the treatment of subjects with high-grade non-muscle invasive bladder cancer, or NMIBC. We anticipate complete enrollment in this clinical trial in the first quarter of 2018 with topline three-month data in mid-2018 and topline twelve-month data in the second quarter of 2019. In June 2017, we entered into a Cooperative Research and Development Agreement, or CRADA, with the National Cancer Institute, or NCI, for the development of Vicinium in combination with AstraZeneca’s immune checkpoint inhibitor, durvalumab, for the treatment of NMIBC. Under the terms of the CRADA, the NCI will conduct a Phase 1 clinical trial in subjects with high-grade NMIBC to evaluate the safety, efficacy and biological correlates of Vicinium in combination with durvalumab.

Our second most advanced product candidate is Proxinium™, a locally-administered TPT intended for the treatment of squamous cell carcinoma of the head and neck, or SCCHN. In our two Phase 1 clinical trials, 53% of evaluable subjects treated with Proxinium demonstrated antitumor activity with epithelial cell adhesion molecule, or EpCAM-expressing tumors as assessed by investigator’s clinical measurements, the investigator’s overall assessment including qualitative changes, and assessment of available radiologic data. In addition, three out of the four subjects with complete responses of injected tumors had regression or complete resolution of adjacent non injected lesions. In a Phase 2 clinical trial, we observed tumor shrinkage in 10 of the 14 evaluable subjects (71.4%). We intend to initiate a Phase 1/2a clinical trial that will explore the potential of Proxinium in combination with a checkpoint inhibitor for the treatment of SCCHN. In addition to our locally-administered TPTs, our pipeline also includes systemically-administered TPTs in development. Our systemically-administered TPTs are built around our proprietary de-immunized variant of the plant-derived cytotoxin bouganin, or deBouganin. Our lead systemically-administered product candidate, VB6-845d, is being developed for the treatment of multiple types of EpCAM, positive solid tumors. VB6-845d is administered by intravenous infusion. A Phase 1 clinical trial conducted with VB6-845, the prior version of VB6-845d, revealed no clinically relevant immune response to the deBouganin payload. We plan on submitting an Investigational New Drug application, or IND, with VB6-845d.

We have deferred further development of Proxinium and VB6-845d in order to focus our efforts and our resources on our ongoing development of Vicinium. We are also exploring collaboration agreements for Vicinium, Proxinium and VB6-845d.

We maintain global development, marketing and commercialization rights for all of our TPT-based product candidates. Upon regulatory approval for our product candidates, we will explore various commercialization strategies to market our products. If we obtain regulatory approval for Vicinium in high-grade NMIBC, we may build a North American specialty urology sales force to market the product or seek commercialization partners. If we obtain regulatory approval for our other product candidates, including Proxinium, we may seek partners with oncology expertise in order to maximize the commercial value of each asset or a portfolio of assets. We also own or exclusively license worldwide intellectual property rights for all of our TPT-based product candidates, covering our key patents with protection ranging from 2018 to 2036.

On June 10, 2016, we entered into a License Agreement, or the License Agreement, with F. Hoffmann-La Roche Ltd and Hoffmann-La Roche Inc., or collectively, Roche, pursuant to which we licensed our monoclonal antibody EBI-031 and all other IL-6 antagonist antibody technology owned by us. Under the License Agreement, Roche is required to continue developing EBI-031 at its cost. At the time of the License Agreement, EBI-031, which was derived using our previous AMP-Rx platform, was in pre-clinical development as an intravitreal injection for diabetic macular edema and uveitis. We have received \$30.0 million in payments from Roche pursuant to the License Agreement, including a \$7.5 million upfront payment and a \$22.5 million milestone payment as a result of the IND application for EBI-031 becoming effective. We are also entitled to receive an additional \$240.0 million upon the achievement of other specified regulatory, development and commercial milestones, as well as royalties based on net sales of potential future products containing EBI-031 or any other potential future products containing other IL-6 compounds.

We also previously invested a significant portion of our efforts and financial resources in the development of our product candidate isunakinra (EBI-005) for the treatment of subjects with dry eye disease and allergic conjunctivitis. Based on negative results from our completed Phase 3 clinical trials in dry eye disease and allergic conjunctivitis, we do not plan to pursue further development of isunakinra.

Risks Associated with Our Business

Our business is subject to a number of risks of which you should be aware before making an investment decision. These risks are discussed more fully in the “Risk Factors” section of this prospectus immediately following this prospectus summary and in Part I, Item 1A “Risk Factors” of our Annual Report on Form 10-K filed with the SEC on March 24, 2017, which is incorporated by reference in this prospectus. These risks include the following:

- We have incurred significant losses since our inception, which we anticipate will continue for the foreseeable future. As of June 30, 2017, we had an accumulated deficit of \$136.7 million.
- We have never generated revenue from product sales and may never be profitable.
- Our business is highly dependent on the success of Vicinium, our lead product candidate.
- We may encounter difficulties enrolling or retaining subjects in our clinical trials.
- Clinical product development involves uncertain outcomes, and results of earlier studies and trials may not be predictive of future trial results.
- We may not be able to submit INDs, commence clinical trials or report data on the timelines we expect, and even if we are able to, the U.S. Food and Drug Administration, or FDA, may not permit us to proceed.
- If our product candidates fail to demonstrate quality, safety and efficacy to the satisfaction of regulatory authorities, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our product candidates.
- The net proceeds from this offering will not be sufficient to commercialize any of our product candidates and we will need to obtain additional funding for commercialization. Failure to obtain additional funding when needed, and on satisfactory terms, may force us to delay, limit or terminate our product development efforts or other operations.
- There is substantial doubt relating to our ability to continue as a going concern as determined by management and as reflected in the report of our independent registered public accounting firm. We will need to raise substantial additional capital to fund our operations.
- We may record impairment charges, which would adversely impact our financial position and results of operation.
- Recent changes in our senior management team could harm our business.
- There is no public market for the common warrants or the pre-funded warrants in this offering.
- The common warrants and the pre-funded warrants in this offering are speculative in nature.
- We have relied and expect to rely on third parties to conduct aspects of our research and development and clinical trials. If they terminate our arrangements, fail to meet deadlines or perform in an unsatisfactory manner, our business could be harmed.
- The potential commercial success of any current or future product candidate will depend upon the degree of market acceptance by physicians, patients, third-party payors and others in the medical community.

Our Corporate Information

We were incorporated under the laws of the state of Delaware on February 25, 2008 under the name NewCo LS14, Inc. We subsequently changed our name to DeNovo Therapeutics, Inc. in September 2008 and again to Eleven Biotherapeutics, Inc. in February 2010. Our principal executive offices are located at 245 First Street, Suite 1800, Cambridge, Massachusetts 02142, and our telephone number is (617) 444-8550. Our website address is www.elevenbio.com. The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

Eleven Biotherapeutics, Viventia Bio and the Viventia and Eleven logos are our trademarks. The other trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners.

Implications of Being an Emerging Growth Company

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. We will remain an emerging growth company until the earliest of (1) the last day of the fiscal year following the fifth anniversary of our initial public offering, or December 31, 2019, (2) the last day of the fiscal year after our annual gross revenue is \$1.07 billion or more, (3) the date on which we have, during the previous three-year period, issued more than \$1.0 billion in non-convertible debt securities and (4) the last day of any fiscal year in which the market value of our common stock held by non-affiliates exceeded \$700 million as of the end of the second quarter of that fiscal year.

For as long as we remain an “emerging growth company,” we may take advantage of certain exemptions from various reporting requirements that are applicable to public companies that are not “emerging growth companies” including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation and financial statements in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote to approve executive compensation and shareholder approval of any golden parachute payments not previously approved. We may take advantage of one or more of these reporting exemptions until we are no longer an “emerging growth company.”

The JOBS Act provides that an “emerging growth company” can take advantage of an extended transition period for complying with new or revised accounting standards. We have irrevocably elected not to avail ourselves of this exemption and, therefore, we are subject to the same new or revised accounting standards as other public companies that are not “emerging growth companies.”

THE OFFERING

| | |
|---|---|
| Units offered by us in this offering | 5,525,000 units, each consisting of one share of our common stock and one common warrant to purchase one share of our common stock. |
| Pre-funded units offered by us in this offering | We are also offering to each purchaser whose purchase of units in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% of our outstanding common stock immediately following the consummation of this offering 4,475,000 pre-funded units (each pre-funded unit consisting of one pre-funded warrant to purchase one share of our common stock and one common warrant to purchase one share of our common stock) in lieu of units that would otherwise result in the purchaser's beneficial ownership exceeding 4.99% of our outstanding common stock (or, at the election of the purchaser, 9.99%). The purchase price of each pre-funded unit will equal the price at which the units are being sold to the public in this offering, minus \$0.01, and the exercise price of each pre-funded warrant included in each pre-funded unit will be \$0.01 per share. The pre-funded warrants will be immediately exercisable and may be exercised at any time until the pre-funded warrants are exercised in full. This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering. |
| Common warrants offered by us in the offering | Common warrants to purchase an aggregate of 10,000,000 shares of our common stock. Each unit and each pre-funded unit includes a common warrant to purchase one share of our common stock. Each common warrant will have an exercise price of \$0.80 per share, will be immediately separable from the common stock or pre-funded warrant, as the case may be, will be immediately exercisable and will expire on the fifth anniversary of the original issuance date, at which point it will automatically be exercised on a cashless basis. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the common warrants. |
| Option to purchase additional securities | The underwriter has the option to purchase up to 1,500,000 additional shares of common stock at a purchase price of \$0.79 per share and/or common warrants to purchase up to an aggregate of 1,500,000 shares of common stock at a purchase price of \$0.01 per common warrant with an exercise price of \$0.80 per share, less underwriting discount and commissions. The underwriter can exercise this option at any time within 30 days from the date of this prospectus. |
| Common stock outstanding prior to this offering | 24,706,995 shares of common stock. |

| | |
|--|---|
| Common stock outstanding after this offering | 30,231,995 shares of common stock (assuming no exercise of the underwriter's over-allotment option and assuming none of the common warrants or pre-funded warrants issued in this offering are exercised). |
| Use of proceeds | We estimate that the net proceeds to us from this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, will be approximately \$7.0 million (\$8.1 million if the underwriter's option to purchase additional shares of common stock and/or common warrants is exercised in full) based on a public offering price of \$0.80 per unit and \$0.79 per pre-funded unit, and excluding any proceeds from the exercise of common warrants and pre-funded warrants. We intend to use the net proceeds from this offering to continue to fund the clinical development of Vicinium and for general corporate purposes, which may include capital expenditures and funding our working capital needs. See "Use of Proceeds." |
| Risk Factors | An investment in our securities involves a high degree of risk. See "Risk Factors" beginning on page 6 of this prospectus and the similarly titled sections in the documents incorporated by reference into this prospectus. |
| NASDAQ Global Market symbol | "EBIO." We do not plan on applying to list the pre-funded warrants or the common warrants on the NASDAQ Global Market, any national securities exchange or any other nationally recognized trading system. Without an active trading market, the liquidity of the pre-funded warrants and the common warrants will be limited. |

Outstanding Shares

The number of shares of our common stock to be outstanding after this offering is based on 24,706,995 shares of our common stock outstanding as of September 30, 2017, and excludes:

- 1,965,206 shares of our common stock issuable upon the exercise of stock options outstanding as of September 30, 2017 at a weighted-average exercise price of \$3.92 per share;
- 926,840 shares of our common stock issuable upon the exercise of common stock warrants outstanding as of September 30, 2017 at a weighted-average exercise price of \$14.79 per share;
- 1,989,329 shares of our common stock available for future issuance under our 2014 Stock Incentive Plan, or the 2014 Plan, as of September 30, 2017, which includes 1,055,000 shares of our common stock issuable upon the exercise of stock options granted on October 4, 2017 at an exercise price of \$1.59;
- 59,461 shares of our common stock available for future issuance under our employee stock purchase plan as of September 30, 2017;
- 4,475,000 shares of common stock issuable upon the exercise of pre-funded warrants to be issued to investors in this offering at an exercise price of \$0.01 per share; and
- 10,000,000 shares of common stock issuable upon the exercise of common warrants to be issued to investors in this offering at an exercise price of \$0.80 per share.

Except as otherwise indicated herein, all information in this prospectus, including the number of shares that will be outstanding after this offering, does not assume or give effect to the exercise of options or warrants outstanding as of September 30, 2017.

RISK FACTORS

An investment in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should carefully consider the risks described below and those discussed under the Section captioned "Risk Factors" contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, which is incorporated by reference in this prospectus, together with the information included in this prospectus and documents incorporated by reference herein, and in any free writing prospectus that we have authorized for use in connection with this offering. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment.

Recent changes in our senior management team could harm our business.

Effective as of October 3, 2017, Arthur DeCillis resigned as our Chief Medical Officer. Effective as of October 20, 2017, John McCabe resigned as our Chief Financial Officer. As a result of these changes, we may experience disruption in our operations or have difficulty in maintaining or developing our business during this transition.

We may record impairment charges, which would adversely impact our financial position and results of operations.

We have recorded a material amount of goodwill and indefinite lived intangible assets on our balance sheet in connection with our acquisition of Viventia. We review our goodwill and intangible assets for impairment at least annually, or whenever events or changes in circumstances indicate that the carrying amounts of these assets may not be recoverable, in accordance with Accounting Standards Codification 350, *Intangibles-Goodwill and Other*.

One potential indicator of goodwill impairment is whether our fair value, as measured by our market capitalization, is below our net book value. Whether our market capitalization triggers an impairment charge in any future period will depend on the underlying reasons for the decline in stock price, the significance of the decline, and the length of time the stock price has been trading at such prices.

In addition, the determination as to whether our indefinite lived intangible assets related to Vicinium are impaired is heavily dependent on the results of our on-going clinical trial, as well as other factors, such as the potential market for Vicinium, if approved.

In the event that we determine in a future period that impairment exists for any reason, we would record an impairment charge, which could be material and which would reduce the underlying asset's value in the period such determination is made, which would adversely impact our financial position and results of operations.

Risks Related to this Offering

Management will have broad discretion as to the use of the proceeds from this offering, and we may not use the proceeds effectively.

Our management will have broad discretion with respect to the use of proceeds of this offering, including for any of the purposes described in the section of this prospectus entitled "Use of Proceeds." You will be relying on the judgment of our management regarding the application of the proceeds of this offering. The results and effectiveness of the use of proceeds are uncertain, and we could spend the proceeds in ways that you do not agree with or that do not improve our results of operations or enhance the value of our common stock. Our failure to apply these funds effectively could harm our business, delay the development of our product candidates and cause the price of our common stock to decline.

You will experience immediate and substantial dilution in the net tangible book deficit per share of the common stock included in the units or issuable upon exercise of the common warrants or pre-funded warrants in this offering.

Since the effective price per share of common stock included in the units or issuable upon exercise of the common warrants or the pre-funded warrants being offered is substantially higher than the net tangible book deficit per share of our common stock outstanding prior to this offering, you will suffer immediate and substantial dilution in the net tangible book deficit of the common stock included in the units or issuable upon the exercise of the common warrants or the pre-funded warrants issued in this offering. See the section titled "Dilution" below for a more detailed discussion of the dilution you will incur if you purchase units in this offering.

Issuances of shares of common stock or securities convertible into or exercisable for shares of common stock following this offering, as well as the exercise of options and warrants outstanding, will dilute your ownership interests and may adversely affect the future market price of our common stock.

The issuance of additional shares of our common stock or securities convertible into or exchangeable for our common stock could be dilutive to stockholders if they do not invest in future offerings. We intend to use the net proceeds from this offering to continue to fund the clinical development of Vicinium and for general corporate purposes, which may include capital expenditures and funding our working capital needs. We may seek additional capital through a combination of private and public equity offerings, debt financings, strategic partnerships and alliances and licensing arrangements, which may cause your ownership interest to be diluted.

In addition, we have a significant number of options and warrants to purchase shares of our common stock outstanding, which will be increased by the number of pre-funded warrants and common warrants issued in the offering. If these securities are exercised, you may incur further dilution. Moreover, to the extent that we issue additional options or warrants to purchase, or securities convertible into or exchangeable for, shares of our common stock in the future and those options, warrants or other securities are exercised, converted or exchanged, stockholders may experience further dilution.

There is no public market for the common warrants or the pre-funded warrants in this offering.

There is no established public trading market for the common warrants or the pre-funded warrants in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list the common warrants or the pre-funded warrants on any national securities exchange or other nationally recognized trading system, including The NASDAQ Global Market. Without an active market, the liquidity of the common warrants and the pre-funded warrants will be limited.

The common warrants and the pre-funded warrants in this offering are speculative in nature.

Neither the common warrants nor the pre-funded warrants in this offering confer any rights of common stock ownership on its holders, such as voting rights or the right to receive dividends, but rather merely represent the right to acquire shares of common stock at a fixed price and, with respect to the common warrants, during a fixed period of time. Specifically, commencing on the date of issuance, holders of the common warrants may exercise their right to acquire the common stock and pay an exercise price of \$0.80 per share, subject to certain adjustments, prior to the expiration of the common warrants on the fifth anniversary of the original issuance date, at which time the common warrants would be automatically exercised on a cashless basis. Commencing on the date of issuance, holders of the pre-funded warrants may exercise their right to acquire the common stock and pay an exercise price of \$0.01 per share, subject to certain adjustments, at any time until the pre-funded warrants are exercised in full. Moreover, following this offering, the market value of the common warrants and the pre-funded warrants, if any, is uncertain and there can be no assurance that the market value of the common warrants or the pre-funded warrants will equal or exceed their imputed offering price. Neither the common warrants nor the pre-funded warrants will be listed or quoted for trading on any market or exchange. There can also be no assurance that the market price of the common stock will ever equal or exceed the exercise price of the common warrants, and consequently, whether it will ever be profitable for holders of the common warrants to exercise the common warrants.

A significant portion of our total outstanding shares are eligible to be sold into the market, which could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market, either by us or by our current stockholders, or the perception that these sales could occur, could cause a decline in the market price of our securities. Such sales, along with any other market transactions, could adversely affect the market price of our common stock.

Upon completion of this offering, based on our shares outstanding as of September 30, 2017, we will have 30,231,995 shares of common stock outstanding. Of these shares, only 9,302,744 are subject to a contractual lock-up with the underwriter for this offering for a period of 90 days following this offering. These shares can be sold, subject to any applicable volume limitations under federal securities laws, after the earlier of the expiration of, or release from, the 90-day lock-up period. The balance of our outstanding shares of common stock, including any shares of common stock included in units or issuable upon the exercise of the common warrants and pre-funded warrants purchased in this offering, may be resold into the public market immediately without restriction, unless owned or purchased by our affiliates. Moreover, some of the holders of our common stock have the right, subject to specified conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders.

As of September 30, 2017, there were approximately 4,013,996 shares subject to outstanding options or that are otherwise issuable under our equity compensation plans, all of which shares we have registered under the Securities Act of 1933, as amended, or the Securities Act, on a registration statement on Form S-8. On October 4, 2017, we granted an aggregate of 1,055,000 options to purchase shares of our common stock at an exercise price of \$1.59. These shares can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates and the lock-up agreements described above, to the extent applicable.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, included in this prospectus or the documents incorporated herein by reference regarding our strategy, future operations, future product research or development, future financial position, future revenues, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words “anticipate,” “believe,” “goals,” “estimate,” “expect,” “intend,” “may,” “might,” “plan,” “predict,” “project,” “target,” “potential,” “will,” “would,” “could,” “should,” “continue” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this prospectus include, among other things, statements about:

- our expected future loss and accumulated deficit levels;
- our projected financial position and estimated cash burn rate;
- our estimates regarding expenses, future revenues, capital requirements and needs for, and ability to obtain, additional financing;
- our ability to continue as a going concern;
- our need to raise substantial additional capital to fund our operations;
- the potential impairment of our goodwill and indefinite lived intangible assets;
- the recent changes in our senior management team;
- the success, cost and timing of our pre-clinical studies and clinical trials in the United States, Canada and in other foreign jurisdictions;
- the potential enrollment challenges to our Phase 3 clinical trial of Vicinium due to anticipated shortages of Bacillus Calmette-Guérin, or BCG;
- the potential that results of pre-clinical studies and clinical trials indicate our product candidates are unsafe or ineffective;
- our dependence on third parties, including contract research organizations, or CROs, in the conduct of our pre-clinical studies and clinical trials;
- the difficulties and expenses associated with obtaining and maintaining regulatory approval of our product candidates and companion diagnostics, if any, in the United States, Canada and in other foreign jurisdictions, and the labeling under any approval we may obtain;
- our plans and ability to develop and commercialize our product candidates;
- our ability to achieve certain future regulatory, development and commercialization milestones under our license agreement with Roche;
- market acceptance of our product candidates, the size and growth of the potential markets for our product candidates, and our ability to serve those markets;
- obtaining and maintaining intellectual property protection for our product candidates and our proprietary technology;
- the successful development of our commercialization capabilities, including sales and marketing capabilities;
- the success of competing therapies and products that are or become available;
- the lack of a public market for the common warrants and the pre-funded warrants in this offering; and
- the speculative nature of the common warrants and the pre-funded warrants in this offering.

Our product candidates are investigational biologics undergoing clinical development and have not been approved by the FDA, Health Canada or the European Commission. Our product candidates have not been, nor may they ever be, approved by any regulatory agency or competent authorities nor marketed anywhere in the world.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and our stockholders should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this prospectus, particularly in the “Risk Factors” section beginning on page 6, that could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make.

You should read this prospectus and the documents that we have filed as exhibits to this prospectus completely and with the understanding that our actual future results may be materially different from what we expect. The forward-looking statements contained in this prospectus are made as of the date of this prospectus and we do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately \$7.0 million, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, and excluding the proceeds, if any, from the exercise of the common warrants and pre-funded warrants issued pursuant to this offering. If the underwriter exercises its over-allotment option in full, we estimate that the net proceeds will be approximately \$8.1 million, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, and excluding the proceeds, if any, from the exercise of the common warrants and pre-funded warrants issued pursuant to this offering.

If all of the common warrants and pre-funded warrants sold in this offering were to be exercised in cash at an exercise price of \$0.80 and \$0.01 per share, respectively, we would receive additional net proceeds of approximately \$8.0 million. However, the common warrants contain a cashless exercise provision that permit exercise of the common warrants on a cashless basis (i) at any time where there is no effective registration statement under the Securities Act of 1933, as amended, covering the issuance of the underlying shares or (ii) on the expiration date of the common warrant. We cannot predict when or if these common warrants will be exercised or whether they will be exercised for cash. Additionally, the pre-funded units may be exercised at any time until the pre-funded warrants are exercised in full. It is possible that the common warrants may be exercised solely on a cashless basis or that the pre-funded warrants may never be exercised.

As of June 30, 2017, we had cash and cash equivalents of \$15.8 million. We intend to use the net proceeds from this offering to continue to fund the clinical development of Vicinium and for general corporate purposes, which may include capital expenditures and funding our working capital needs.

This expected use of net proceeds from this offering and our existing cash and cash equivalents represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development, the status of and results from clinical trials, as well as any collaborations that we may enter into with third parties for our product candidates, and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering. We have no current agreements, commitments or understandings for any material acquisitions or licenses of any products, businesses or technologies.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing instruments and U.S. government securities.

MARKET PRICE OF OUR COMMON STOCK

Our common stock trades on the NASDAQ Global Market under the symbol “EBIO.” The following table sets forth, for the periods indicated, the high and low sale prices per share for our common stock as reported on the NASDAQ Global Market:

| | Market Price | |
|--|--------------|---------|
| | High | Low |
| First quarter 2015 | \$ 13.50 | \$ 8.92 |
| Second quarter 2015 | \$ 13.78 | \$ 2.61 |
| Third quarter 2015 | \$ 8.00 | \$ 2.25 |
| Fourth quarter 2015 | \$ 3.30 | \$ 2.24 |
| First quarter 2016 | \$ 3.00 | \$ 0.25 |
| Second quarter 2016 | \$ 3.80 | \$ 0.31 |
| Third quarter 2016 | \$ 5.97 | \$ 1.58 |
| Fourth quarter 2016 | \$ 3.23 | \$ 1.32 |
| First quarter 2017 | \$ 2.50 | \$ 1.80 |
| Second quarter 2017 | \$ 2.54 | \$ 1.31 |
| Third quarter 2017 | \$ 1.84 | \$ 0.90 |
| Fourth quarter 2017 (through November 2, 2017) | \$ 1.70 | \$ 0.69 |

As of November 2, 2017, the closing price of our common stock as reported by the NASDAQ Global Market was \$0.72. As of November 2, 2017, we had approximately 32 holders of record of our common stock. This number does not include beneficial owners whose shares were held in street name.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our common stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. We do not intend to pay cash dividends in respect of our common stock in the foreseeable future.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of June 30, 2017:

- on an actual basis;
- on an as adjusted basis to give further effect to the sale of 5,525,000 units and 4,475,000 pre-funded units in this offering at a public offering price of \$0.80 and \$0.79 per unit and pre-funded unit, respectively, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, and excluding the proceeds, if any, from the exercise of the common warrants or pre-funded warrants issued pursuant to this offering.

You should read this table together with our consolidated financial statements and the related notes and the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” section of our Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed with the SEC on August 14, 2017, which is incorporated by reference into this prospectus.

| | As of June 30, 2017 | |
|--|---------------------|------------------|
| | Actual | As Adjusted |
| | (in thousands) | |
| Cash and cash equivalents | \$ 15,751 | \$ 22,771 |
| Warrant liability | — | — |
| Preferred stock, \$0.001 par value per share; 5,000,000 shares authorized and no shares issued and outstanding | — | — |
| Common stock, \$0.001 par value per share; 200,000,000 shares authorized, 24,700,746 shares issued and outstanding ⁽¹⁾ , actual; 200,000,000 shares authorized; 30,225,746 shares issued and outstanding ⁽¹⁾ , as adjusted | 25 | 30 |
| Additional paid-in capital | 162,564 | 169,579 |
| Accumulated deficit | (136,679) | (136,679) |
| Total stockholders’ equity | 25,910 | 32,930 |
| Total capitalization | \$ 25,910 | \$ 32,930 |

(1) Shares issued and outstanding include 13,290 shares of unvested restricted common stock, which were subject to repurchase by us as of June 30, 2017.

The foregoing table and calculations are based on 24,700,746 shares of our common stock outstanding as of June 30, 2017, and excludes:

- 1,965,206 shares of our common stock issuable upon the exercise of stock options outstanding as of June 30, 2017 at a weighted-average exercise price of \$3.92 per share;
- 926,840 shares of our common stock issuable upon the exercise of common stock warrants outstanding as of June 30, 2017 at a weighted-average exercise price of \$14.79 per share;
- 1,989,329 shares of our common stock available for future issuance under our 2014 Stock Incentive Plan, or the 2014 Plan, as of June 30, 2017, which includes 1,055,000 shares of our common stock issuable upon the exercise of stock options granted on October 4, 2017 at an exercise price of \$1.59;
- 65,710 shares of our common stock available for future issuance under our employee stock purchase plan as of June 30, 2017;
- 4,475,000 shares of common stock issuable upon the exercise of pre-funded warrants to be issued to investors in this offering at an exercise price of \$0.01 per share; and
- 10,000,000 shares of common stock issuable upon the exercise of common warrants to be issued to investors in this offering at an exercise price of \$0.80 per share.

Subsequent to June 30, 2017, the Company issued no shares of common stock upon the exercise of outstanding warrants and 6,249 shares of common stock from other transactions. Including such issuances, as of October 31, 2017, the Company had 24,706,995 shares outstanding, and 30,231,995 shares outstanding after the completion of this offering.

DILUTION

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

Our historical net tangible book deficit as of June 30, 2017 was \$(51.8) million, or \$(2.10) per share of our common stock. Historical net tangible book deficit per share represents the amount of our total tangible assets less total liabilities, divided by the number of shares of our common stock outstanding as of June 30, 2017, which includes 13,290 shares of unvested restricted stock.

After giving effect to our sale of 5,525,000 units and 4,475,000 pre-funded units in this offering at a public offering price of \$0.80 and \$0.79 per unit and pre-funded unit, respectively, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, and excluding the proceeds, if any, from the exercise of the common warrants and pre-funded warrants issued pursuant to this offering, our as adjusted net tangible book deficit as of June 30, 2017 would have been \$(44.8) million, or \$(1.48) per share. This represents an immediate decrease in net tangible book deficit per share of \$0.62 to existing stockholders and immediate dilution of \$2.28 per share to new investors purchasing units in this offering. Dilution per share to new investors is determined by subtracting as adjusted net tangible book deficit per share after this offering from the public offering price per unit paid by new investors. The following table illustrates this dilution on a per share basis:

| | | |
|---|----|---------------|
| Public offering price per unit | \$ | 0.80 |
| Historical net tangible book value (deficit) per share as of June 30, 2017 | \$ | (2.10) |
| Increase in net tangible book value (deficit) per share attributable to new investors | | 0.62 |
| As adjusted net tangible book value (deficit) per share after this offering | | <u>(1.48)</u> |
| Dilution per share to new investors | \$ | <u>2.28</u> |

If the underwriter exercises its over-allotment option in full, the as adjusted net tangible book deficit per share after this offering would be \$(1.38) per share, the increase in net tangible book deficit per share to existing stockholders would be \$0.72 per share and the dilution to new investors purchasing units in this offering would be \$2.18 per share.

The foregoing table and calculations are based on 24,700,746 shares of our common stock outstanding as of June 30, 2017, and excludes:

- 1,965,206 shares of our common stock issuable upon the exercise of stock options outstanding as of June 30, 2017 at a weighted-average exercise price of \$3.92 per share;
- 926,840 shares of our common stock issuable upon the exercise of common stock warrants outstanding as of June 30, 2017 at a weighted-average exercise price of \$14.79 per share;
- 1,989,329 shares of our common stock available for future issuance under our 2014 Stock Incentive Plan, or the 2014 Plan, as of June 30, 2017, which includes 1,055,000 shares of our common stock issuable upon the exercise of stock options granted on October 4, 2017 at an exercise price of \$1.59;
- 65,710 shares of our common stock available for future issuance under our employee stock purchase plan as of June 30, 2017;
- 4,475,000 shares of common stock issuable upon the exercise of pre-funded warrants to be issued to investors in this offering at an exercise price of \$0.01 per share; and
- 10,000,000 shares of common stock issuable upon the exercise of common warrants to be issued to investors in this offering at an exercise price of \$0.80 per share.

Subsequent to June 30, 2017, the Company issued no shares of common stock upon the exercise of outstanding warrants and 6,249 shares of common stock from other transactions. Including such issuances, as of October 31, 2017, the Company had 24,706,995 shares outstanding, and 30,231,995 shares outstanding after the completion of this offering.

To the extent that any options or warrants are exercised, new options are issued under our equity incentive plans, pre-funded units are sold in this offering, or we otherwise issue additional shares of common stock in the future at a price less than the public offering price, there may be further dilution to new investors purchasing units in this offering.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock and provisions of our certificate of incorporation and bylaws are summaries and are qualified by reference to the certificate of incorporation and the bylaws. We have filed copies of these documents with the SEC as exhibits to our registration statement of which this prospectus forms a part.

Our authorized capital stock consists of 200,000,000 shares of our common stock, par value \$0.001 per share, and 5,000,000 shares of our preferred stock, par value \$0.001 per share, all of which preferred stock is undesignated.

As of September 30, 2017, we had 24,706,995 shares of our common stock issued and outstanding held by 32 stockholders of record. This number does not include beneficial owners whose shares were held in street name.

Common Stock

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. Each election of directors by our stockholders will be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of then outstanding preferred stock.

In the event of our liquidation or dissolution, the holders of our common stock are entitled to receive proportionately all assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any of our then outstanding preferred stock. Holders of our common stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders of our common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of our preferred stock that we may designate and issue in the future.

Preferred Stock

Under the terms of our certificate of incorporation, our board of directors is authorized to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a majority of our outstanding voting stock. There are no shares of preferred stock outstanding, and we have no present plans to issue any shares of preferred stock.

Warrants

As of September 30, 2017, we had outstanding:

- warrants held by certain of our investors, or the PIPE warrants, to purchase up to an aggregate of 871,840 shares of our common stock, at an exercise price of \$15.00 per share; and
- warrants held by Silicon Valley Bank, or the SVB warrants, to purchase up to an aggregate of 55,000 shares of our common stock, at a weighted-average exercise price of \$11.44 per share.

These warrants provide for adjustments in the event of specified mergers, reorganizations, reclassifications, stock dividends, stock splits or other changes in our corporate structure. The PIPE warrants are exercisable until December 2, 2017 and as of September 30, 2017, none of the PIPE warrants had been exercised. The SVB warrants are exercisable until November 24, 2024 and will be exercised automatically on a net issuance basis if not exercised prior to the expiration date and if the then-current fair market value of one share of common stock is greater than the exercise price then in effect.

Options

As of September 30, 2017, options to purchase an aggregate of 1,965,206 shares of our common stock, at a weighted-average exercise price of \$3.92 per share, were outstanding. On October 4, 2017, we granted 1,055,000 options to purchase shares of our common stock at an exercise price of \$1.59.

Delaware Anti-Takeover Law and Certain Charter and Bylaw provisions

Delaware Law

We are subject to Section 203 of the Delaware General Corporation Law. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a “business combination” with any “interested stockholder” for three years following the date that the person became an interested stockholder, unless either the interested stockholder attained such status with the approval of our board of directors, the business combination is approved by our board of directors and stockholders in a prescribed manner or the interested stockholder acquired at least 85% of our outstanding voting stock in the transaction in which it became an interested stockholder. A “business combination” includes, among other things, a merger or consolidation involving us and the “interested stockholder” and the sale of more than 10% of our assets. In general, an “interested stockholder” is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person. The restrictions contained in Section 203 are not applicable to any of our existing stockholders that will own 15% or more of our outstanding voting stock upon the closing of this offering.

Staggered Board; Removal of Directors

Our certificate of incorporation and our bylaws divide our board of directors into three classes with staggered three-year terms. In addition, our certificate of incorporation and our bylaws provide that directors may be removed only for cause and only by the affirmative vote of the holders of 75% of our shares of common stock present in person or by proxy and entitled to vote. Under our certificate of incorporation and bylaws, any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office. Furthermore, our certificate of incorporation provides that the authorized number of directors may be changed only by the resolution of our board of directors. The classification of our board of directors and the limitations on the ability of our stockholders to remove directors, change the authorized number of directors and fill vacancies could make it more difficult for a third party to acquire, or discourage a third party from seeking to acquire, control of our company.

Stockholder Action; Special Meeting of Stockholders; Advance Notice Requirements for Stockholder Proposals and Director Nominations

Our certificate of incorporation and our bylaws provide that any action required or permitted to be taken by our stockholders at an annual meeting or special meeting of stockholders may only be taken if it is properly brought before such meeting and may not be taken by written action in lieu of a meeting. Our certificate of incorporation and our bylaws also provide that, except as otherwise required by law, special meetings of the stockholders can only be called by the chairman of our board of directors, our chief executive officer or our board of directors. In addition, our bylaws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of stockholders, including proposed nominations of candidates for election to our board of directors. Stockholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors, or by a stockholder of record on the record date for the meeting who is entitled to vote at the meeting and who has delivered timely written notice in proper form to our secretary of the stockholder’s intention to bring such business before the meeting. These provisions could have the effect of delaying until the next stockholder meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities. These provisions also could discourage a third party from making a tender offer for our common stock because even if the third party acquired a majority of our outstanding voting stock, it would be able to take action as a stockholder, such as electing new directors or approving a merger, only at a duly called stockholders meeting and not by written consent.

Super-Majority Voting

The Delaware General Corporation Law provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation’s certificate of incorporation or bylaws unless a corporation’s certificate of incorporation or bylaws, as the case may be, requires a greater percentage. Our bylaws may be amended or repealed by a majority vote of our board of directors or the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in any annual election of directors. In addition, the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in any election of directors is required to amend or repeal or to adopt any provisions inconsistent with any of the provisions of our certificate of incorporation described above.

Registration Rights

Prior Holders of Series B Redeemable Convertible Preferred Stock

On February 9, 2010, we entered into an investors' rights agreement, subsequently amended on April 23, 2012, which we refer to as the Investor Rights Agreement, with holders of our then-outstanding preferred stock. Under the Investor Rights Agreement, if holders of at least 25% of shares of common stock under the agreement request that we register their shares which represent an anticipated net aggregate offering price of at least \$5 million, then we shall file a registration statement under the Securities Act covering such shares. In addition, if we propose to register for our own account any of our securities under the Securities Act, holders of at least 10% of shares of common stock under the agreement have the right to require us to use our best efforts to register all or a portion of their shares subject to the agreement and still held by them in such registration statement. If not otherwise exercised, the rights under the Investor Rights Agreement will expire on February 6, 2019, the fifth anniversary of the closing of our IPO.

Private Placement

On December 2, 2014, we entered into a registration rights agreement with certain holders of our common stock in connection with a private placement transaction. Under the registration rights agreement for the private placement, we were required to file a registration statement with the SEC, covering the resale of the 1,743,680 shares of common stock issued in the private placement and the 871,840 shares of common stock issuable upon exercise of the warrants issued in the private placement. A registration statement relating to such shares was filed on December 19, 2014 and declared effective by the SEC on December 31, 2014.

Shares Issued in our Acquisition of Viventia Bio Inc.

In connection with our acquisition of Viventia, we entered into a registration rights agreement dated September 20, 2016, or the Registration Rights Agreement, with Clairmark Investments Ltd., or Clairmark, a former stockholder of Viventia and an affiliate of Leslie Dan, one of our directors, which acquired shares of our common stock in the acquisition. Under the Registration Rights Agreement, if Clairmark requests that we register at least 1,791,164 shares of our common stock which represent an anticipated net aggregate offering price of at least \$5 million, then we shall file a registration statement under the Securities Act covering such shares. In addition, if we propose to register for our own account any of our securities under the Securities Act, Clairmark has the right to require us to use our best efforts to register all or a portion of the shares acquired in the acquisition and still held by it in such registration statement. If not otherwise exercised, the rights under the Registration Rights Agreement described below will expire on September 20, 2021.

Expenses

Pursuant to the Investor Rights Agreement and the Registration Rights Agreement, we are required to pay all registration expenses, including the fees and expenses of one counsel to represent such holders of our common stock, other than any underwriting discounts, selling commissions and fees and expenses of such holder's own counsel related to any demand or incidental registration. We are not required to pay registration expenses if the registration request under the Investor Rights Agreement or the Registration Rights Agreement is withdrawn at the request of such holders, unless the withdrawal is due to discovery of a materially adverse change in our business after the initiation of such registration request.

The Investor Rights Agreement and the Registration Rights Agreement contain customary cross-indemnification provisions, pursuant to which we are obligated to indemnify such holders in the event of material misstatements or omissions in the registration statement attributable to us or any violation or alleged violation whether by action or inaction by us under the Securities Act, the Securities Exchange Act of 1934, as amended, or the Exchange Act, any state securities or Blue Sky law or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities or Blue Sky law in connection with such registration statement or the qualification or compliance of the offering, and such holders are obligated to indemnify us for material misstatements or omissions in the registration statement attributable to it.

All applicable registration rights with respect to the registration statement of which this prospectus forms a part have been waived.

Transfer Agent and Registrar

Our transfer agent and registrar for our common stock is Computershare Trust Company, Inc.

NASDAQ Global Market

Our common stock is listed on The NASDAQ Global Market under the symbol “EBIO.”

DESCRIPTION OF SECURITIES WE ARE OFFERING

We are offering 5,525,000 units, each unit consisting of one share of our common stock and one common warrant to purchase one share of our common stock, and 4,475,000 pre-funded units, each pre-funded unit consisting of one pre-funded warrant to purchase one share of our common stock and one common warrant to purchase one share of our common stock. The share of common stock and accompanying common warrant included in each unit will be issued separately, and the pre-funded warrant to purchase one share of common stock and the accompanying common warrant included in each pre-funded unit will be issued separately. Units will not be issued or certificated. We are also registering the shares of common stock included in the units and the shares of common stock issuable from time to time upon exercise of the pre-funded warrants included in pre-funded units and common warrants included in the units and the pre-funded units offered hereby.

Common Stock

The material terms and provisions of our common stock and each other class of our securities which qualifies or limits our common stock are described under the caption "Description of Capital Stock" in this prospectus.

Common Warrants

The following is a summary of all material terms and provisions of the common warrants that are being offered hereby, the form of which has been filed as an exhibit to the registration statement of which this prospectus is a part. Prospective investors should carefully review the terms and provisions of the form of common warrant for a complete description of the terms and conditions of the common warrants.

Duration and Exercise Price

Each common warrant offered hereby will have an exercise price equal to \$0.80. The common warrants will be immediately exercisable and may be exercised until the fifth anniversary of the issuance date, at which time they will be automatically exercised on a cashless basis. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The common warrants will be issued separately from the common stock, and may be transferred separately immediately thereafter. Common warrants will be issued in certificated form only.

Exercisability

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

Cashless Exercise

If, at the time a holder exercises its common warrants, a registration statement registering the issuance of the shares of common stock underlying the common warrants under the Securities Act is not then effective or available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the common warrant. The common warrants will be automatically exercised on a cashless basis on the expiration date.

Fundamental Transactions

In the event of any fundamental transaction, as described in the common warrants and generally including any merger with or into another entity, sale of all or substantially all of our assets, tender offer or exchange offer, or reclassification of our common stock, then upon any subsequent exercise of a common warrant, the holder will have the right to receive as alternative consideration, for each share of our common stock that would have been issuable upon such exercise immediately prior to the occurrence of such fundamental transaction, the number of shares of common stock of the successor or acquiring corporation or

of our company, if it is the surviving corporation, and any additional consideration receivable upon or as a result of such transaction by a holder of the number of shares of our common stock for which the common warrant is exercisable immediately prior to such event. In addition, in certain circumstances, upon a fundamental transaction, the holder will have the right to require us to repurchase its warrants at their fair value using the Black Scholes option pricing formula; provided, however, such holder may not require us or our successor entity to repurchase the warrants for the Black Scholes value solely in connection with a fundamental transaction that is not approved by our board of directors, and therefore not within our control.

Restrictions on Variable Rate Transactions

From the date of the execution of the underwriting agreement by and between us and H.C. Wainwright & Co., LLC, and until the earlier of the (i) fifth anniversary of the initial exercise date of the common warrants and (ii) the time that all of the common warrants have been exercised in full, we are prohibited from effecting or entering into an agreement to effect any issuance of our common stock or any securities that would entitle the holder to acquire at any time our common stock (or a combination thereof) involving a variable rate transaction. A variable rate transaction means a transaction in which we (i) issue or sell any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive, additional shares of our common stock either (A) at a conversion price, exercise price or exchange rate or other price that is based upon, and/or varies with, the trading prices of or quotations for the shares of our common stock at any time after the initial issuance of such debt or equity securities or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to our business or the market for such common stock or (ii) enter into, or effects a transaction under, any agreement, including, but not limited to, an equity line of credit or an at-the-market sales agreement, whereby we may issue securities at a future determined price.

Transferability

Subject to applicable laws and a standard legend with regard to restriction on transfer only in compliance with a public offering or an available exemption therefrom, the common warrant may be transferred at the option of the holder upon surrender of the common warrant to us together with the appropriate instruments of transfer.

No Listing

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

Right as a Shareholder

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

Waivers and Amendments

No term of the common warrants may be amended or waived without the written consent of the holder of such warrant.

Pre-Funded Warrants

The following is a summary of all material terms and provisions of the pre-funded warrants that are being offered hereby, the form of which has been filed as an exhibit to the registration statement of which this prospectus is a part. Prospective investors should carefully review the terms and provisions of the form of pre-funded warrant for a complete description of the terms and conditions of the pre-funded warrants.

Pre-funded warrants provide any purchaser in this offering with the ability to purchase pre-funded units (each pre-funded unit consisting of one pre-funded warrant to purchase one share of our common stock and one common warrant to purchase one share of our common stock) in lieu of units that would otherwise result in the purchaser's beneficial ownership exceeding 4.99% of our outstanding common stock (or, at the election of the purchaser, 9.99%). This is accomplished through purchasing

pre-funded warrants at a price equal to the purchase price for units, less \$0.01, which \$0.01 is the exercise price for the pre-funded warrants. Each pre-funded warrant is exercisable into one share of our common stock as offered hereunder. Thus, the purchaser is paying essentially the purchase price for a unit at closing of the offering but is not deemed to beneficially own the shares of common stock included in the units until the purchaser exercises the pre-funded warrant. Once purchased, the purchase price of the pre-funded warrants is not refundable. While the warrant permits waiver of provisions by us and the holder of the warrant, this would not affect the pre-funding as that is the purchase price of the instrument which is paid at the time of closing and becomes part of our proceeds received from this offering. In addition, the pre-funded warrants are perpetual and do not have an expiration date.

Duration and Exercise Price

Each pre-funded warrant will have an outstanding exercise price per share equal to \$0.01. The pre-funded warrants will be immediately exercisable and may be exercised at any time until the pre-funded warrants are exercised in full. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The pre-funded warrants will be issued separately from the accompanying common warrants included in the pre-funded units, and may be transferred separately immediately thereafter.

Exercisability

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

Cashless Exercise

If, at the time a holder exercises its warrant, there is no effective registration statement registering, or the prospectus contained therein is not available for an issuance of the shares underlying the warrant to the holder, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to exercise its pre-funded warrants on a cashless basis and receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the pre-funded warrant.

Fundamental Transactions

In the event of any fundamental transaction, as described in the pre-funded warrants and generally including any merger with or into another entity, sale of all or substantially all of our assets, tender offer or exchange offer, or reclassification of our common stock, then upon any subsequent exercise of a pre-funded warrant, the holder will have the right to receive as alternative consideration, for each share of our common stock that would have been issuable upon such exercise immediately prior to the occurrence of such fundamental transaction, the number of shares of common stock of the successor or acquiring corporation or of our company, if it is the surviving corporation, and any additional consideration receivable upon or as a result of such transaction by a holder of the number of shares of our common stock for which the pre-funded warrant is exercisable immediately prior to such event.

Transferability

Subject to applicable laws, a pre-funded warrant may be transferred at the option of the holder upon surrender of the pre-funded warrant to us together with the appropriate instruments of transfer.

Fractional Shares

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

Trading Market

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

Right as a Stockholder

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

CERTAIN RELATIONSHIPS AND TRANSACTIONS WITH RELATED PERSONS

Since January 1, 2014, we have engaged in the following transactions with our directors, executive officers, holders of more than 5% of our voting securities, and affiliates or immediate family members of our directors, executive officers, and holders of more than 5% of our voting securities. We believe that all of these transactions were on terms as favorable as could have been obtained from unrelated third parties.

Viventia Acquisition

On September 20, 2016, we entered into a Share Purchase Agreement with Viventia, the shareholders of Viventia named therein - collectively referred to herein as the "Selling Shareholders" - and, solely in its capacity as seller representative, Clairmark, an affiliate of Leslie Dan, one of our directors, pursuant to which we agreed to and simultaneously completed the acquisition of all of the outstanding capital stock of Viventia from the Selling Shareholders, referred to herein as the "Acquisition." The Selling Shareholders included Clairmark and Mr. Hurly, our chief executive officer. In connection with the closing of the Acquisition, we issued 4,013,431 shares of our common stock to the Selling Shareholders according to their pro rata share of Viventia's then-outstanding common shares, which represented approximately 19.9% of our voting power as of immediately prior to the issuance of such shares of our common stock.

In connection with the closing of the Acquisition, we entered into a registration rights agreement with Clairmark, pursuant to which Clairmark, has rights, subject to specific conditions, to require us to file registration statements covering the 3,582,328 shares it acquired in the Acquisition or to include such shares in registration statements that we may file for ourselves or other stockholders.

In connection with the forgiveness of certain debt held by Viventia immediately preceding the Acquisition, Viventia irrevocably assigned and set over the right to receive up to \$814,000 in the form of research and development investment tax credits to and in favor of Clairmark. In October 2016, we received \$697,000 in research and development investment tax credits and in November 2016, we remitted the same amount to Clairmark.

Manufacturing and Office Leases

Following the Acquisition, we lease a manufacturing, laboratory, and office facility in Winnipeg, Manitoba, from an affiliate of Mr. Dan, under a five-year renewable lease through September 2020 with a right to renew the lease for one subsequent five-year term. We have an annual minimum rent obligation of \$296,000 for this facility. During the year ended December 31, 2016, we incurred \$86,000 in rent expense for this facility. During the six months ended June 30, 2017, we incurred \$154,000 in rent expense for this facility.

Following the Acquisition, we also lease an office facility in Toronto, Ontario from an affiliate of Mr. Dan. The lease is on a month-to-month basis unless terminated by either party by giving the requisite notice. We pay approximately \$2,000 per month for this office facility. During the year ended December 31, 2016, we incurred \$5,000 in rent expense for this facility. During the six months ended June 30, 2017, we incurred \$9,000 in rent expense for this facility.

Protoden License

Following the Acquisition, we are party to an intellectual property license agreement under which we pay fees to Protoden Technologies Inc., or Protoden, a company owned by Clairmark. Pursuant to the agreement, we have an exclusive, perpetual, irrevocable and non-royalty bearing license, with the right to sublicense, under certain patents and technology to make, use and sell products that utilize such patents and technology. The annual fee is \$100,000. Beginning on January 1, 2025, the licenses granted to us will require no further payments to Protoden. During the year ended December 31, 2016, we paid \$28,000 to Protoden under this license agreement. During the six months ended June 30, 2017, we paid \$100,000 to Protoden under this license agreement.

Participation in Initial Public Offering

Certain of our stockholders who held more than 5% of our voting securities at the time of the transaction and their affiliated entities purchased shares in our initial public offering, or IPO, at the IPO price. Third Rock Ventures LP purchased a total of 551,482 shares of our common stock for a purchase price of \$5,514,820; JAFCO Super V3 Investment Limited Partnership purchased a total of 219,790 shares of our common stock for a purchase price of \$2,197,900; and Flagship Ventures Management, Inc., and its affiliated entities, purchased a total of 378,729 shares of our common stock for a purchase price of \$3,787,290.

Participation in Private Placement

Broadfin Healthcare Master Fund, LTD, one of our stockholders who held more than 5% of our voting securities at the time of the transaction, purchased a total of 108,900 shares of our common stock at a price per share of \$11.47 and warrants to purchase 54,450 shares of our common stock at an exercise price of \$15.00 per share for a purchase price of \$1,249,083 in a private placement completed in December 2014 on the same terms as the other investors in the private placement.

PRINCIPAL STOCKHOLDERS

The following table sets forth information with respect to the beneficial ownership of our common stock as of October 31, 2017 by:

- each of our directors;
- each of our named executive officers;
- all of our current directors and executive officers as a group; and
- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock based on currently available Schedules 13D and 13G filed with the Securities and Exchange Commission.

The percentage ownership information under the column entitled "Before offering" is based on 24,706,995 shares of our common stock outstanding as of October 31, 2017. The percentage ownership information under the column entitled "After offering" gives effect to the sale of 5,525,000 units and 4,475,000 pre-funded units in this offering, and assumes no exercise of the underwriter's over-allotment option and no exercise of the common warrants and pre-funded warrants issued pursuant to this offering.

Beneficial ownership is determined in accordance with the rules and regulations of the SEC and includes voting or investment power with respect to our common stock. Shares of our common stock subject to options and warrants that are currently exercisable or exercisable within 60 days after October 31, 2017 are considered outstanding and beneficially owned by the person holding the options or warrants for the purpose of calculating the percentage ownership of that person but not for the purpose of calculating the percentage ownership of any other person. Except as otherwise noted, the persons and entities in this table have sole voting and investing power with respect to all of the shares of our common stock beneficially owned by them, subject to community property laws, where applicable. Except as otherwise set forth below, the address of each beneficial owner is c/o Eleven Biotherapeutics, Inc., 245 First Street, Suite 1800, Cambridge, Massachusetts 02142.

| Name and Address of Beneficial Owner | Number of shares beneficially owned | Percentage of shares beneficially owned | |
|---|-------------------------------------|---|----------------|
| | | Before offering | After offering |
| 5% Stockholders: | | | |
| Third Rock Ventures, L.P.(1) | 4,841,591 | 19.6% | 16.0% |
| Clairmark Investments Ltd.(2) | 3,582,328 | 14.5% | 11.8% |
| Directors and Named Executive Officers: | | | |
| Wendy L. Dixon, Ph.D.(3) | 36,996 | * | * |
| Abbie C. Celniker, Ph.D.(4) | 921,073 | 3.7% | 3.0% |
| Paul G. Chaney(3) | 36,996 | * | * |
| Leslie L. Dan(2)(5) | 3,593,763 | 14.5% | 11.9% |
| Jay S. Duker, M.D.(6) | 28,476 | * | * |
| Barry J. Gertz, M.D., Ph.D.(6) | 28,476 | * | * |
| Jane V. Henderson(7) | 49,986 | * | * |
| Daniel S. Lynch(8) | 182,283 | * | * |
| Stephen A. Hurly(9) | 523,752 | 2.1% | 1.7% |
| Richard Fitzgerald | — | — | — |
| John J. McCabe, C.P.A.(10) | 173,202 | * | * |
| Arthur DeCillis, M.D.(11) | 34,623 | * | * |
| Karen Tubridy, Pharm.D.(12) | 32,753 | * | * |
| All current executive officers and directors as a group (10 persons) (13) | 5,401,801 | 21.1% | 17.3% |

* Less than one percent.

(1) Based on information reported by Third Rock Ventures, L.P., or TRV L.P., on Schedule 13D filed with the SEC on February 21, 2014. TRV L.P. directly holds 4,841,591 shares of common stock. Each of Third Rock Ventures GP L.P.,

or TRV GP, as sole general partner of TRV L.P., and Third Rock Ventures GP, LLC, or TRV GP LLC, as sole general partner of TRV GP, may be deemed to share voting and dispositive power with respect to all shares held by TRV L.P. Each of Mark J. Levin, Kevin Starr, and Dr. Robert I. Tepper, as a manager of TRV LLC, may also be deemed to share voting and dispositive power with respect to all shares held by TRV L.P. Each of the reporting persons disclaims beneficial ownership of the TRV Shares other than those shares which such person owns of record. The address of each of the reporting persons is Third Rock Ventures, 29 Newbury Street, 3rd Floor, Boston, MA 02116.

- (2) Based on information reported by Clairmark on Schedule 13D filed (1) with the SEC on September 26, 2016. Clairmark is the beneficial owner of the 3,582,328 shares of common stock issued to Clairmark as consideration for the Acquisition of Viventia. Of these shares, 358,232 are being held in escrow for indemnification purposes related to the Acquisition. The address of each of the reporting persons is Clairmark Investments Ltd., 305 Milner Avenue, Suite 914, Toronto, Ontario M1B 3V4.
- (3) Consists of 36,996 shares of common stock issuable upon the exercise of options exercisable within 60 days after October 31, 2017.
- (4) Consists of (i) 409,915 shares of common stock and (ii) 511,158 shares of common stock issuable upon the exercise of options exercisable within 60 days after October 31, 2017.
- (5) Includes 11,435 shares of common stock issuable upon the exercise of options exercisable within 60 days after October 31, 2017.
- (6) Consists of 28,476 shares of common stock issuable upon the exercise of options exercisable within 60 days after October 31, 2017.
- (7) Consists of 49,986 shares of common stock issuable upon the exercise of options exercisable within 60 days after October 31, 2017.
- (8) Consists of (i) 70,879 shares of restricted common stock and (ii) 111,404 shares of common stock issuable upon the exercise of options exercisable within 60 days after October 31, 2017.
- (9) Consists of (i) 398,031 shares of common stock issued to Mr. Hurly as consideration for the Acquisition (as defined below) and (ii) 125,721 shares of common stock issuable upon the exercise of options exercisable within 60 days after October 31, 2017. Of the shares of common stock, 39,803 are being held in escrow for indemnification purposes related to the Acquisition.
- (10) Consists of (i) 5,930 shares of common stock and (ii) 167,272 shares of common stock issuable upon the exercise of options exercisable within 60 days after October 31, 2017. Mr. McCabe resigned as our Chief Financial Officer effective as of October 20, 2017.
- (11) Consists of 34,623 shares of common stock issuable upon the exercise of options exercisable within 60 days after October 31, 2017. Mr. DeCillis resigned as our Chief Medical Officer on October 3, 2017.
- (12) Based upon information set forth in the Form 4 filed on June 29, 2016. Ms. Tubridy resigned as our Chief Development Officer on September 20, 2016.
- (13) Consists of (i) 4,461,153 shares of common stock and (ii) 940,648 shares of common stock issuable upon the exercise of options exercisable within 60 days after October 31, 2017. Mr. DeCillis resigned as our Chief Medical Officer on October 3, 2017. Mr. McCabe resigned as our Chief Financial Officer effective as of October 20, 2017.

UNDERWRITING

We have entered into an underwriting agreement with H.C. Wainwright & Co., LLC as the sole book-running manager of this offering.

Pursuant to the terms and subject to the conditions contained in the underwriting agreement, we have agreed to sell to the underwriter, and the underwriter has agreed to purchase from us, the number of securities set forth opposite its name below:

| Underwriter | Units, each consisting of one share of Common Stock and one Common Warrant | Pre-funded Units, each consisting of one Pre-funded Warrant and one Common Warrant |
|----------------------------|---|---|
| H.C. Wainwright & Co., LLC | 5,525,000 | 4,475,000 |
| Total | 5,525,000 | 4,475,000 |

The underwriting agreement provides that the obligations of the underwriter to purchase the units included in this offering are subject to approval of legal matters by counsel and to other conditions. The underwriter is obligated to purchase all of the units (other than those covered by the over-allotment option described below) if it purchases any of the units.

We have granted the underwriter the option to purchase up to 1,500,000 additional shares of common stock at a purchase price of \$0.79 per share and/or common warrants to purchase up to an aggregate of 1,500,000 shares of common stock at a purchase price of \$0.01 per common warrant with an exercise price of \$0.80 per share to cover over-allotments, if any, less the underwriting discounts and commissions. The underwriter may exercise its option at any time within 30 days from the date of this prospectus.

Discounts, Commissions and Expenses

The underwriter proposes to offer the units pursuant to the underwriting agreement to the public at the public offering price set forth on the cover page of this prospectus and to certain dealers at that price less a concession not in excess of \$0.036 per unit. After this offering, the public offering price and concession may be changed by the underwriter. No such change shall change the amount of proceeds to be received by us as set forth on the cover page of this prospectus.

In connection with the sale of the units to be purchased by the underwriter, the underwriter will be deemed to have received compensation in the form of underwriting commissions and discounts. The underwriter's commissions and discounts will be 7% of the gross proceeds of this offering, or \$0.056 per unit and pre-funded unit, based on the public offering price per unit set forth on the cover page of this prospectus.

The following table shows the underwriting discounts and commissions payable to the underwriter by us in connection with this offering.

| | Per Share | Per Pre-funded Warrant | Per Common Warrant | Total Per Share and Accompanying Common Warrant | Total Per Pre-funded Warrant and Accompanying Common Warrant |
|--|------------------|-------------------------------|---------------------------|--|---|
| Public offering price | \$ 0.79 | \$ 0.78 | \$ 0.01 | \$ 0.80 | \$ 0.79 |
| Underwriting discounts and commissions payable by us | \$ 0.0553 | \$ 0.0553 | \$ 0.0007 | \$ 0.056 | \$ 0.056 |

We have also agreed to pay the underwriter \$20,000 for non-accountable expenses and reimburse the underwriter for reasonable out-of-pocket expenses, including legal fees and expenses, of up to \$100,000. We estimate the total expenses payable by us for this offering to be approximately \$0.4 million, which amount excludes the underwriting discounts, commissions and estimated expenses.

We have granted the underwriter, (i) for a period of nine months following the consummation of an offering, under certain circumstances, a right of first refusal to act, among other things, as sole book-running manager for any future public or private

equity or debt securities offering by us, and (ii) a right for a tail fee equal to 7% of the gross proceeds raised by us from certain investors in connection with certain financing transactions consummated by us within a six-month period.

Indemnification

Pursuant to the underwriting agreement, we have agreed to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act, or to contribute to payments that the underwriter or such other indemnified parties may be required to make in respect of those liabilities.

Lock-Up Agreements

We have agreed not to (i) offer, pledge, issue, sell, contract to sell, purchase, contract to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock; (ii) enter into any swap or other arrangement that transfers, in whole or in part, any of the economic consequences of ownership of shares of our common stock; or (iii) file any registration statement with the Securities and Exchange Commission relating to the offering of any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock, without the prior written consent of H.C. Wainwright & Co., LLC for a period of 90 days following the date of this prospectus (the "Lock-up Period"). This consent may be given at any time without public notice. These restrictions on future issuances are subject to exceptions, including for (i) the issuance of shares of our common stock sold in this offering, (ii) the issuance of shares of our common stock upon the exercise of outstanding options or warrants or pursuant to certain other rights, (iii) the issuance of shares of our common stock or options to acquire shares of our common stock pursuant to our existing equity incentive plans and (iv) the filing of one or more registration statements on Form S-8 with respect to shares of our common stock underlying our equity incentive plans from time to time.

In addition, subject to certain limited circumstances, each of our directors and executive officers, and certain of our principal stockholders, has entered into a lock-up agreement with the underwriter. Under the lock-up agreements, the directors, executive officers and applicable stockholders may not, directly or indirectly, sell, offer to sell, contract to sell, or grant any option for the sale (including any short sale), grant any security interest in, pledge, hypothecate, hedge, establish an open "put equivalent position" (within the meaning of Rule 16a-1(h) under the Exchange Act), or otherwise dispose of, or enter into any transaction which is designed to or could be expected to result in the disposition of, any shares of our common stock or securities convertible into or exchangeable for shares of our common stock, or publicly announce any intention to do any of the foregoing, without the prior written consent of H.C. Wainwright & Co., LLC, for a period of 90 days from the date of this prospectus. This consent may be given at any time without public notice.

Electronic Distribution

This prospectus may be made available in electronic format on websites or through other online services maintained by the underwriter or by its affiliates. In those cases, prospective investors may view offering terms online and prospective investors may be allowed to place orders online. Other than this prospectus in electronic format, the information on the underwriter's websites or our website and any information contained in any other websites maintained by the underwriter or by us is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or the underwriter in its capacity as underwriter, and should not be relied upon by investors.

Price Stabilization, Short Positions and Penalty Bids

In connection with the offering the underwriter may engage in stabilizing transactions, syndicate covering transactions and penalty bids in accordance with Regulation M under the Exchange Act:

- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum.
- Sales by the underwriter of securities in excess of the number of securities the underwriter is obligated to purchase creates a syndicate short position. The underwriter may close out any syndicate short position by purchasing shares in the open market.
- Syndicate covering transactions involve purchases of the common stock in the open market after the distribution has been completed in order to cover syndicate short positions.
- Penalty bids permit the underwriter to reclaim a selling concession from a syndicate member when the common stock originally sold by the syndicate member is purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of the common stock. As a result,

the price of our common stock may be higher than the price that might otherwise exist in the open market. These transactions may be discontinued at any time.

Neither we nor the underwriter make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our shares of common stock. In addition, neither we nor the underwriter make any representation that the underwriter will engage in these transactions or that any transaction, if commenced, will not be discontinued without notice.

Other Relationships

From time to time, the underwriter and its affiliates may provide in the future, various advisory, investment and commercial banking and other services to us in the ordinary course of business, for which they may receive customary fees and commissions.

LEGAL MATTERS

The validity of the securities offered hereby is being passed upon for us by Hogan Lovells US LLP. Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. is acting as counsel for the underwriter in connection with this offering.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2016, as set forth in their report, which contains an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern as described in Note 1 to the consolidated financial statements, included therein, and which are incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

The consolidated financial statements of Viventia included in Eleven Biotherapeutics, Inc.'s Current Report on Form 8-K/A dated December 6, 2016, (which contains an explanatory paragraph describing conditions that raise substantial doubt about Viventia's ability to continue as a going concern as described in Note 1 to the consolidated financial statements, included therein) and incorporated by reference as Exhibits 99.1 and 99.2 to the registration statement of which this prospectus forms a part, have been incorporated in reliance on the report of PricewaterhouseCoopers LLP, independent auditors, given on the authority of said firm as experts in auditing and accounting.

INCORPORATION BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The SEC file number for the documents incorporated by reference in this prospectus is 001-36296. The documents incorporated by reference into this prospectus contain important information that you should read about us.

The following documents are incorporated by reference into this document:

- our Annual Report on Form 10-K for the year ended December 31, 2016, filed on March 24, 2017;
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2017 and June 30, 2017, filed on May 4, 2017 and August 14, 2017, respectively;
- those portions of our Definitive Proxy Statement on Schedule 14A filed on April 7, 2017 that are deemed "filed" with the SEC; and
- our Current Reports on Form 8-K (other than portions thereof furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits accompanying such reports that relate to such items) filed with the SEC on January 6, 2017, March 6, 2017, April 3, 2017, May 1, 2017, May 22, 2017, June 12, 2017, September 22, 2017, October 13, 2017 (as amended on October 18, 2017) and October 20, 2017.

We also incorporate by reference into this prospectus all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of the initial registration statement of which this prospectus is a part and prior to the effectiveness of such registration statement and all documents that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus but prior to the termination of the offering. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference into this document will be deemed to be modified or superseded for purposes of the document to the extent that a statement contained in this document or any other subsequently filed document that is deemed to be incorporated by reference into this document modifies or supersedes the statement.

You may request, orally or in writing, a copy of any or all of the documents incorporated herein by reference. These documents will be provided to you at no cost, by contacting: Eleven Biotherapeutics, Inc., Attn: Chief Financial Officer, 245 First Street, Suite 1800, Cambridge, MA 02142. In addition, copies of any or all of the documents incorporated herein by reference may be accessed at our website at <http://www.elevenbio.com>. The information on such website is not incorporated by reference and is not a part of this prospectus.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the securities being offered in this offering. This prospectus, which constitutes part of the registration statement, does not include all of the information contained in the registration statement and the exhibits, schedules and amendments to the registration statement. For further information with respect to us and our common stock, we refer you to the registration statement and to the exhibits and schedules to the registration statement. Statements contained in this prospectus about the contents of any contract, agreement or other document are not necessarily complete, and, in each instance, we refer you to the copy of the contract, agreement or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference. 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.

You may read and copy the registration statement of which this prospectus is a part at the SEC's public reference room, which is located at 100 F Street, N.E., Room 1580, Washington, DC 20549. You can request copies of the registration statement by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the SEC's public reference room. In addition, the SEC maintains an Internet website, which is located at <http://www.sec.gov>, that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. You may access the registration statement of which this prospectus is a part at the SEC's Internet website. Our reports on Forms 10-K, 10-Q and 8-K, and amendments to those reports, are also available for download, free of charge, as soon as reasonably practicable after these reports are filed with the SEC, at our website at <http://www.elevenbio.com>. The content contained in, or that can be accessed through, our website is not a part of this prospectus.



5,525,000 Units (each Unit contains one Share of Common Stock and one Common Warrant to purchase one Share of Common Stock)
4,475,000 Pre-funded Units (each Pre-funded Unit contains one Pre-funded Warrant to Purchase one Share of Common Stock and one Common Warrant to purchase one Share of Common Stock)
(4,475,000 Shares of Common Stock Underlying the Pre-funded Warrants) and

(10,000,000 Shares of Common Stock Underlying the Common Warrants)



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PROSPECTUS
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Sole Book-Running Manager

H.C. Wainwright & Co.

November 1, 2017