

PROSPECTUS



Lion Biotechnologies, Inc.

14,612,033 Shares of Common Stock

This prospectus relates to the sale of up to (i) 7,111,317 outstanding shares of our common stock, (ii) 847,000 shares of common stock issuable upon the conversion of outstanding shares of our Series A Convertible Preferred Stock (the "Series A Preferred"), and (iii) 6,653,716 shares issuable upon the exercise of currently outstanding common stock purchase warrants (the "Warrants"), in each case held by some of our selling stockholders. For a list of the selling stockholders, please see "Selling Stockholders." The selling stockholders may sell these shares from time to time in the principal market on which our common stock is traded at the prevailing market price, in negotiated transactions, or through any other means described in the section titled "Plan of Distribution." The selling stockholders may be deemed underwriters within the meaning of the Securities Act of 1933, as amended, of the shares of common stock that they are offering. We will pay the expenses of registering these shares. We will not receive proceeds from the sale of our shares by the selling stockholders that are covered by this prospectus. However, we will receive payment of the exercise price upon any exercise of the Warrants, and any such proceeds we receive will be used for general corporate purposes and for working capital.

The shares are being registered to permit the selling stockholders, or their respective pledgees, donees, transferees or other successors-in-interest, to sell the shares from time to time in the public market. We do not know when or in what amount the selling stockholders may offer the securities for sale. The selling stockholders may sell some, all or none of the securities offered by this prospectus.

Our common stock is traded on The NASDAQ Global Market under the symbol "LBIO." On November 2, 2016, the last reported sale price of our common stock as reported on The NASDAQ Global Market was \$5.90.

**You should understand the risks associated with investing in our common stock. Before making an investment, read the "Risk Factors," which begin on page 4 of this prospectus.**

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

The date of this prospectus is November 3, 2016

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed on behalf of the selling stockholders with the Securities and Exchange Commission (the “SEC”) to permit the selling stockholders to sell the shares described in this prospectus in one or more transactions. The selling stockholders and the plan of distribution of the shares being offered by them are described in this prospectus under the headings “Selling Stockholders” and “Plan of Distribution.”

As permitted by the rules and regulations of the SEC, the registration statement filed by us includes additional information not contained in this prospectus. You may read the registration statement and the other reports we file with the SEC at the SEC’s web site or its offices described below under the heading “Where You Can Find More Information.”

You should rely only on the information that is contained in this prospectus or that is incorporated by reference into this prospectus. We and the selling stockholders have not authorized anyone to provide you with information that is in addition to or different from that contained in, or incorporated by reference into, this prospectus. If anyone provides you with different or inconsistent information, you should not rely on it.

The shares of common stock offered by this prospectus are not being offered in any jurisdiction where the offer or sale of such common stock is not permitted. You should not assume that the information contained in, or incorporated by reference into, this prospectus is accurate as of any date other than the date of this prospectus or, in the case of the documents incorporated by reference, the date of such documents, regardless of the date of delivery of this prospectus or any sale of the common stock offered by this prospectus. Our business, financial condition, liquidity, results of operations and prospects may have changed since those dates. The rules of the SEC may require us to update this prospectus in the future.

## PROSPECTUS SUMMARY

This summary highlights selected information about us contained elsewhere in this prospectus or incorporated by reference in this prospectus; it does not contain all of the information you should consider before investing in our common stock. This prospectus includes or incorporates by reference information about the common stock being offered by the selling stockholders, as well as information regarding our business and industry and detailed financial data. You should read the entire prospectus and the information incorporated by reference herein before making an investment decision. This prospectus includes forward-looking statements that involve risks and uncertainties. See “Cautionary Note Regarding Forward-Looking Statements” for more information.

Throughout this prospectus, the terms “Lion,” “we,” “us,” “our,” and “our company” refer to Lion Biotechnologies, Inc., a Nevada corporation.

## OUR COMPANY

We are a clinical-stage biotechnology company focused on the development and commercialization of novel cancer immunotherapy products designed to harness the power of a patient’s own immune system to eradicate cancer cells. Our lead program is an adoptive cell therapy utilizing tumor-infiltrating lymphocytes (TIL), which are T cells derived from patients’ tumors, for the treatment of metastatic melanoma. We are also pursuing the development of TIL for other solid tumor cancer indications. In February 2016, we announced that the US Food and Drug Administration (FDA) allowed our Investigational New Drug (IND) application to conduct clinical studies using our TIL therapy in cervical and head and neck cancers.

A patient’s immune system, particularly his/her TIL, plays an important role in identifying and killing cancer cells. TIL consist of a heterogeneous population of T cells that can recognize a wide variety of cancer-specific mutations and can overcome tumor escape mechanisms. TIL therapy involves growing a patient’s TIL in special culture conditions outside the patient’s body, or ex vivo, and then infusing the T cells back into the patient in combination with interleukin-2 (IL-2). By taking TIL away from the immune-suppressive tumor microenvironment in the patient, the T cells can rapidly proliferate. Billions of TIL, when infused back into the patient, are better able to search out and potentially eradicate the tumor.

During the second half of 2015, we opened enrollment in a Phase 2 clinical trial of our lead product candidate, LN-144, for the treatment of refractory metastatic melanoma. This single-arm study is for patients with metastatic melanoma whose disease has progressed following treatment with at least one systemic therapy. The purpose of the study is to evaluate the safety and efficacy of our autologous TIL product candidate (LN-144).

In an online article published in May 2016 from the Journal of Clinical Oncology, data was presented from 101 metastatic melanoma patients treated with TIL therapy in a Phase 2 clinical trial conducted at the National Cancer Institute (NCI) by Dr. Steven Rosenberg, M.D., Ph.D., and colleagues. In the trial, patients with metastatic melanoma were equally divided into two groups. Both groups were treated according to a standard TIL protocol using a lympho-depleting preparative regimen prior to an intravenous infusion of TIL, followed by high-dose IL-2 given intravenously to physiologic tolerance after the TIL was infused. The second group also received total body irradiation. 54% of all patients treated with TIL therapy achieved an objective response. An objective response occurs when there is a complete remission or a partial remission of the tumor. A complete remission requires a complete disappearance of all detectable evidence of disease, and a partial remission typically requires at least approximately 50% regression of measurable disease without new sites of disease. The publication reported that, of the 101 patients, 24 (24%) had experienced a complete remission (CR). With a median potential follow up time of 40.9 months, only one of the patients who had achieved a CR had recurred. Overall survival (OS) was 51% at 3 years. Toxicities from treatment were primarily associated with the known adverse effects of nonmyeloablative chemotherapy and administration of high-dose IL-2.

In further support of our internal research and clinical development activities, we have a Cooperative Research and Development Agreement (CRADA) with the U.S. Department of Health and Human Services, as represented by the NCI, through which we are funding the research and development of TIL-based product candidates for the treatment of advanced solid tumors. Pursuant to the CRADA, we fund TIL research and clinical trials that are being conducted by Dr. Steven Rosenberg. The CRADA had an initial term of five years and expired in August 2016. However, we have amended the CRADA to extend the term for an additional five years to August 2021, and to change certain of the goals under the CRADA. Under the amended CRADA, the goals of the CRADA have been changed to focus on the development of TIL as a stand-alone therapy or in combination with FDA-licensed products and commercially available reagents routinely used for adoptive cell therapy. The parties to the CRADA will continue the development of improved methods for the generation and selection of TIL with anti-tumor reactivity in metastatic melanoma, bladder, lung, breast, and HPV-associated cancers.

We have a worldwide, exclusive patent license from the National Institutes of Health (NIH) for intellectual property to develop, manufacture and commercialize TIL therapy for the treatment of melanoma, which was amended in 2015 to include the exclusive license of this intellectual property for the treatment of lung cancer, HPV-associated cancers, breast cancer, and bladder cancer. We also have an exclusive license from the NIH for intellectual property relating to a TIL-based therapy for use in melanoma in which TIL that express various inhibitory receptors such as 4-1BB (also known as CD137), PD-1, TIM-3 and LAG-3 are selected and expanded for infusion into the patient. TIL that express these proteins are associated with higher tumor reactivity than other TIL populations, so fewer cells may be needed to be therapeutically effective.

During 2015, we received orphan drug designation for LN-144 in the United States to treat metastatic melanoma. This designation provides seven years of market exclusivity in the United States, subject to certain limited exceptions. However, the orphan drug designation does not convey any advantage in or shorten the duration of the regulatory review or approval process.

We are pursuing refractory metastatic melanoma as our first target indication because of the promising initial NCI results and the commercial opportunity inherent in the significant unmet need of this patient population. Melanoma is a common type of skin cancer, accounting for approximately 76,380 patients diagnosed and 10,130 deaths each year in the United States according to the American Cancer Society's Cancer Estimated 2016 Facts and Figures. According to the NCI's Surveillance, Epidemiology and End Results (SEER) program, about 4-7% of patients with melanoma have metastatic disease. Patients with relapsed/refractory metastatic melanoma following treatment under the current standards of care have a particularly dire prognosis with very few curative treatment options.

On September 14, 2016, we entered into that certain Exclusive and Co-Exclusive License Agreement with PolyBioCept AB, a corporation organized under the laws of Sweden, for the exclusive right and license to PolyBioCept's intellectual property to develop, manufacture, market and genetically engineer TIL produced by expansion, selection and enrichment using a cytokine cocktail. PolyBioCept has filed two patent applications with claims related to a cytokine cocktail for use in expansion of lymphocytes. The licenses are for the use in all cancers and are worldwide in scope, with the exception that the uses in melanoma are not included for certain countries of the former Soviet Union. In connection with the PolyBioCept license agreement, we also (i) entered into a clinical trials agreement with the Karolinska University Hospital to conduct clinical trials in glioblastoma and pancreatic cancer at the Karolinska University Hospital, and (ii) agreed to enter into a sponsored research agreement with the Karolinska Institute for the research of the cytokine cocktail in additional indications.

In addition to the research and development being conducted under the CRADA, in 2014 we established our own internal research and development capabilities in Tampa, Florida, near the H. Lee Moffitt Cancer & Research Institute (Moffitt) on the campus of the University of South Florida, to optimize the process of manufacturing TIL, explore the next-generation of TIL technology and new product candidates, as well as to generate new intellectual property.

#### **Company History**

We filed our original Articles of Incorporation with the Secretary of State of Nevada on September 17, 2007. Until March 2010, we were an inactive company known as Freight Management Corp. On March 15, 2010, we changed our name to Genesis Biopharma, Inc. and in 2011 we commenced our current business. On September 26, 2013, we amended and restated our Articles of Incorporation to, among other things, change our name to Lion Biotechnologies, Inc., effect a 1-for-100 reverse stock split (pro-rata reduction of outstanding shares) of our common stock, increase (after the reverse stock split) the number of our authorized number of shares of common stock to 150,000,000 shares, and authorize the issuance of 50,000,000 shares of "blank check" preferred stock, \$0.001 par value per share.

Our principal executive offices are located at 112 West 34<sup>th</sup> Street, 18<sup>th</sup> Floor, New York, NY 10120, and our telephone number at that address is (212) 946-4856. Our website is located at www.lbio.com. Information on our website is not, and should not be considered, part of this prospectus.

#### THE OFFERING

Common Stock offered by the selling stockholders	14,612,033 shares(1)
Common Stock offered by us	None
Common Stock outstanding	61,931,096 shares(2)
Common Stock to be outstanding after the offering	69,431,812 shares(2)(3)
NASDAQ Global Market Symbol	LBIO
Use of proceeds	We will not receive any proceeds from the sale of the common stock offered hereby. However, we may receive up to a maximum of approximately \$16,634,000 of gross proceeds from the exercise of Warrants by selling stockholders, which proceeds we expect to use for general working capital. No assurances can be given that all or any portion of such Warrants will ever be exercised.
Risk Factors	An investment in our common stock involves significant risks. See "Risk Factors" beginning on page 4.

(1) Consists of 7,111,317 outstanding shares of common stock, 847,000 shares of common stock issuable upon the conversion of the outstanding shares of Series A Preferred, and 6,653,716 shares of common stock issuable upon the exercise of outstanding Warrants (which Warrants may be exercised at an exercise price of \$2.50 per share).

(2) As of September 30, 2016, and does not include (i) a total of 12,149,074 restricted stock units and shares of common stock issuable upon the exercise of outstanding options (with exercise prices ranging from \$3.13 to \$117.00 per share) and warrants (with exercise prices ranging from \$2.50 to \$2.51) or (ii) the 847,000 shares of common stock issuable upon the conversion of the shares of Series A Preferred.

(3) Assumes the conversion of all of the Series A Preferred and the exercise of all of the Warrants by the selling stockholders, but does not include the 5,496,358 shares of common stock issuable upon the exercise of restricted stock units, outstanding options and other warrants.

## RISK FACTORS

Investing in our common stock involves certain risks. Before you decide whether to purchase any shares of our common stock, in addition to the other information in this prospectus or incorporated by reference into this prospectus, you should carefully consider the risks described in the reports we file with the SEC, including the “Risk Factors” disclosed in our most recent Annual Report on Form 10-K and Quarterly Report on Form 10-Q, which are incorporated by reference into this prospectus, as such risk factors may be updated from time to time by our future filings with the SEC. If one or more of these risks materializes, our business, financial condition and results of operations may be adversely affected. In that event, the value of our common stock could decline. The risks that are described in this prospectus or in any document that is incorporated by reference into this prospectus are not the only risks that we face. Additional risks not presently known to us or that we currently believe to be immaterial may also adversely affect our business, financial condition and results of operations.

### CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements which relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results to be materially different from any future results expressed or implied by the forward-looking statements. In some cases, you can identify forward-looking statements by the use of words such as “believe,” “anticipate,” “intend,” “plan,” “estimate,” “may,” “could,” “anticipate,” “predict,” or “expect” and similar expressions. You should not place undue reliance on forward-looking statements since they involve known and unknown risks, uncertainties and other factors that are, in many cases, beyond our control. Forward-looking statements are not guarantees of future performance. Actual events or results may differ materially from those discussed in the forward-looking statements as a result of various factors. Except as required by applicable law, we do not undertake any obligation to publicly update any forward-looking statements, whether as a result of new information, future developments or otherwise. Important factors that could cause actual results to differ materially from those reflected in our forward-looking statements include, among others:

- our inability to obtain regulatory approval for, or successfully commercialize, our leading product candidate, LN-144 or our other product candidates;
- the inability of our contract manufacturers to effectively produce our products;
- capacity constraints at our contract manufacturers;
- our inability to obtain regulatory approval for, or successfully commercialize, our leading product candidate, LN-144 or our other product candidates, such as LN-145;
- our inability to secure and maintain relationships with collaborators and contract manufacturers;
- difficulty in enrolling patients in our clinical trials, and uncertainty of clinical trial results;
- our history of operating losses and inability to ever become profitable;
- our limited history of complying with public company reporting requirements;
- uncertainty and volatility in the price of our common stock;
- the costs and effects of existing and potential governmental investigation and litigation;
- our inability to meet the continued listing requirements of The NASDAQ Global Market;
- our inability to develop, implement and maintain appropriate internal controls in the future;
- uncertainty as to our employees’, independent contractors’ compliance with regulatory standards and requirements and insider trading rules;
- dependence on the efforts of third-parties to conduct and oversee our clinical trials for our product candidates, to manufacture clinical supplies of our product candidates, and to commercialize our product candidates;

- the extent of government regulations;
- a loss of any of our key management personnel;
- our inability to develop or commercialize our product candidates due to intellectual property rights held by third parties and our inability to protect the confidentiality of our trade secrets; and
- our inability to access capital in the future to fund proposed operations.

All written and verbal forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. We caution investors not to rely too heavily on the forward-looking statements we make or that are made on our behalf. We undertake no obligation, and specifically decline any obligation, to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

In addition, you should refer to the section of this prospectus entitled “Risk Factors” for a discussion of other important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this prospectus will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all.

#### **USE OF PROCEEDS**

We will not receive any proceeds from the sale of the common stock by the selling stockholders pursuant to this prospectus. All proceeds from the sale of the shares will be for the account of the selling stockholders. The selling stockholders may sell these shares in the over-the-counter market or otherwise, at market prices prevailing at the time of sale, at prices related to the prevailing market price, or at negotiated prices. However, we will receive proceeds upon the cash exercise of the Warrants held by some of the selling stockholders. If all of the Warrants are exercised at the initial exercise price of \$2.50 per share (which exercise price is subject to adjustment under customary anti-dilution protections), then we will receive gross proceeds of approximately \$16,634,000. Any such proceeds will be used for working capital and general corporate purposes. No assurance can be given, however, that all or any portion of such Warrants will be exercised.

The selling stockholders will pay any underwriting discounts and commissions and expenses incurred by the selling stockholders for brokerage or legal services or any other expenses incurred by the selling stockholders in disposing of the shares included in this prospectus. We will bear all other costs, fees and expenses incurred in effecting the registration of the shares covered by this prospectus, including all registration and filing fees and fees and expenses of our counsel and accountants.



## SELLING STOCKHOLDERS

### Selling Stockholders Table

This prospectus covers an aggregate of 14,612,033 shares of our common stock, consisting of (i) 7,111,317 outstanding shares of common stock, (ii) 847,000 shares of common stock issuable upon the conversion of the outstanding shares of Series A Preferred, and (iii) 6,653,716 shares issuable upon the exercise of all of the common stock purchase Warrants held by certain of the selling stockholders.

On November 5, 2013, we completed a private placement in which we issued (i) 3,145,300 shares of our common stock, (ii) 17,000 shares of our Series A Preferred, and (iii) warrants to purchase a total of 11,645,300 shares of common stock (the "2013 Private Placement"). The purchase price of each common stock/warrant unit was \$2.50, and the purchase price of each Series A Preferred/warrants unit was \$1,000. Except for the shares owned by Ayer Capital Partners Master Fund, L.P. and Ayer Capital Partners Kestrel Fund, LP, and 346,433 shares owned by General Merrill McPeak, all of the shares included in this prospectus were sold in the 2013 Private Placement. The shares held by Ayer Capital Partners Master Fund, L.P. and Ayer Capital Partners Kestrel Fund, LP were issued in May 2013 in connection with a recapitalization in which all of the convertible debentures and all common stock purchase warrants held by these two institutional investors were converted or exchanged for shares of common stock. The 446,433 shares owned by Merrill McPeak and included in this prospectus were acquired by General McPeak in 2013 (including 100,000 shares he purchased in the 2013 Private Placement).

We are registering the shares under the Securities Act of 1933, as amended (the "Securities Act"), to give the selling stockholders the opportunity, if they so desire, to publicly sell the shares for their own accounts in such amounts and at such times and prices as each may choose. The selling stockholders may from time to time offer and sell pursuant to this prospectus any or all of the below listed shares of common stock owned by them. The registration of these shares does not require that any of the shares be offered or sold by the selling stockholders. The selling stockholders may from time to time offer and sell all or a portion of their shares in the over-the-counter market, in negotiated transactions, or otherwise, at prices then prevailing or related to the then current market price or at negotiated prices.

The registered shares may be sold directly or through brokers or dealers, or in a distribution by one or more underwriters on a firm commitment or best efforts basis. To the extent required, the names of any agent or broker-dealer and applicable commissions or discounts and any other required information with respect to any particular offer will be set forth in a prospectus supplement. Please see "Plan of Distribution." The selling stockholders and any agents or broker-dealers that participate with the selling stockholders in the distribution of registered shares may be deemed to be "underwriters" within the meaning of the Securities Act, and any commissions received by them and any profit on the resale of the registered shares may be deemed to be underwriting commissions or discounts under the Securities Act.

No estimate can be given as to the amount or percentage of common stock that will be held by the selling stockholders after any sales made pursuant to this prospectus because the selling stockholders are not required to sell any of the shares being registered under this prospectus. The following table assumes that the selling stockholders will sell all of the shares included in this prospectus.

Transferees, successors and donees of identified selling stockholders will not be able to use this prospectus for resales until they are named in the table below by prospectus supplement or post-effective amendment. If required, we will add transferees, successors and donees by prospectus supplement in instances where the transferee, successor or donee has acquired its shares from holders named in this prospectus after the effective date of this prospectus.

On June 7, 2016, we sold (i) 9,684,000 shares of our common stock and (ii) 11,368,633 shares of our new Series B Preferred Stock (the "Series B Preferred") to certain accredited and institutional investors, including to some of the selling stockholders listed in this prospectus. The 11,368,633 shares of Series B Preferred are convertible into 11,368,633 shares of our common stock (as of September 30, 2016, a total of 3,421,960 of the foregoing Series B Preferred shares had been converted into 3,421,960 shares of common stock).

The following table sets forth the beneficial ownership of the selling stockholders. The term "selling stockholder" or "selling stockholders" includes the stockholders listed below and their respective transferees, assignees, pledges, donees or other successors. Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Shares of common stock subject to options, warrants and convertible securities currently exercisable or convertible, or exercisable or convertible within 60 days are deemed outstanding, including for purposes of computing the percentage ownership of the person holding the option, warrant or convertible security, but not for purposes of computing the percentage of any other holder. As of September 30, 2016, we had 61,931,096 shares of common stock issued and outstanding.

	Beneficial Ownership Before Offering			Beneficial Ownership After Offering <sup>(1)</sup>	
	Number of Shares	Percent	Number of Shares Being Offered	Number of Shares	Percent
Ronald Bartlett & Valerie Bartlett, JT WROS	58,400 <sup>(3)</sup>	*	58,400	0	0
Carol Cody	35,000 <sup>(3)</sup>	*	35,000	0	0
Larry Caillouet	8,000 <sup>(3)</sup>	*	8,000	0	0
Anton Bogner & Barbara D. Bogner	30,000 <sup>(2)</sup>	*	30,000	0	0
Gerald Cohen	38,250 <sup>(3)</sup>	*	38,250	0	0
Michael Crawford	40,000 <sup>(2)</sup>	*	40,000	0	0
Robert Crothers	99,000 <sup>(3)</sup>	*	3,000	96,000	*
Karen Crothers & Arielle Crothers, JTIC	13,000 <sup>(2)</sup>	*	13,000	0	0
William A Crothers & JoAnn Crothers, JTWROS	1,000 <sup>(2)</sup>	*	1,000	0	0
Christine Crothers	1,000 <sup>(2)</sup>	*	1,000	0	0
Joseph Johnson	1,000 <sup>(2)</sup>	*	1,000	0	0
Caren Corvetti	3,000 <sup>(2)</sup>	*	3,000	0	0
Alicia Rodriguez	1,000 <sup>(2)</sup>	*	1,000	0	0
Jay E. Bradbury	7,500 <sup>(2)</sup>	*	7,500	0	0
Sudip Chakraborty & Anshu S. Chakraborty, JT WROS	26,000 <sup>(2)</sup>	*	26,000	0	0
Ficksman Family Trust	25,000 <sup>(2)</sup>	*	25,000	0	0
Finkelstein Living Trust, William Finkelstein, Trustee	24,000 <sup>(3)</sup>	*	12,500	0	0
Stanley Friedman & Leslie Friedman JT WROS	25,000 <sup>(2)</sup>	*	25,000	0	0
Marc Fuhrman	25,000 <sup>(3)</sup>	*	25,000	0	0
Carol Giorello and Anthony Giorello, JTWROS	12,000 <sup>(3)</sup>	*	12,000	0	0
William D. Gould	16,400 <sup>(3)</sup>	*	16,400	0	0
Ravi Gutta	50,000 <sup>(2)</sup>	*	50,000	0	0
Jennifer Nugent	25,000 <sup>(4)</sup>	*	25,000	0	0
Christofer Innace	11,700 <sup>(2)</sup>	*	11,700	0	0
Andrei Iancu	37,500 <sup>(3)</sup>	*	37,500	0	0
Ashish Jhingan & Dolly Jhingan JT WROS	49,500 <sup>(3)</sup>	*	49,500	0	0
Martin J. Junge	27,500 <sup>(2)</sup>	*	27,500	0	0
Edward King	18,800 <sup>(3)</sup>	*	18,800	0	0
George A. Kingsley, Jr. and Nadine J. Kingsley JT WROS	29,000 <sup>(3)</sup>	*	29,000	0	0
Paul Frederick Lawrence and Rachelle Anne Lawrence, Trustees of the Rachelle and Paul Lawrence Living Trust, dated Aug. 1, 2008	25,167 <sup>(4)</sup>	*	25,000	167	*
Thomas Leith	57,500 <sup>(2)</sup>	*	52,500	5,000	*
Jeffrey Lieberman	12,500 <sup>(2)</sup>	*	12,500	0	0
Robert H. Lipp Separate Property Trust	10,000 <sup>(2)</sup>	*	10,000	0	0
Merrill McPeak	585,183 <sup>(5)</sup>	*	446,433	138,750	*
Brian M. Miller	25,000 <sup>(3)</sup>	*	25,000	0	0
Anthony Naer	2,000 <sup>(2)</sup>	*	2,000	0	0
Kenneth E Normann	1,000 <sup>(2)</sup>	*	1,000	0	0
Steven Pisacano	1,200 <sup>(2)</sup>	*	1,250	0	0
Prasad Family Trust UAD 08/18/11, Subir Prasad, Trustee	20,000 <sup>(3)</sup>	*	20,000	0	0

	Beneficial Ownership Before Offering			Beneficial Ownership After Offering <sup>(1)</sup>	
	Number of Shares	Percent	Number of Shares Being Offered	Number of Shares	Percent
R&I Family Trust u/a/d 3/15/90, Richard N. Kipper & Inta A. Kipper, Trustees	13,500 <sup>(3)</sup>	*	13,500	0	0
Jeff Rennell & Christine Kellye Rennell, JT WROS	95,000 <sup>(3)</sup>	1.63%	95,000	0	0
Charles F. Richter	96,000 <sup>(3)</sup>	*	96,000	0	0
Mark W. Schwartz	5,000 <sup>(2)</sup>	*	5,000	0	0
Randall A. Sebring & Alice M. Sebring JT WROS	93,668 <sup>(2)</sup>	*	93,668	0	0
Howard L. Simon & Dana B. Simon as Trustees of the Howard and Dana Simon 2000 Revocable Trust	17,000 <sup>(3)</sup>	*	17,000	0	0
Manish Singh	285,000 <sup>(3)</sup>	*	250,000	35,000	*
Sneh Singhal	8,000 <sup>(2)</sup>	*	8,000	0	0
Daryl Squicciarini	40,000 <sup>(4)</sup>	*	40,000	0	0
Joseph Telushkin	4,000 <sup>(4)</sup>	*	4,000	0	0
Lisa Torsiello	15,000 <sup>(2)</sup>	*	15,000	0	0
K. David Tritsch	10,000 <sup>(2)</sup>	*	10,000	0	0
Ninish Ukkan	16,500 <sup>(3)</sup>	*	16,500	0	0
Windward Venture Partners	25,000 <sup>(4)(14)</sup>	*	25,000	0	0
Leland Zurich & Valerie Zurich, JT WROS	33,000 <sup>(2)</sup>	*	33,000	0	0
Roth Capital Partners, LLC	254,369 <sup>(4)(6)</sup>	*	254,369	0	0
Perceptive Life Sciences Master Fund Ltd.	4,695,329 <sup>(7)(8)</sup>	8.02%	429,215	4,266,114.00	7.2%
Titan-Perc Ltd.	269,015 <sup>(4)(8)</sup>	*	269,015	0	0
Quogue Capital LLC	5,778,947 <sup>(9)</sup>	9.04% <sup>(7)</sup>	4,000,000	3,778,947	5.91%
Acuta Capital Fund, LP	3,094,526 <sup>(10)</sup>	4.99% <sup>(11)</sup>	1,119,265	2,885,637 <sup>(12)</sup>	4.64%
Acuta Opportunity Fund, LP	922,845 <sup>(10)</sup>	1.48 <sup>(11)</sup>	380,735	542,110 <sup>(12)</sup>	*
Broadfin Healthcare Master Fund, Ltd	3,094,526 <sup>(13)</sup>	4.99% <sup>(13)</sup>	1,500,000	3,094,526 <sup>(13)</sup>	4.99%
Mark H Rachesky	500,000 <sup>(4)</sup>	*	500,000	0	0
Jason Stein	202,632 <sup>(3)</sup>	*	150,000	52,632	*
Michael Weiser	127,632 <sup>(3)</sup>	*	75,000	52,632	*
Elizabeth Weiser	25,000 <sup>(4)</sup>	*	25,000	0	0
venBio Select Fund LLC	4,262,219 <sup>(14)</sup>	6.87% <sup>(14)</sup>	862,700	4,262,219	6.87% <sup>(14)</sup>
Doverhill Partners LLC	275,000 <sup>(15)(3)</sup>	*	275,000	0	0
Ayer Capital Partners Master Fund, L.P.(16)	2,756,386 <sup>(2)(17)</sup>	4.45%	2,756,386	0	0
Ayer Capital Partners Kestrel Fund, LP(16)	66,947 <sup>(2)(17)</sup>	*	66,947	0	0

\* Less than 1%

- (1) Assumes the selling stockholder sells all of the shares of common stock included in this prospectus.
- (2) Consists solely of currently outstanding shares of common stock.
- (3) Includes both currently outstanding shares of common stock and shares of common stock issuable upon the exercise of the stockholder's Warrant.
- (4) Consists solely of shares of common stock issuable upon exercise of a Warrant.
- (5) Represents 446,433 shares of common stock and options to purchase 138,750 shares of common stock that are exercisable currently or within 60 days of September 30, 2016.
- (6) Represents shares of common stock issuable upon exercise of the Warrant issued to this broker-dealer as compensation for placement agent services provided in the 2013 Private Placement. Byron Roth and Gordon Roth, as members of the selling stockholder, have shared voting and investment power over the shares.

- (7) Includes 97,000 shares of our common stock issuable upon the conversion of Series A Preferred shares, 909,491 shares of our common stock issuable upon the conversion of Series B Preferred Shares and 333,215 shares of our common stock issuable upon exercise of a Warrant. Under the terms of the Warrant, the holder does not have the right to exercise the Warrant to the extent that after giving effect to such exercise, the holder (together with its affiliates) would beneficially own in excess of 4.99% (the “Maximum Percentage”) of the shares of our common stock outstanding immediately after giving effect to such exercise. By written notice to us, however, the holder may from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 9.99%. Similarly, under the terms of the Series A Preferred and the Series B Preferred, the holder does not have the right to convert the Series A Preferred or the Series B Preferred to the extent that after giving effect to such conversion, the holder (together with its affiliates) would beneficially own in excess of the Maximum Percentage. By written notice to us, however, the holder may from time to time increase or decrease the Maximum Percentage with respect to any or all of the warrants, the Series A Preferred and the Series B Preferred to any other percentage not in excess of 9.99%. We have received such a notice from this holder and accordingly, this holder may exercise any portion of the warrant or convert any shares of Series A Preferred or the Series B Preferred up until the point that the holder’s beneficial ownership equals 9.99%.
- (8) Perceptive Advisors LLC is the advisor of Perceptive Life Sciences Master Fund Ltd. and Titan-Perc Ltd., and Mr. Edelman is the managing member of Perceptive Advisors LLC. Titan-Perc Ltd. beneficially owns 210,930 shares of common stock and a Warrant to purchase 58,085 additional shares of common stock. Mr. Edelman and Perceptive Advisors LLC are deemed to beneficially own the shares of Perceptive Life Sciences Master Fund Ltd. and Titan-Perc Ltd.
- (9) The number of shares beneficially owned before the offering consists of 3,846,280 shares of our common stock and 1,932,667 shares of our common stock issuable upon conversion of Series B Preferred owned by Quogue Capital LLC and does not include up to 2,000,000 shares of our common stock issuable upon the exercise of a Warrant (which warrant cannot be exercised if such exercise would result in the holder beneficially owning more than 4.99% of our shares of common stock) owned by Quogue Capital LLC. Under the terms of the Warrant, the holder does not have the right to exercise the warrant to the extent that after giving effect to such exercise, the holder (together with its affiliates) would beneficially own in excess of the Maximum Percentage. Accordingly, Quogue Capital may not exercise its Warrant if Quogue Capital’s beneficial ownership would exceed 4.99% following such exercise. Wayne Rothbaum, a member of our board of directors, is the sole managing member of Quogue Capital LLC and may be deemed to beneficially own the shares owned by Quogue Capital LLC.
- (10) The combined beneficial ownership of accounts affiliated with and managed by Acuta Capital Partners, LLC (including Acuta Capital Fund, LP, Acuta Opportunity Fund, LP and other affiliates) is 5.09%, which beneficial ownership does not include any shares issuable upon exercise of Warrants or conversion of Series B Preferred as described in footnote (11). Under the terms of these Warrants, the holders do not have the right to exercise the Warrants to the extent that after giving effect to such exercise, the holder (together with its affiliates) would beneficially own in excess of 4.99% (the “Maximum Percentage”) of the shares of our common stock outstanding immediately after giving effect to such exercise. Similarly, under the terms of the Series B Preferred, the holders do not have the right to convert the Series B Preferred to the extent that after giving effect to such conversion, the holder (together with its affiliates) would beneficially own in excess of the Maximum Percentage. By written notice to us, however, the holder may from time to time increase or decrease the Maximum Percentage with respect to any or all of the Warrants and the Series B Preferred to any other percentage not in excess of 9.99%. We have not received any such notice from this holder and accordingly, neither the Warrants nor the Series B Preferred may be exercised or converted to the extent that after giving effect to such exercise or conversion such holder’s beneficial ownership (together with its affiliates) would exceed 4.99%.
- (11) Includes 1,119,265 shares of our common stock issuable upon exercise of a Warrant held by Acuta Capital Fund, LP and 313,532 shares of our common stock issuable upon exercise of a Warrant held by Acuta Opportunity Fund, LP. Also includes 177,351 shares of common stock issuable upon conversion of the Series B Preferred held by Acuta Capital Fund, LP, and 54,569 shares of common stock issuable upon conversion of the Series B Preferred held by Acuta Opportunity Fund, LP. Under the terms of these Warrants and the Series B Preferred, the holders do not have the right to exercise the Warrants or convert the Series B Preferred to the extent that after giving effect to such exercise or conversion, the holder (together with its affiliates) would beneficially own in excess of the Maximum Percentage. Accordingly, neither of the Warrants nor the Series B Preferred may be exercised or converted to the extent that, after giving effect to such exercise or conversion, such holder’s beneficial ownership (together with its affiliates) would exceed 4.99%. Richard Lin is the Managing Member of Acuta Capital Partners, LLC, the general partner of Acuta Capital Fund, LP and Acuta Opportunity Fund, LP and an investment manager for 2B LLC, and has voting and investment power over all of the shares held by Acuta Capital Fund, LP and Acuta Opportunity Fund, LP (and certain shares held by 2B LLC). Mr. Lin disclaims beneficial ownership over all of the shares held by Acuta Capital Fund, LP and Acuta Opportunity Fund, LP, except to the extent of his pecuniary interest therein.

- (12) Includes 177,351 shares of common stock issuable upon conversion of the Series B Preferred held by Acuta Capital Fund, LP, and 54,569 shares of common stock issuable upon conversion of the Series B Preferred held by Acuta Opportunity Fund, LP. Under the terms of the Series B Preferred, the holders do not have the right to convert the Series B Preferred to the extent that after giving effect to such conversion, the holder (together with its affiliates) would beneficially own in excess of the Maximum Percentage. Accordingly, the Series B Preferred may not be converted to the extent that, after giving effect to such conversion, such holder's beneficial ownership (together with its affiliates) would exceed 4.99%.
- (13) The number of shares beneficially owned before the offering consists of 2,638,259 shares of our common stock and 456,267 shares issuable upon the conversion of some of our Series A Preferred. The number of shares beneficially owned before the offering does not include 293,733 shares of our common stock issuable upon the conversion of our Series A Preferred, 750,000 shares of our common stock issuable upon exercise of a warrant or 1,250,549 shares of common stock issuable upon conversion of Series B Preferred. Under the terms of the Warrant, the holder does not have the right to exercise the warrant to the extent that after giving effect to such exercise, the holder (together with its affiliates) would beneficially own in excess of the Maximum Percentage. Similarly, under the terms of the Series A Preferred and the Series B Preferred, the holder does not have the right to convert the Series A Preferred or the Series B Preferred (subject to certain limited exceptions) to the extent that after giving effect to such conversion, the holder (together with its affiliates) would beneficially own in excess of the Maximum Percentage. The number of shares beneficially owned after the offering consists of 2,638,259 shares of our common stock owned by Broadfin Healthcare Master Fund, Ltd and 456,267 shares of our common stock issuable upon the conversion of shares of Series B Preferred but does not include 794,282 shares of Series B Preferred, the conversion of cannot exceed the Maximum Percentage. Kevin Kotler in his capacity as investment manager of Broadfin Health Master Fund, Ltd., may also be deemed to have investment discretion and voting power over the shares held by that selling stockholder. Mr. Kotler disclaims any beneficial ownership of these shares.
- (14) The numbers of shares beneficially owned before the offering does not include 525,000 shares of our common stock issuable upon exercise of a Warrant and the 727,592 shares of our common stock issuable upon the conversion of Series B Preferred. Because the exercise of the Warrant, and the conversion of the Series B Preferred are limited by the provision thereof that prohibits the exercise or conversion if venBio Select Fund LLC (together with its affiliates) would beneficially own in excess of the Maximum Percentage following such exercise or conversion. venBio Select Fund LLC also manages an investment account on behalf of 2B LLC and may also be deemed to have investment discretion and voting power over the 281,391 shares held by 2B LLC. Behzad Aghazadeh, in his capacity as portfolio manager of venBio Select Fund LLC may also be deemed to have investment discretion and voting power over securities held by venBio Select Fund LLC and the 2B LLC managed account. Mr. Aghazadeh disclaims any beneficial ownership of the reported securities.
- (15) Brian Wornow in his capacity as investment manager of Doverhill Partners LLC, may also be deemed to have investment discretion and voting power over the shares held by that selling stockholder. Mr. Wornow disclaims any beneficial ownership of these shares.
- (16) Peter D. Kozlowski, the Managing Director of Windward Venture Partners, has investment discretion and voting power over the shares held by that selling stockholder.
- (17) The investment advisor of this selling stockholder is Ayer Capital Management, LP (the "Advisor"). ACM Capital Partners, LLC ("ACM") is the general partner of the Advisor, and Ayer Capital Partners, LLC is the general partner of the selling stockholder. Jay Venkatesan, one of this company's directors, is the managing member of ACM and Ayer Capital Partners LLC.

#### **Relationships with Selling Stockholders**

All selling stockholders, other than those discussed below, are investors who have had no position, office, or other material relationship (other than as purchasers of securities) with us or any of our affiliates within the past three years. Based on representations made to us by the selling stockholders, except as noted below, no selling stockholder is a registered broker-dealer or an affiliate of a registered broker-dealer.

Wayne P. Rothbaum is the Managing Member of Quogue Capital LLC. Mr. Rothbaum is a member of our Board of Directors.

On June 7, 2016, we raised gross proceeds of \$100 million in a private placement (the “2016 Private Placement”). The following selling stockholders who are included in this prospectus also invested in the 2016 Private Placement: Quogue Capital LLC, Broadfin Healthcare Master Fund, Ltd., Perceptive Life Sciences Master Fund Ltd., venBio Select Fund LLC, Acuta Opportunity Fund, LP (formerly Three Arch Opportunity Fund), Michael Weiser and Jason Stein. The foregoing selling stockholders purchased a total of \$45,400,000 of securities in the 2016 Private Placement. In connection with the 2016 Private Placement, we entered into a purchase agreement and a registration rights agreement with Quogue Capital LLC and the other institutional and accredited investors in that offering. The purchase agreement included certain provisions requiring that the number of directors constituting the full Board of Directors of our company be increased from five to seven directors and that Mr. Rothbaum be appointed to serve on our Board of Directors. On June 1, 2016, the size of our Board was increased to seven directors, and on June 7, 2016 Mr. Rothbaum joined our Board. In the purchase agreement, we also agreed to appoint Iain Dukes to the Board of Directors effective at a future date, and that, until the earlier of (i) the date Quogue Capital LLC, an affiliate of Mr. Rothbaum, beneficially owns less than 5% of our outstanding common stock, and (ii) June 30, 2017, which we refer to as the “effective period,” we will take no other action to (x) change the size of our Board, (y) amend, in any respect, our articles of incorporation or bylaws, or (z) enter into any agreement to do any of the foregoing, in each case, without the prior written consent of Quogue Capital. During the effective period, we also agreed that either Mr. Rothbaum or Dr. Dukes will be appointed to the Compensation Committee, Audit Committee and Nominating and Governance Committee of our Board of Directors. Dr. Dukes was appointed to our Board on August 4, 2016. On August 16, 2016, Mr. Rothbaum was appointed to our Compensation Committee, and Dr. Dukes was appointed to our Nominating and Governance Committee and our Audit Committee.

Jay Venkatesan has been a member of our Board of Directors since September 3, 2013. Through his affiliates ACM Capital Partners LLC, Ayer Capital Management, LP, and Ayer Capital Management, LP., Dr. Venkatesan manages the investments. In the May 22, 2013, this company restructured certain of its outstanding indebtedness and its warrants. As part of that restructuring, Ayer Capital Partners Master Fund, L.P., Ayer Capital Partners Kestrel Fund, LP, and Epworth-Ayer Capital (i) converted approximately \$5.32 million of senior secured promissory notes and other indebtedness (including accrued interest and penalties) into shares of our common stock, (ii) purchased additional shares of common stock for \$1.00 per share, received additional shares for no additional consideration, and (iii) exchanged warrants for the purchase of 33,604 shares of capital stock into shares of common stock. The 2,756,386 shares of common stock owned by Ayer Capital Partners Master Fund, L.P. and included in this prospectus, and the 66,947 shares owned by Ayer Capital Partners Kestrel Fund, LP. and included in this prospectus, were received in the May 2013 restructuring.

Merrill McPeak is a member of our Board of Directors. As compensation for his services as a director of this company (including for his services as our lead director and as a member of various committees of the Board of Directors), during the three years preceding the date of this prospectus, General Merrill McPeak has received \$158,750 in fees and options to purchase a total of 160,000 shares of common stock.

Roth Capital Partners LLC acted as lead placement agent in the 2013 Private Placement. As compensation for its services in the 2013 Private Placement, Roth Capital Partners LLC received a Warrant to purchase 544,369 shares of common stock and \$896,608 of cash compensation. Roth Capital Partners LLC is a registered broker-dealer. Roth Capital Partners LLC received its Warrant in the ordinary course of business for services rendered in the 2013 Private Placement, and at the time that it received the foregoing Warrant, we had no agreements or understandings, directly or indirectly, with Roth Capital Partners LLC, or to our knowledge with any other person, to distribute the Warrants or the underlying securities.

William Gould, David Ficksman, and Martin Goldblum are attorneys at TroyGould PC, a law firm. TroyGould PC has, since February 2011, from time to time acted as one of this company’s corporate/securities law firms. Members of TroyGould PC purchased \$210,000 of common stock and Warrants in the 2013 Private Placement.

Charles F. Richter is the husband of Elma Hawkins. Dr. Hawkins was our President, Chief Executive Officer and a director until June 1, 2016.

Manish Singh was our Chief Executive Officer until December 31, 2014.

The information in the above table is as of the date of this prospectus. Information concerning the selling stockholders may change from time to time and any such changed information will be described in supplements to this prospectus if and when necessary.

#### PLAN OF DISTRIBUTION

The selling stockholders, which, as used herein, includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The selling stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the date the registration statement of which this prospectus is a part is declared effective by the SEC;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted by applicable law.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, provided that they meet the criteria and conform to the requirements of that rule.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be “underwriters” within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, to the extent applicable we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the selling stockholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the selling stockholders to keep the registration statement of which this prospectus constitutes a part effective until the earlier of (1) such time as all of the shares covered by this prospectus have been disposed of pursuant to and in accordance with the registration statement or (2) the date on which all of the shares may be sold without restriction pursuant to Rule 144 of the Securities Act.

## **DESCRIPTION OF SECURITIES**

The following is a summary of all material characteristics of our capital stock as set forth in our amended and restated articles of incorporation and bylaws, as amended. Copies of these documents are filed or incorporated by reference as exhibits to the registration statement of which this prospectus forms a part.

We are presently authorized to issue 150,000,000 shares of \$0.000041666 par value common stock and 50,000,000 shares of \$0.001 par value preferred stock. As of September 30, 2016, we had 61,931,096 shares of common stock issued and outstanding, 1,694 shares of Series A Preferred issued and outstanding, and 7,946,673 shares of Series B Preferred issued and outstanding. There are no other series of shares of our preferred stock currently issued or outstanding.



## Common Stock

We have one class of common stock. Holders of our common stock are entitled to one vote per share on all matters to be voted upon by stockholders and do not have cumulative voting rights in the election of directors. Holders of shares of common stock are entitled to receive on a pro rata basis such dividends, if any, as may be declared from time to time by our board of directors in its discretion from funds legally available for that use, subject to any preferential dividend rights of outstanding preferred stock. They are also entitled to share on a pro rata basis in any distribution to our common stockholders upon our liquidation, dissolution or winding up, subject to the prior rights of any outstanding preferred stock. Common stockholders do not have preemptive rights to subscribe to any additional stock issuances by us, and they do not have the right to require the redemption of their shares or the conversion of their shares into any other class of our stock. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of any series of preferred stock that we may designate and issue in the future.

## Preferred Stock

Under our articles of incorporation, our board of directors has the authority, without further action by stockholders, to designate one or more series of preferred stock and to fix the voting powers, designations, preferences, limitations, restrictions and relative rights granted to or imposed upon the preferred stock, including dividend rights, conversion rights, voting rights, rights and terms of redemption, liquidation preference and sinking fund terms, any or all of which may be preferential to or greater than the rights of the common stock.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in our control and may adversely affect the market price of the common stock and the voting and other rights of the holders of common stock.

Series A Preferred. In October 2013, we created a new class of preferred stock designated as “Series A Convertible Preferred Stock.” The shares of Series A Preferred have a stated value of \$1,000 per share and are convertible into shares of common stock at a price of \$2.00 per share (subject to adjustment as described below). The rights of the Series A Preferred are set forth in the Certificate of Designation of Preferences and Rights of Series A Convertible Preferred Stock (the “Series A Certificate of Designation”), which gives the holders of the Series A Preferred the following rights, preferences and privileges:

The Series A Preferred may, at the option of the holder, be converted at any time or from time to time into fully paid and non-assessable shares of common stock at the conversion price in effect at the time of conversion; provided, that a holder of Series A Preferred may at any given time convert only up to that number of shares of Series A Preferred so that, upon conversion, the aggregate beneficial ownership of the common stock (calculated pursuant to Rule 13d-3 of the Act) of such holder and all persons affiliated with such holder, is not more than 4.99% of the common stock then outstanding (subject to adjustment to up to 9.99% solely at the holder’s discretion upon 60 days’ prior notice). The number of shares into which one share of Series A Preferred is convertible is determined by dividing the stated value of \$1,000 per share by the Conversion Price. The “Conversion Price” per share for the Series A Preferred is \$2.00 (subject to appropriate adjustment for certain events, including stock splits, stock dividends, combinations, recapitalizations or other recapitalizations affecting the Series A Preferred).

The Series A Preferred will automatically be converted into common stock at the then applicable Conversion Price (i) upon the written consent of the holders of at least a majority of the outstanding shares of Series A Preferred or (ii) if required by us to be able to list our common stock on a national securities exchange; provided, any such conversions will continue to be limited by, and subject to, the beneficial ownership conversion limitations set forth above.

Except as otherwise required by law, the holders of shares of Series A Preferred do not have the right to vote on matters that come before the stockholders; provided, that we may not, without the prior written consent of a majority of the outstanding Series A Preferred: (i) amend, alter, or repeal any provision of our Articles of Incorporation (including the Series A Certificate of Designation) or Bylaws in a manner adverse to the Series A Preferred; (ii) create or authorize the creation of or issue any other security convertible into or exercisable for any equity security, having rights, preferences or privileges senior to or on parity with the Series A Preferred, or increase the authorized number of shares of Series A Preferred; or (iii) enter into any agreement with respect to any of the foregoing.

In the event of any dissolution or winding up of our company, whether voluntary or involuntary, the proceeds would be paid *pari passu* among the holders of shares of our common stock, Series A Preferred and Series B Preferred, pro rata based on the number of shares held by each such holder, treating for this purpose all such securities as if they had been converted to common stock.

We may not declare, pay or set aside any dividends on shares of any class or series of our capital stock (other than dividends on shares of common stock payable in shares of common stock) unless the holders of the Series A Preferred shall first receive, or simultaneously receive, an equal dividend on each outstanding share of Series A Preferred.

Series B Preferred. In June 2016 we created a new class of Preferred Stock designated as “Series B Preferred Stock.” The rights of the Series B Preferred are set forth in the Certificate of Designation of Preferences and Rights of Series B Preferred Stock (the “Series B Certificate of Designation”). A total of 11,500,000 shares of Series B Preferred are authorized for issuance under Series B Certificate of Designation. The shares of Series B Preferred have a stated value of \$4.75 per share and, as of August 16, 2016, were convertible into shares of our common stock at a conversion price of \$4.75 per share.

Holders of Series B Preferred are entitled to dividends on an as-if-converted basis in the same form as any dividends actually paid on shares of our Series A Preferred or other securities. So long as any Series B Preferred remains outstanding, we may not redeem, purchase or otherwise acquire any material amount of our Series A Preferred or other securities.

The shares of Series B Preferred are convertible at the option of each holder at any time or from time to time into shares of our common stock at the conversion price in effect at the time of conversion, except that, subject to certain limited exceptions, no holder of Series B Preferred may convert the Series B Preferred if, after giving effect to the conversion, the holder and all affiliated persons would own beneficially more than 4.99% of our common stock (subject to adjustment to up to 9.99% solely at the holder’s discretion upon 61 days’ prior notice to us). The conversion price of \$4.75 is subject to appropriate adjustment in the event of a stock split, stock dividend, combination or other recapitalization affecting our common stock.

Holders of a majority of the outstanding shares of Series B Preferred are entitled to elect to convert all of the outstanding shares of the Series B Preferred into shares of common stock, subject to the beneficial ownership limitations of each holder set forth above.

Except as otherwise required by law, the holders of Series B Preferred have no right to vote on matters submitted to a vote of our stockholders. Without the prior written consent of a majority of the outstanding shares of Series B Preferred, however, we may not: (i) amend our articles of incorporation (including the Series B Certificate of Designation) in a manner adverse to the Series B Preferred; (ii) create or authorize the creation of any other security convertible into or exercisable for any equity security ranking as to dividends, redemption or distribution of assets upon a liquidation senior to, the Series B Preferred, or increase the authorized number of shares of Series B Preferred; or (iii) enter into any agreement with respect to any of the foregoing.

In the event of the dissolution and winding up of our company, the proceeds available for distribution to our stockholders would be paid *pari passu* among the holders of shares of our common stock, Series A Preferred and Series B Preferred, pro rata based upon the number of shares held by each such holder, treating for this purpose all such securities as if they had been converted into our common stock.

#### **Anti-Takeover Effects of Certain Provisions of Nevada Law and Charter and Bylaw Provisions**

The following provisions of our articles of incorporation and bylaws could have the effect of delaying or discouraging another party from acquiring control of us and could encourage persons seeking to acquire control of us to first negotiate with our board of directors:

- our bylaws permit stockholders to call a special meeting of stockholders only if the holders of a majority of the voting power of our outstanding stock request such a meeting;
- our bylaws provide that our board of directors will establish the authorized number of directors from time to time;
- our articles of incorporation do not permit cumulative voting in the election of directors; and
- our articles of incorporation permit our board of directors to determine the rights, privileges and preferences of any new series of preferred stock, some of which could impede the ability of a person to acquire control of our company.

#### **Transfer Agent**

Our transfer agent currently is: Continental Stock Transfer and Trust Company, 7 Battery Place, 8th Floor New York, New York 10004.

#### **DISCLOSURE OF SEC POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES**

Our amended and restated articles of incorporation provide to the maximum extent permitted under applicable law, there shall be no personal liability of a director or an officer to this corporation or its stockholders for damages for breach of fiduciary duty as a director or an officer. Our bylaws and amended and restated articles of incorporation also provide that we shall indemnify and hold harmless each person who serves at any time as a director or officer of this company from and against any and all claims, judgments and liabilities to which such person shall become subject by reason of the fact that he is or was a director or officer, and shall reimburse such person for all legal and other expenses reasonably incurred by him or her in connection with any such claim or liability. We also have the power to defend such person from all suits or claims in accordance with the Nevada Revised Statutes. The rights accruing to any person under our bylaws and amended and restated articles of incorporation do not exclude any other right to which any such person may lawfully be entitled, and we may indemnify or reimburse such person in any proper case, even though not specifically provided for by the bylaws and amended and restated articles of incorporation.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling this company pursuant to the foregoing provisions, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event a claim for indemnification against such liabilities (other than payment by us for expenses incurred or paid by a director, officer or controlling person of our company in successful defense of any action, suit, or proceeding) is asserted by a director, officer or controlling person in connection with the securities being registered, we will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction, the question of whether such indemnification by it is against public policy in the Securities Act and will be governed by the final adjudication of such issue.

#### **LEGAL MATTERS**

TroyGould PC, Los Angeles, California, has rendered an opinion with respect to the validity of the shares of common stock covered by this prospectus. Sanford J. Hillsberg, one of our directors, is an attorney with TroyGould PC. Some of the attorneys at TroyGould PC, including Mr. Hillsberg, own shares of our common stock constituting in the aggregate less than 1% of our outstanding shares of common stock.

#### **EXPERTS**

The financial statements and management's assessment of the effectiveness of internal control over the financial reporting of Lion Biotechnologies, Inc. included in this prospectus and registration statement by reference to Lion Biotechnologies, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2015, filed with the Securities and Exchange Commission on March 11, 2016, have been so incorporated in reliance on the reports of Weinberg & Company P.A., an independent registered public accounting firm, given on the authority of said firm as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement with respect to this offering of our common stock. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement, some items of which are contained in exhibits to the registration statement as permitted by the rules and regulations of the SEC. Statements contained in this prospectus as to the contents of any contract, agreement or other document are summaries of the material terms of that contract, agreement or other document. With respect to each of these contracts, agreements or other documents filed or incorporated by reference as an exhibit to the registration statement, reference is made to the exhibits for a more complete description of the matter involved. A copy of the registration statement, and the exhibits and schedules thereto, may be inspected without charge at the public reference facilities maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. Copies of these materials may be obtained by writing to the Public Reference Section of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facilities. The SEC maintains a website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC. The address of the SEC's website is <http://www.sec.gov>.

We file periodic reports and other information with the SEC. Such periodic reports and other information are available for inspection and photocopying at the public reference room and website of the SEC referred to above. We maintain a website at <http://www.lionbio.com>. You may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The information and other content contained on our website are not part of the prospectus.

## INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus the information we have filed with the SEC. The information we incorporate by reference into this prospectus is an important part of this prospectus. Any statement in a document we incorporate by reference into this prospectus will be considered to be modified or superseded to the extent a statement contained in this prospectus or any other subsequently filed document that is incorporated by reference into this prospectus modifies or supersedes that statement. The modified or superseded statement will not be considered to be a part of this prospectus, except as modified or superseded.

We incorporate by reference into this prospectus the information contained in the documents listed below, which is considered to be a part of this prospectus:

- our Annual Report on Form 10-K for the year ended December 31, 2015 filed with the SEC on March 11, 2016;
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2016 and June 30, 2016 filed with the SEC on May 9, 2016 and August 9, 2016, respectively;
- our Current Reports on Form 8-K filed with the SEC on January 4, 2016, March 10, 2016, March 15, 2016, April 7, 2016, May 9, 2016, May 27, 2016, June 3, 2016, June 8, 2016, June 8, 2016, July 8, 2016, August 8, 2016, August 18, 2016, August 24, 2016, September 15, 2016, and October 3, 2016, respectively; and
- the description of our stock contained in our registration statement on Form 8-A filed on February 25, 2015 pursuant to Section 12 of the Exchange Act, as such statement may be amended from time to time.

We also incorporate by reference into this prospectus all documents filed pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus and prior to the termination of the offering by the selling stockholders; provided, however, that we are not incorporating any information furnished under Item 2.02 or Item 7.01 of any Current Report on Form 8-K we may subsequently file.

You may request a copy of the documents incorporated by reference into this prospectus, at no cost, by writing or telephoning us at the following address: Lion Biotechnologies, Inc., 112 West 34<sup>th</sup> Street, 18<sup>th</sup> Floor, New York, New York 10120; Telephone: (212) 946-4856.

Copies of these documents are also available, without charge, through the “Investors” section of our website ([www.lbio.com](http://www.lbio.com)) as soon as reasonably practicable after they are filed with the SEC. The information contained on our website is not a part of this prospectus.

# PROSPECTUS

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## LION BIOTECHNOLOGIES, INC.

**14,612,033 Shares of Common Stock  
Offered by the Selling Stockholders**

**The date of this prospectus is November 3, 2016**

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