As filed with the Securities and Exchange Commission on August 31, 2016 **Registration No. 333-212373**

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

AMENDMENT No. 2
to
FORM S-1 ON FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Lion Biotechnologies, Inc.
(Exact name of registrant as specified in its charter)

Nevada	**75-3254381**
(State or other jurisdiction of incorporation or organization)	***(I.R.S. Employer Identification No.)***

112 W. 34th Street, 18th Floor
New York, NY 10120
(212) 946-4856
(Address, including zip code and telephone number, including area code, of registrant's principal executive offices)

Maria Fardis, Ph.D.
President and Chief Executive Officer
Lion Biotechnologies, Inc.
112 W. 34th Street, 18th Floor
New York, NY 10120
(212) 946-4856
(Name, address, including zip code and telephone number, including area code, of agent for service)

Copy to:
Istvan Benko
TroyGould PC
Suite 1600
1801 Century Park East
Los Angeles, California 90067

Approximate date of commencement of proposed sale to the public : From time to time after the effective date of this registration statement, as shall be determined by the selling stockholder s identified herein.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, check the following box. ☐

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box: þ

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering: ☐

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering: ☐

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. ☐

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. ☐

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act (Check one):

Large accelerated filer ☐	Accelerated filer þ	Non-accelerated filer ☐ (Do not check if a smaller reporting company)	Smaller reporting company ☐

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, par value $0.000041666 per share	9,684,000(2)	$ 8.61(4)	$ 83,379,240	$ 8,397(5)
Common Stock, par value $0.000041666 per share, underlying Series B Preferred Stock	11,368,633(2)(3)	8.61(4)	97,883,930	9,857
Total	21,052,633		$ 181,263,170	$ 18,254(5)

(1) In the event of a stock split, reverse stock split, stock dividend or similar transaction involving our common stock, the number of shares registered shall automatically be adjusted to cover the additional shares of stock issuable pursuant to Rule 416 under the Securities Act of 1933, as amended.

(2) The shares of common stock are being registered for resale by certain selling stockholders named in the registration statement.

(3) Represents shares issuable by the registrant upon the conversion of the registrant's Series B Preferred Stock.

(4) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) under the Securities Act of 1933, as amended. The calculation of the proposed maximum aggregate offering price of the common stock is based on the average of the high and low sales price for the common stock as reported on The NASDAQ Global Market on August 26, 2016.

(5) A portion of the fee ($7,470) has been previously paid.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

Explanatory Note

On July 1, 2016, Lion Biotechnologies, Inc. (the "Company") filed a registration statement with the Securities and Exchange Commission (the "Commission") on Form S-1 (Registration No. 333-212373) (the "Registration Statement"). The Company filed Amendment No. 1 to the Registration Statement on August 1, 2016. This Amendment No. 2 to the Registration Statement is being filed by the Company to (i) include the registration of an additional 11,368,633 shares of the Company's common stock issuable upon conversion of the Company's Series B Preferred Stock, and (ii) convert the Form S-1 into a registration statement on Form S-3.

The information contained in this prospectus is not complete and may be changed. The selling stockholders named in this prospectus may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell securities, and the selling stockholders are not soliciting offers to buy these securities, in any state where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS

Subject to Completion, Dated August 31, 2016

Lion Biotechnologies, Inc.

21,052,633 Shares of Common Stock

This prospectus relates to the sale of up to (i) 9,684,000 outstanding shares of our common stock, and (ii) 11,368,633 shares of common stock issuable upon the conversion of outstanding shares of our Series B Preferred Stock, in each case that are owned by some of our 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.

The shares are being registered to permit the selling stockholders 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 August 30, 2016, the last reported sale price of our common stock as reported on The NASDAQ Global Market was $8.37.

You should understand the risks associated with investing in our common stock. Before making an investment, read the "Risk Factors," which begin on page 5 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 August ___, 2016

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This prospectus is part of a registration statement we filed with the Securities and Exchange Commission (the “SEC”). You should rely only on the information provided in this prospectus. We have not authorized anyone to provide you with information different from that contained in this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities other than the common stock offered by this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any common stock in any circumstances in which such offer or solicitation is unlawful. The selling stockholders are offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted.

Neither the delivery of this prospectus nor any sale made in connection with this prospectus shall, under any circumstances, create any implication that there has been no change in our affairs since the date of this prospectus or that the information contained in this prospectus is correct as of any time after its date. The information in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of common stock. The rules of the SEC may require us to update this prospectus in the future.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed on behalf of the selling stockholders with 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.

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 stockholder, 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 Statement" 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.

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 th Street, 18 th 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.

Private Placement

On June 2, 2016, we entered into a securities purchase agreement (the "Securities Purchase Agreement") with various institutional and individual accredited investors to raise gross proceeds of $100 million in a private placement (the "Private Placement"). On June 7, 2016, we completed the Private Placement. In the Private Placement, we issued (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"). The shares of common stock and Series B Preferred were sold for $4.75 per share. The shares of Series B Preferred were not, when issued, convertible into common stock and, except as required by law, were non-voting. We agreed with the investors in the Private Placement to file a proxy statement with the SEC with respect to a stockholders meeting that would include a proposal to permit the Series B Preferred to become convertible into shares of our common stock and to permit the issuance of shares of common stock upon such conversion. The definitive proxy statement was filed with the SEC on July 7, 2016. At a stockholders meeting held on August 16, 2016, our stockholders approved the proposal, and our Series B Preferred became convertible into shares of common stock at an initial conversion price of $4.75 per share. Accordingly, the 11,368,633 shares of Series B Preferred are now convertible into 11,368,633 shares of our common stock. We received net proceeds of approximately $95.7 million from the Private Placement, after paying placement agent fees and estimated offering expenses, which we will use to fund our research and development and for working capital purposes. Jefferies LLC and Piper Jaffray & Co. acted as joint lead placement agents for the Private Placement, and we paid the placement agents a customary placement fee and reimbursed them for certain expenses. We filed the registration statement of which this prospectus is a part to fulfill certain of our contractual obligations to the investors in the Private Placement under a registration rights agreement we entered into pursuant to the Securities Purchase Agreement.

Risks Associated with our Business

An investment in our common stock involves a high degree of risk. Below is a summary of certain key risk factors that you should consider in evaluating an investment in our shares of common stock:

- 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 secure and maintain relationships with collaborators and contract manufacturers;
- difficultly 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.

This list is not exhaustive. Please read the discussion of these risks and other risks described under the caption "Risk Factors" beginning on page 5 of this prospectus.

THE OFFERING

Common Stock offered by the selling stockholders	21,052,633 shares(1)
Common Stock offered by us	None
Common Stock currently outstanding	58,525,667 shares(2)(3)
Common Stock to be outstanding after the offering	69,894,300 shares(2)(4)
NASDAQ Global Market Symbol	LBIO
Use of proceeds	We will not receive any proceeds from the sale of the common stock offered hereby.
Risk Factors	An investment in our common stock involves significant risks. See "Risk Factors" beginning on page 5.

(1) Represents the number of shares of common stock that may hereafter be sold under this prospectus. Includes shares of common stock issued to investors in the Private Placement and shares of common stock issuable upon the conversion of the Series B Preferred.

(2) As of August 25, 2016, and does not include (i) a total of 12,560,955 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) 847,000 shares of common stock issuable upon the conversion of our Series A Convertible Preferred Stock.

(3) Does not include 11,368,633 shares of common stock issuable upon the conversion of our Series B Preferred.

(4) Assumes the conversion of all shares of our Series B Preferred.

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, you should carefully consider the risks described under the heading "Risk Factors" 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;
- difficultly 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 are registering these shares pursuant to the registration rights granted to the investors in the Private Placement. As a result, 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 market or otherwise, at market prices prevailing at the time of sale, at prices related to the prevailing market price, or at negotiated prices.

SELLING STOCKHOLDERS

Selling Stockholders Table

This prospectus covers an aggregate of 21,052,633 shares of our common stock, consisting of (i) 9,684,000 outstanding shares of common stock and (ii) 11,368,633 shares issuable upon conversion of the Series B Preferred. The foregoing outstanding shares of common stock and Series B Preferred were issued under the Securities Purchase Agreement in the Private Placement.

We are registering the foregoing shares of common stock in accordance with the terms of a Registration Rights Agreement we entered into with the selling stockholders as part of the Private Placement in order to permit the selling stockholders to offer such shares of common stock for resale from time to time. 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 on the open 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 listed in this prospectus.

Additional selling security holders not named in this prospectus 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. 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.

The following table sets forth the beneficial ownership of the selling stockholders as reported to us by 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. Since the shares of Series B Preferred are convertible at any time, and from time to time, by the selling stockholders, except as described below, the shares of common stock issuable upon the conversion of the Series B Preferred are included in the number shares beneficially owned by the selling stockholders in the following table.

	Beneficial Ownership Before Offering			Beneficial Ownership After Offering [1]	
	Number of Shares	Percent	Number of Shares Being Offered	Number of Shares	Percent
OrbiMed Partners Master Fund Limited	2,302,100(2)(3)	3.85%	2,302,100	0	0
OrbiMed Partners II, LP	1,908,426(2)(4)	3.20%	1,908,426	0	0
Quogue Capital LLC	5,778,947(5)	9.56%	3,578,947	2,958,268	4.99%
Franklin Templeton Investment Funds - Franklin Biotechnology Discovery Fund	2,262,079(6)(7)	3.83%	914,779	1,347,300	2.28%
Franklin Strategic Series - Franklin Biotechnology Discovery Fund	1,378,100(6)(8)	2.34%	547,400	830,700	1.42%
Franklin Strategic Series - Franklin Small Cap Growth Fund	1,169,400(6)(9)	1.98%	1,169,400	0	0
Broadfin Healthcare Master Fund, Ltd.	2,935,250(10)	4.99%	2,315,789	2,991,197	4.99%
BlackRock Health Sciences Master Unit Trust	22,848(11)(12)	*	22,848	0	0
BGF World Healthscience Fund	675,088(11)(13)	1.15%	675,088	0	0
BlackRock Health Sciences Trust	56,423(11)14)	*	56,423	0	0
BlackRock Health Sciences Opportunities Portfolio, a Series of BlackRock Funds	1,140,378(11)(15)	1.93%	1,140,378	0	0
Perceptive Life Sciences Master Fund Ltd.	3,837,338(16)	6.43%	1,684,211	2,153,127	3.67%
Frazier Life Sciences VIII, LP	1,684,211(17)	2.88%	1,684,211	0	0
venBio Select Fund LLC	4,784,758(18)	8.18%	1,347,368	3,437,390	5.87%
QVT Fund V LP	1,966,412(19)(20)	2.65%	785,967	1,180,445	2.03%
QVT Fund IV LP	438,754(19)(21)	*	176,797	261,957	*
Quintessence Fund L.P.	245,775(19)(22)	*	89,868	155,907	*
Acuta Capital Fund, LP	1,974,940(23)(24)	(27)	3238,421	1,974,940	(28)
Acuta Opportunity Fund, LP	549,234(23)(25)	(27)	101,052	549,234	(28)
2B LLC (as managed by Acuta Capital Partners, LLC)	667,929(23)	(27)	75,790	667,929	(28)
2B LLC (as managed by venBio Select Advisor LLC)	292,760(18)(26)	*	21,053	271,707	*
Michael Weiser	102,632(29)	*	52,632	50,000	*
Jason Stein	152,632(30)	*	52,632	100,000	*
Mark Van Hoof	21,053	*	21,053	0	0

* Less than 1%

(1) Assumes the selling stockholder sells all of the shares of common stock included in this prospectus.

(2) OrbiMed Advisors LLC and OrbiMed Capital LLC share the investment advisory responsibility on behalf of the OrbiMed entities identified in this table. OrbiMed Advisors LLC (“OALLC”) serves as the general partner to OrbiMed Partners II, L.P. OrbiMed Capital LLC (“OCLLC”) serves as the investment adviser to OrbiMed Partners Master Fund Limited. Samuel D. Isaly is the managing member of both OALLC and OCLLC, and is deemed to have investment and voting control of OALLC and OCLLC. OALLC, OCLLC and Mr. Isaly disclaim beneficial ownership of the securities owned other than through their pecuniary interest in the underlying entities.

(3) Includes 1,243,000 shares of common stock issuable upon conversion of Series B Preferred.

(4) Includes 1,030,726 shares of common stock issuable upon conversion of Series B Preferred.

(5) 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 this 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%. We have not received any such notice from this holder and accordingly, the holder may not exercise this warrant if the holder's beneficial ownership would exceed 4.99% following such exercise. The number of shares beneficially owned after the offering consists of 2,200,000 shares of our common stock owned by Quogue Capital LLC and 758,268 shares of our common stock issuable upon exercise such warrant. 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.

(6) The common stock owned by these funds may be deemed to be beneficially owned by Franklin Advisers, Inc. ('FAV") for purposes of Rule 13d-3 under the Securities Exchange Act of 1934 (the "Act") in its capacity as the investment adviser to the Funds pursuant to investment management contracts that grant investment and/or voting power to FAV. When an investment management contract (including a sub-advisory agreement) delegates to FAV investment discretion or voting power over the securities held in the investment advisory accounts that are subject to that agreement, Franklin Resources, Inc. ("FRI") treats FAV as having sole investment discretion or voting authority, as the case may be, unless the agreement specifies otherwise. According, FAV reports on Schedule 13D that it has sole investment discretion and voting authority over the securities covered by any such investment management agreement. As a result for purposes of Rule 12d-3 under the Act, FAV may be deemed to be the beneficial owner of such securities. Beneficial ownership by FRI, FAV and their affiliates is being reported in conformity with the guidelines articulated by the SEC staff in Release No, 34-39538 (January 12, 1998) relating to organizations, such as FRI, where related entities exercise voting and investment powers over the securities being reported independently from each other. The voting and investment powers held by Franklin Mutual Advisors, LLC ("FMA"), and indirect wholly-owned investment manager subsidy of FRI, are exercised independently from FRI and from all other investment management subsidiaries of FRI (FRI, its affiliates and the investment management subsidiaries other than FMA are, collectively, "FRI affiliates"). Furthermore, internal policies and procedures of FMA and FRI establish information barriers that prevent the flow between FMA and the FRI affiliates of information that relates to the voting and investment powers over the securities owned by their respective investment management clients. Consequently, FMA and the FRI affiliates report the securities over which they hold investment and voting power separately from each other for purposes of Section 13 of the Act.

(7) Includes 493,979 shares of common stock issuable upon conversion of Series B Preferred.

(8) Includes 295,600 shares of common stock issuable upon conversion of Series B Preferred.

(9) Includes 631,500 shares of common stock issuable upon conversion of Series B Preferred.

(10) The number of shares beneficially owned before the offering consists of 2,935,250 shares of our common stock and does not include 750,000 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 this 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 of the shares of our common stock outstanding immediately after giving effect to such exercise. 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 of the shares of our common stock outstanding immediately after giving effect to such conversion. By written notice to us, however, the holder may from time to time increase or decrease the Maximum Percentage with respect to either or both of the warrant, the Series A Preferred 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, such holder may not exercise the warrants or convert the shares of Series A Preferred or Series B Preferred if the holder's beneficial ownership would exceed 4.99% following such exercise or conversion. The number of shares beneficially owned after the offering consists of 1,573,019 shares of our common stock owned by Broadfin Healthcare Master Fund, Ltd and a total of 1,418,178 shares of our common stock issuable upon exercise of warrants and/or upon conversion of Series A Preferred. 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.

(11) The registered holders of the referenced shares are funds and accounts under management by investment adviser subsidiaries of BlackRock, Inc. BlackRock, Inc. is the ultimate parent holding company of such investment adviser entities. On behalf of such investment adviser entities, Thomas Callan, as a managing director of such entities, has voting and investment power over the shares held by the funds and accounts which are the registered holders of the referenced shares. Thomas Callan expressly disclaims beneficial ownership of all shares held by such funds and accounts. The address of such funds and accounts, such investment adviser subsidiaries and Thomas Callan is 2929 Arch Street, 16th Floor, Philadelphia, PA 19104. Shares being registered for resale may not incorporate all shares deemed to be beneficially held by BlackRock, Inc.

(12) Includes 12,338 shares of common stock issuable upon conversion of Series B Preferred.

(13) Includes 364,554 shares of common stock issuable upon conversion of Series B Preferred.

(14) Includes 30,469 shares of common stock issuable upon conversion of Series B Preferred.

(15) Includes 615,816 shares of common stock issuable upon conversion of Series B Preferred.

(16) 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 this 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 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%. Perceptive Advisors LLC is the advisor of Perceptive Life Sciences Master Fund Ltd. Perceptive Advisors LLC and Joseph Edelman claim shared voting power and shared dispositive power over shares held by Perceptive Life Sciences Master Fund Ltd. Mr. Edelman is the managing member of Perceptive Advisors LLC.

(17) The general partner of Frazier Life Sciences VIII, LP, is FHM Life Sciences VIII, LP, a Delaware limited partnership (“FHM VIII LP”). The general partner of FHM VIII LP is FHM Life Sciences VIII, LLC (“FHM VIII LLC”). Patrick Heron and James Topper are the sole members of FHM VIII, LLC and in that capacity share voting and dispositive power over all shares held by Frazier Life Sciences VIII, LP. Mr. Heron and Mr. Topper disclaim beneficial ownership of these securities other than to the extent of their pecuniary interest in FHM VIII LP.

(18) 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. Under the terms of this 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 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%. We have not received any such notice from this holder and accordingly, such holder may not exercise the warrant if the holder’s beneficial ownership would exceed 4.99% following such exercise. 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 but does not have voting or investment power over the shares held by 2B LLC managed by Acuta Capital described in footnote 23 below. 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

(19) QVT Associates GP LLC is the general partner of QVT Fund IV LP, QVT Fund V LP and Quintessence Fund L.P. (together with QVT Fund IV LP, and QVT Fund V LP, the "Funds"). QVT Financial LP is the investment manager for the Funds and therefore may be deemed the beneficial owner of the common stock held by the Funds. QVT Financial GP LLC is the general partner of QVT Financial LP and therefore may be deemed the beneficial owner of common stock beneficially owned by QVT Financial LP. The reporting person disclaims beneficial ownership of the reported securities except to the extent of its pecuniary interest therein.

(20) Includes 424,430 shares of common stock issuable upon conversion of Series B Preferred.

(21) Includes 95,472 shares of common stock issuable upon conversion of Series B Preferred.

(22) Includes 48,530 shares of common stock issuable upon conversion of Series B Preferred.

(23) 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 667,929 shares held by 2B LLC managed by Acuta Capital Partners, LLC but does not have voting or investment power over the shares held by 2B LLC managed by VenBio described in footnote 18 above. Mr. Lin disclaims beneficial ownership over all of the shares held by Acuta Capital Fund, LP, Acuta Opportunity Fund, LP and 2B LLC, except to the extent of his pecuniary interest therein.

(24) Does not include 1,119,265 shares of our common stock issuable upon exercise of a warrant or 177,351 shares of common stock issuable upon conversion of the Series B Preferred. Under the terms of this warrant and the Series B Preferred, the holder does not have the right to exercise the warrant 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 of the shares of our common stock outstanding immediately after giving effect to such exercise or conversion. 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%. We have not received any such notice from this holder and accordingly, neither the warrant 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%.

(25) Does not include 313,532 shares of our common stock issuable upon exercise of a warrant or 54,569 shares of common stock issuable upon conversion of the Series B Preferred. Under the terms of this warrant and the Series B Preferred, the holder does not have the right to exercise the warrant 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 of the shares of our common stock outstanding immediately after giving effect to such exercise or conversion. 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%. We have not received any such notice from this holder and accordingly, neither the warrant nor the Series B Preferred may be exercised or converted to the extent that after giving effect to such exercise such holder's beneficial ownership (together with its affiliates) would exceed 4.99%.

(26) J. Darius Bikoff, a Member of 2B LLC, has voting and investment control over all the shares held by 2B LLC that are managed by venBio. Mr. Bikoff disclaims beneficial ownership over all the shares held by 2B LLC, except to the extent of his pecuniary interest therein. Does not include 40,927 shares of common stock issuable upon conversion of Series B Preferred.

(27) The combined total beneficial ownership of Acuta Capital Fund, LP, Acuta Opportunity Fund, LP and 2B LLC (as managed by Acuta Capital Partners, LLC) (which beneficial ownership does not currently include any shares issuable upon exercise of warrants or conversion of Series B Preferred as described above in footnotes (24) and (25)), is 5.45%. As described above, none of the warrants or Series B Preferred can be exercised or converted if as a result thereof the holder (together with its affiliates) would own in excess of the Maximum Percentage, unless a written notice to the contrary is received by the company.

(28) The combined total beneficial ownership of Acuta Capital Fund, LP, Acuta Opportunity Fund, LP and 2B LLC (as managed by Acuta Capital Partners, LLC) (which beneficial ownership does not currently include any shares issuable upon exercise of warrants as described above in footnotes (24) and (25)), will be, after the offering, 5.45%, assuming all shares offered hereby by such holders are sold. As described above, none of the warrants can be exercised if as a result thereof the holder (together with its affiliates) would own in excess of the Maximum Percentage, unless a written notice to the contrary is received by the company.

(29) Includes 25,000 shares of our common stock issuable upon exercise of a warrant.

(30) Includes 50,000 shares of our common stock issuable upon exercise of a warrant.`

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.

Relationships with 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. 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, and some of their affiliates, who were investors in the 2013 Private Placement, also purchased shares in the Private Placement.

In connection with our June 7, 2016 Private Placement, we entered into a purchase agreement and a registration rights agreement with Quogue Capital LLC (an affiliate of Wayne P. Rothman, a member of our Board of Directors) 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, 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 as of 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.

Quogue Capital purchased 1,646,280 shares of our common stock and 1,932,667 shares of our Series B Preferred in the Private Placement for a purchase price of $17 million, and is a selling stockholder. Mr. Rothbaum is the sole manager of Quogue Capital.

On August 4, 2016, Iain Dukes joined OrbiMed Advisors LLC as a consultant to OrbiMed’s private equity branch. Dr. Dukes does not have any investment or voting control over any securities owned or controlled by OrbiMed Advisors LLC or by any of the other OrbiMed entities listed as selling stockholders.

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 of 1933, 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 August 25, 2016, we had 58,525,667 shares of common stock issued and outstanding, 1,694 shares of Series A Preferred issued and outstanding, and 11,368,633 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 25, 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.

Registration Rights

In connection with the Private Placement, we entered into a Registration Rights Agreement in which we agreed to file with the SEC within 30 days of the closing of the Private Placement, a registration statement covering the resale by the purchasers of the shares of common stock purchased by them in that offering. We also agreed in the Registration Rights Agreement to file with the SEC within 30 days of the approval of the conversion feature of the Series B Preferred, a registration statement covering the resale of the shares of our common stock issuable upon conversion of such purchasers' shares of Series B Preferred by such holders. We have also agreed to use our best efforts to have the respective registration statements declared effective as soon as practicable upon filing, but in any event within 90 days after filing.

The Registration Rights Agreement provides, among other things, that in the event (i) we do not file either registration statement within the prescribed time period, (ii) the SEC does not declare effective either registration statement within the prescribed time period or (iii) either registration statement ceases to be effective under certain circumstances, we will pay to the holders on the occurrence of each such event and for each 30-day period thereafter until the applicable event is cured, an amount in cash equal to 1% of the aggregate amount invested (or outstanding, as specified in greater detail in the Registration Rights Agreement) by the holders in the Private Placement for each 30-day period (prorated for any period of less than 30 days) during which such registration statement was not effective. The filing of the registration statement of which this prospectus is a part satisfies our obligation to file the registration statements within the prescribed time period.

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, and August 24, 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 34th Street, 18th 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) 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

LION BIOTECHNOLOGIES, INC.

21,052,633 Shares of Common Stock
Offered by the Selling Stockholders

The date of this prospectus is August ___, 2016

PART II – INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

We estimate that expenses in connection with the distribution described in this registration statement (other than brokerage commissions, discounts or other expenses relating to the sale of the shares by the selling stockholders) will be as set forth below. We will pay all of the expenses with respect to the distribution, and such amounts, with the exception of the Securities and Exchange Commission registration fee, are estimates.

SEC registration fee	18,254
Accounting fees and expenses	30,000
Legal fees and expenses	100,000
Printing and related expenses	10,000
Miscellaneous	1,746
Total	$ 160,000

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS

Our Articles of Incorporation provides that no officer or director shall be personally liable to this corporation or our stockholders for monetary damages except as provided pursuant to Nevada law. Our Bylaws and Articles of Incorporation also provide that we shall indemnify and hold harmless each person who serves at any time as a director, officer, employee or agent of the 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, officer, employee or agent of the company 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 accord with the Nevada law. In certain cases, we may advance expenses incurred in defending any such proceeding. The rights accruing to any person under our Bylaws and 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 Articles of Incorporation.

Insofar as indemnification for liabilities for damages arising under the Securities Act of 1933 may be permitted to our directors, officers, and controlling persons pursuant to the foregoing provision, or otherwise, we have been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

ITEM 16. EXHIBITS

The exhibits listed on the Exhibit Index immediately following the signature page hereto are filed herewith or incorporated by reference herein, and such exhibit list is incorporated in this Item 16 by reference.

ITEM 17. UNDERTAKINGS

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement; notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the “Calculation of Registration Fee” table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement; provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) of this section do not apply if the registration statement is on Form S-3 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Securities and Exchange Commission by the registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof; provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is a part of the registration statement will, as to a purchaser with a time of contract sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was a part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant 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 whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in New York, New York, on August 30, 2016.

LION BIOTECHNOLOGIES, INC.

By: /s/ Maria Fardis
Maria Fardis
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints, jointly and severally, Maria Fardis and Franco Valle, as his/her true and lawful attorney-in-fact and agent, with full power of substitution, for him/her and in his/her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement on Form S-3, and to sign any registration statement for the same offering covered by this registration statement that is to be effective upon filing pursuant to Rule 462(b) promulgated under the Securities Act of 1933, and all post-effective amendments thereto, and to file the same and all prospectus supplements, with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he/she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his/her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Maria Fardis Maria Fardis	President, Chief Executive Officer (Principal Executive Officer)	August 30, 2016
/s/ Franco Valle Franco Valle	Principal Financial and Accounting Officer	August 30, 2016
/s/ Merrill A. McPeak Merrill A. McPeak	Director	August 30, 2016
/s/ Jay Venkatesan Jay Venkatesan	Director	August 30, 2016
/s/Sanford J. Hillsberg Sanford J. Hillsberg	Director	August 30, 2016
/s/Wayne Rothbaum Wayne Rothbaum	Director	August 30, 2016
/s/Ryan Maynard Ryan Maynard	Director	August 30, 2016
/s/ Iain Dukes Iain Dukes	Director	August 30, 2016

EXHIBIT INDEX

Exhibit	Description
3.1	Amended and Restated Articles of Incorporation filed with the Nevada Secretary of State on September 24, 2013 (incorporated herein by reference to the Registrant's Definitive Information Statement on Schedule 14C filed with the Commission on August 20, 2013).
3.2	Bylaws (incorporated herein by reference to the Registrant's Registration Statement on Form SB-2 filed with the Commission on January 29, 2008).
3.3	Amendment to Bylaws (incorporated herein by reference to the Registrant's Form 8-K filed with the Commission on May 29, 2013).
3.4	Certificate of Designation of Preferences and Rights of Series A Convertible Preferred Stock (incorporated herein by reference to the Registrant's current report on Form 8-K filed on October 31, 2013).
3.5	Certificate of Designation of Rights, Preferences and Privileges of Series B Preferred Stock of Lion Biotechnologies, Inc. (incorporated herein by reference to the Registrant's current report on Form 8-K filed on June 3, 2016).
10.1	Form of Securities Purchase Agreement, dated June 2, 2016, among Lion Biotechnologies, Inc. and the Investors thereunder (incorporated herein by reference to the Registrant's current report on Form 8-K filed on June 3, 2016).
10.2	Form of Registration Rights Agreement, dated June 2, 2016, by and among Lion Biotechnologies, Inc. and the Investors thereunder (incorporated herein by reference to the Registrant's current report on Form 8-K filed on June 3, 2016).
10.3	Amendment #2 Cooperative Research and Development Agreement # 02734, dated August 18, 2016, between the National Cancer Institute, and Registrant.*
5.1	Opinion of TroyGould PC.*
23.1	Consent of Weinberg & Company, P.A.*
23.3	Consent of TroyGould PC (included in Exhibit 5.1).
24.1	Power of Attorney (included on page II-3).

* Filed herewith

Exhibit 5.1

TroyGould PC
1801 Century Park East, 16th Floor
Los Angeles, California 90067

August 31, 2016

Lion Biotechnologies, Inc.
112 W. 34th Street, 18th Floor
New York, NY 10120

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to Lion Biotechnologies, Inc., a Nevada corporation (the "Company"), in connection with a Registration Statement on Form S-3, including a related prospectus (the “Registration Statement”), to be filed with the Securities and Exchange Commission (the "Commission") on or about the date of this letter, for the registration of up to 21,052,633 shares (the “Shares”) of common stock of the Company, par value $0.000041666 per share, which are being registered in connection with the proposed sale of the Shares by the selling stockholders identified therein. The Shares consist of (i) 9,684,000 currently outstanding shares of Common Stock, and (ii) 11,368,633 shares of Common Stock (the “Conversion Shares”) issuable upon conversion of the Company's outstanding shares of Series B Preferred Stock. This letter is furnished to you at your request and in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act of 1933, as amended (the “Securities Act”).

In connection with this letter, we have examined and relied upon originals or copies of such records, documents, certificates and other instruments as in our judgment are necessary or appropriate to enable us to render the opinions expressed below. We have also reviewed such matters of law as we considered necessary or appropriate as a basis for the opinions expressed below.

With your permission, we have made and relied upon the following assumptions, without any independent investigation or inquiry by us, and our opinions expressed below are subject to, and limited and qualified by the effect of, such assumptions: (1) all corporate records furnished to us by the Company are accurate and complete; (2) the Registration Statement to be filed by the Company with the Commission will be identical to the form of the document that we have reviewed; (3) all statements as to factual matters that are contained in the Registration Statement (including the exhibits to the Registration Statement) are accurate and complete; and (4) with respect to documents that we reviewed in connection with this letter, all documents submitted to us as originals are authentic; all documents submitted to us as certified, facsimile, or photostatic copies conform to the originals of such documents, and such original documents are authentic; the signatures on all documents are genuine; and all natural persons who have executed any of the documents had the legal capacity to do so.

The law covered by our opinions expressed below is limited to the general corporation law of the State of Nevada as set for in Chapter 78 of the Nevada Revised Statutes (the "NRS"), including applicable rules and regulations promulgated under the NRS and applicable reported judicial decisions interpreting the NRS. We neither express nor imply any opinion with respect to any other laws or the laws of any other jurisdiction.

We undertake no, and hereby disclaim any, obligation to advise you of any change in any matter set forth herein, whether based on a change in laws, a change in any fact relating to the Company, or any other circumstance. This letter is limited to the matters expressly stated herein, and no opinions are to be inferred or may be implied beyond the opinions expressly set forth below. Without limiting the generality of the foregoing, we neither express nor imply any opinion regarding the contents of the Registration Statement, other than as expressly stated below with respect to the Shares.

Based upon and subject to the foregoing, we are of the opinion that (i) the 9,684,000 shares of Common Stock outstanding on the date hereof that are being registered for resale are validly issued, fully paid and non-assessable, and (ii) the Conversion Shares, when issued upon conversion of the Series B Preferred Stock in accordance with the terms of the Series B Preferred Stock, will be validly issued, fully paid and non-assessable.

This letter is rendered to you solely in connection with the transactions contemplated by the Registration Statement and may not be relied upon for any other purpose. We consent to the filing with the Commission of this letter as Exhibit 5.1 to the Registration Statement and to the reference to our firm under the caption "Legal Matters" in the prospectus that forms part of the Registration Statement. In giving such consent, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ TroyGould PC

TROYGOULD PC

Exhibit 10.3

Amendment #2

Cooperative Research and Development Agreement # 02734

"Cooperative Research and Development Agreement for the Development and Evaluation of the NCI Proprietary Adoptive Cell Transfer Immunotherapy Using Tumor-Infiltrating Lymphocytes in Patients with Metastatic Melanoma, Bladder, Lung, Breast, and HPV-associated Cancers, Utilizing Lion Biotechnologies, Inc.'s Business Development Expertise in Adoptive Cell Transfer Immunotherapy**"**

The purpose of this amendment is to change certain terms of the above-referenced Cooperative Research and Development Agreement (CRADA). These changes are reflected below, and except for these changes and those of Amendments #1, all other provisions of the original CRADA remain in full force and effect. Two originals of this amendment are provided for execution; one is to remain with the National Cancer Institute and the other is to remain with the Collaborator.

1) Upon final signature, the term of the CRADA is extended for five (5) years from August 05, 2016 to August 05, 2021.

2) Title of the CRADA is modified to "Cooperative Research and Development Agreement for the Development and Evaluation of the NCI Proprietary Adoptive Cell Transfer Immunotherapy Using Unmodified Tumor-Infiltrating Lymphocytes in Patients with Metastatic Melanoma, Bladder, Lung, Breast, and HPV-associated Cancers, Utilizing Lion Biotechnologies, Inc.'s Business Development Expertise in Adoptive Cell Transfer Immunotherapy".

3) Chief Executive Officer of Lion Biotechnologies Inc. is changed from Dr. Elma Hawkins, to Dr. Maria Fardis, effective June 1st, 2016.

4) Address of Lion is changed to: 112 West 34 Street, 18th Floor, New York, NY 10120

5) Appendix A – Goals of the CRADA is amended to exclude modified or genetically altered TIL. The goals of the CRADA are limited to development of unmodified TIL as a stand-alone therapy or in combination with FDA licensed products and commercially available reagents routinely used for ACT therapy. Modified Appendix A is included as Addendum-1.

6) Appendix A-Goals of the CRADA is amended to allow Dr. Rosenberg to collaborate with third parties on projects designed at improving TIL that are outside the scope of this CRADA.

7) Appendix B- Staffing, Funding and Materials/Equipment Contributions of the Parties is amended to reflect Material contributions and payment options. Modified Appendix B is included as Addendum-2.

SIGNATURES BEGIN ON THE NEXT PAGE

Accepted and Agreed to:

For the National Cancer Institute:

/s/ JAMES DOROSHOW, M.D. 8/18/16

James Doroshow, M.D. **Date**

Deputy Director for Clinical and Translational Research, NCI

For the Collaborator:

/s/ MARIA FARDIS, PH.D. 8/18/16

Maria Fardis, Ph.D. **Date**
President and Chief Executive Officer
Lion Biotechnologies, Inc.

ADDENDUM-1 TO AMENDMENT -2

PUBLIC HEALTH SERVICE
COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT
FOR INTRAMURAL-PHS CLINICAL RESEARCH

APPENDIX A

RESEARCH PLAN

Title of CRADA

Cooperative Research and Development Agreement for the Development and Evaluation of the NCI Proprietary Adoptive Cell Transfer Immunotherapy Using Unmodified Tumor-Infiltrating Lymphocytes in Patients with Metastatic Melanoma, Bladder, Lung, Breast, and HPV-associated Cancers, Utilizing Lion Biotechnologies, Inc.'s Business Development Expertise in Adoptive Cell Transfer Immunotherapy

NCI Principal Investigator
Steven A. Rosenberg, M.D., Ph.D.
Chief, Surgery Branch
Center for Cancer Research (CCR)
National Cancer Institute (NCI)

Collaborator Principal Investigator
Maria Fardis, Ph.D., M.B.A.
Chief Executive Officer
Lion Biotechnologies, Inc.

Term of CRADA
Ten (10) years from the date of the final CRADA signature.

GOALS OF THIS CRADA

The principal goal of this CRADA is to develop and evaluate effective adoptive cell transfer-based immunotherapies (ACT) using unmodified Tumor-Infiltrating Lymphocytes (TIL), where the ACT/TIL therapy approach is proprietary to the NCI, for the treatment of patients with metastatic melanoma, bladder, lung, breast, and HPV (Human Papilloma Virus)-associated cancers, utilizing the business development expertise and resources of Lion Biotechnologies, Inc., Specifically this CRADA will (1) support the *in vitro* development of improved methods for the large scale generation and selection of unmodified TIL with anti-tumor reactivity from patients with metastatic melanoma, bladder, lung, breast, and HPV-associated cancers, based on ACT therapies developed by and proprietary to the NCI Surgery Branch, to be used for large scale production of TIL for the ACT treatment of patients with these cancers; (2) develop these approaches for large scale TIL generation that are in accord with Good Manufacturing Practice (GMP) procedures suitable for use in treating patients with metastatic melanoma, bladder, lung, breast, and HPV-associated cancers; and (3) develop clinical trials using these improved methods of large scale TIL generation as well as improved patient preparative regimens with the goal of commercializing the ACT/TIL therapy approach for treating patients with metastatic melanoma, bladder, lung, breast, and HPV-associated cancers. The scope of this CRADA, including any *in vitro* and *in vivo* testing conducted by Dr. Steven A. Rosenberg and members of the NCI Surgery Branch within the CCR is strictly limited to the development of unmodified TIL which have not been genetically altered as a single agent therapy or in combination with FDA licensed products, and commercially available reagents routinely used for ACT therapy, such as chemotherapeutic agents, pembrolizumab, nivolumab, ipilimumab, and aldesleukin [IL-2], in treating patients with metastatic melanoma, bladder, lung, breast, and HPV-associated cancers, utilizing Lion's expertise in the large scale production of adoptive cell transfer immunotherapies. The scope of this CRADA is limited to unmodified TIL as stand-alone therapy, and shall exclude the combination of TIL with other investigational agents, including, but not limited to, anti-cancer antibodies, as well as other investigational agents used in cancer treatment, compounds, small molecule inhibitors, T-cell activators, cytokines, experimental therapies or others. Genetically modified TIL, such as with various gene knockout, knockdown, or knock-in techniques, are specifically excluded from the scope of this CRADA. If Collaborator acquires proprietary gene editing technology, the Parties may discuss at that point whether CRADA will be amended to include such technology. Additional research or clinical activities involving current or prospective NCI Surgery Branch adoptive immunotherapy protocols, to which Lion is not a party, are outside the scope of this CRADA unless and until the Parties mutually agree to such studies which shall be added by written amendment to this CRADA. Dr. Rosenberg may engage in collaborations with third parties on projects designed to explore the improvement of TIL that are outside the scope of this CRADA. Such collaborations may involve the use of third party proprietary materials and technology and will be documented by NCI and any third party with a duly executed agreement. Collaborator acknowledges that this may occur and unless those projects are added to this CRADA by an amendment, the research to be conducted under these collaborations will not be included in this CRADA. NCI will be under no obligation to share any data generated from such third party collaborations with Collaborator.

Expertise of the Parties

Dr. Steven A. Rosenberg has extensive experience in the development and application of his proprietary adoptive cell-based therapies for patients with cancer. His laboratory has developed *in vitro* techniques for generating anti-tumor T cells obtained from patient tumors under conditions suitable for subsequent infusion. Dr. Rosenberg and his colleagues in the NCI Surgery Branch have extensive experience in the development of cell-based reagents and the conduct of clinical trials utilizing these cells in immunotherapeutic protocols.

Lion Biotechnologies, Inc. has assembled a team of senior level scientists and clinicians who have experience in the application of cell-based immunotherapies to help guide the commercial development of ACT therapy for the treatment of metastatic melanoma, bladder, lung, breast, and HPV-associated cancers, as specified in "Goals of this CRADA" ("Goals") based on the NCI Surgery Branch proprietary technologies for TIL preparation and administration of ACT to patients. Lion has contracted with GMP manufacturers to perform this work emphasizing the development and evaluation of improved techniques for TIL generation that meet GMP standards as well as to conduct clinical trials of ACT/TIL therapy designed to meet the standards of the FDA to achieve approval for the commercialization of this treatment approach. Thus the combination of the scientific and clinical expertise of the NCI Surgery Branch with the scientific and clinical expertise of Lion as well as the availability of Lion-contracted GMP production facilities to make ACT/TIL product for Lion-sponsored licensing trials represents an ideal opportunity that can lead to the commercialization of the ACT/TIL treatment approach for patients with those cancers as specified in "Goals", making these treatments more widely available to patients in need.

The NCI Surgery Branch and Lion thus have complementary expertise that can develop technologies and clinical treatment approaches that have the potential to improve cell transfer therapy and make it more widely available to patients through commercialization by Lion.

EXPERIMENTAL PLAN

The experimental details that follow are approximate and may be changed upon mutual agreement of the NCI and Collaborator. Any change in the scope of this CRADA will be by mutual consent and written Amendment to the CRADA.

I. Develop improved methods for the generation and selection of unmodified TIL with anti-tumor reactivity from patients with metastatic melanoma, bladder, lung, breast, and HPV-associated cancers, as specified in "Goals", based on ACT proprietary to and developed by the NCI Surgery Branch, for use in the large-scale production of unmodified TIL for this ACT treatment of these cancers

Simplified and better methods for TIL selection and growth are needed to supplement current NCI Surgery Branch efforts in order to expand ACT/TIL therapy to a greater numbers of patients with those cancers as specified in "Goals". Studies of improved methods for TIL selection will be investigated by the NCI Surgery Branch and Lion. This will include use of *in vitro* assays of specificity that are based on specific blocking of Class I MHC (Major Histocompatibility Complex) molecules that can provide evidence for the specific recognition of autologous tumor and use of sensitive assays of the upregulation of molecules such as 4-1-BB, PD-1, and/or others on the lymphocyte cell surface. Such studies in the NCI Surgery Branch may also include the separation of phenotypically different lymphocyte subsets present in TIL such as central memory, effector memory and terminally differentiated effector cells. NCI Surgery Branch studies in mice have shown that lymphocyte subsets such as central memory cells can be more effective in the adoptive immunotherapy of experimental tumors and this needs to be studied in humans with those cancers as specified in "Goals". Other studies may include identifying lymphocytes from an inflamed vs. non-inflamed tumor microenvironment, as inflamed tumors tend to respond better to cancer immunotherapies.

In addition, NCI Surgery Branch may send fresh melanoma, bladder, lung, breast, and HPV-associated cancer specimens from NCI protocol 03-C-0277 entitled "Cell Harvest and Preparation for Surgery Branch Adoptive Cell Therapy Protocols" to Lion or its agents to develop techniques for growing TIL and for performing assays involving criteria which are designed to improve TIL selection. Assays will be performed on the growing TIL to evaluate their recognition of autologous tumor cells assessed by gamma interferon release in overnight co-culture with tumor and to evaluate the phenotypic expression of cell surface markers on TIL such as CD62L, CD45RO, CD45RA and CD127. Such studies would form the basis for TIL selection and generation for use in the large scale production of TIL for the treatment of patients with those cancers as specified in "Goals". For the avoidance of doubt, TIL shall mean genetically unmodified TIL.

II. Develop approaches to large scale unmodified TIL generation that are in accord with Good Manufacturing Practice (GMP) procedures suitable for their use in treating patients with metastatic melanoma, bladder, lung, breast, and HPV-associated cancers, as specified in "Goals"

The selection and growth of autologous TIL from patients with those cancers as specified in "Goals" is a vital part of the successful use of this approach. Prior NCI Surgery Branch methods for TIL growth involved extensive *in vitro* testing using multiple cell lines and fresh tissue samples. Under this CRADA, studies will be conducted to improve methods for the generation of the large numbers of unmodified TIL necessary for patient treatment. These studies will explore the use of commercially available reagents including but not limited to cytokines, such as IL-7, IL-15, IL-21, as well as agonist/antagonist antibodies, that can promote TIL growth. The NCI Surgery Branch has begun some of these studies, but extensive additional studies are required to optimize cell growth including the determination of the best concentrations of reagents, and timing of media change. These studies will be conducted by the NCI Surgery Branch with advice, input, and expertise provided by Lion.

In addition, the NCI Surgery Branch may send tumor samples from those cancers as specified in "Goals" which were collected from NCI protocol 03-C-0277 to Lion or its agents for studies including scale-out for the methods of expansion of individualized lymphocyte treatments, assays for product and in-process performance, and harmonization assays for centralized process development and determination of TIL product consistency.

Additionally, biological reagents and materials may be sent to Lion or its agents for the development of qualifying assays and process development related to scale-out of the unmodified TIL expansion process. Techniques thus described will need to be adapted to meet the GMP requirements of the Food and Drug Administration for infusion into patients. This may require modification of the procedures developed in the NCI Surgery Branch. Lion and the NCI Surgery Branch will work together to develop Standard Operating Procedures (SOP) for large scale TIL growth, selection and testing that meet the approval of the FDA. Joint meetings with the FDA will be required to define the exact format and criteria need to meet FDA approval.

III. Develop clinical trials using these improved methods of large-scale, unmodified TIL generation as well as improved patient preparative regimens to treat patients with metastatic melanoma, bladder, lung, breast, and HPV-associated cancers, as specified in "Goals"

Clinical trials will be designed and implemented to evaluate the clinical effectiveness of ACT/TIL therapy resulting from large scale techniques in patients with those cancers as specified in "Goals", based on the proprietary NCI Surgery Branch technology and approaches developed in the first two parts of the Experimental Plan. Lion and the NCI Surgery Branch will work together to develop multi-institutional clinical trials evaluating the clinical effectiveness of the administration of autologous unmodified TIL generated using Lion technology to patients with those cancers as specified in "Goals" that can potentially be used as licensing trials for FDA approval. The NCI Surgery Branch does not have a suitable GMP facility that will meet FDA standards for the conduct of such a trial. Exploratory pilot trials may be necessary prior to beginning a licensing trial and these may be conducted in the Surgery Branch alone or in conjunction with other multicenter sites associated with Lion. The development and conduct of licensing trials will require the GMP expertise of Lion and the extensive experience of the NCI Surgery Branch working together. TIL for these licensing trials to be sponsored by Lion will be produced on a large scale at one or more central GMP facilities contracted by Lion. An IND with the FDA will be filed by Lion which will serve as the Coordinating Center for such trials. The goal of such trials will be to generate data to support the approval by the FDA of this ACT/TIL therapy approach. *In vitro* testing of patient samples from such trials will evaluate the activity and persistence level of the transferred cells in the circulation of treated patients and will be conducted by the NCI Surgery Branch both for any pilot trials that are performed as well as for the large multi-institutional trials that are planned.

Clinical trials may include but are not limited to the evaluation of the addition of an FDA-approved anti-PD-1 checkpoint antibody to unmodified TIL therapy. Exploratory pilot trials may include but are not limited to the evaluation of: 1) TIL cryopreserved prior to shipping from a central facility to patients and 2) TIL selected for upregulated expression of PD-1 on the cell surface.

DESCRIPTION OF THE CONTRIBUTIONS AND RESPONSIBILITIES OF THE PARTIES

Surgery Branch, NCI

- Develop and test new improved and simplified *in vitro* methods for the selection and growth of unmodified TIL with anti-tumor activity for large scale preparations that can be used in clinical cell transfer studies. As described in the Experimental Plan above, this will include evaluation of new growth techniques culture vessels, and tests.

- Perform *in vitro* studies of the immunologic parameters surrounding the new cell transfer clinical protocol(s) by analyzing the phenotypic and functional properties of the transferred cells and their persistence in the patient following adoptive transfer in all clinical trials conducted under this CRADA, as outlined in Section III above.

- Support requests from Lion to provide data from studies conducted at NCI in support of regulatory submissions. Assist Lion by reviewing the data together and addressing possible queries to the data to assure readiness of the data for health authority submissions. Allow the data to be monitored as needed in support of health authority submissions.

Lion

- Develop, implement, and evaluate GMP procedures for the large-scale production of unmodified TIL suitable for infusion into patients with metastatic melanoma, bladder, lung, breast, and HPV-associated cancers as specified in “Goals”.

- Conduct studies including scale-out for the methods of expansion of individualized lymphocyte treatments, assays for product and in-process performance, and harmonization assays for centralized process development and determination of TIL product consistency. Additional studies may be conducted for the development of qualifying assays and process development related to scale-out of the TIL expansion process.

- Consult with the FDA to determine the appropriate clinical trial design necessary to secure approval for the commercial development of unmodified TIL therapy for patients with those cancers as specified in "Goals" and sponsor the IND for these new clinical protocols. Serve as the coordinating center for the multicenter licensing clinical trials.

- Supply TIL in sufficient quantities to complete the planned clinical trials sponsored by Lion (including the licensing trial) needed for FDA approval of unmodified ACT/TIL therapy

Surgery Branch, NCI and Lion

- Develop SOP for large scale TIL growth, selection and testing to support the FDA approval of unmodified ACT/TIL therapy. Attend joint meetings with the FDA to define the exact format and criteria needed in the clinical trial(s) to obtain FDA approval.

  Develop, conduct and evaluate multi-institutional clinical trials (to include the NCI Surgery Branch as a clinical trial site) for patients with metastatic melanoma, bladder, lung, breast, and HPV-associated cancers (as specified in "Goals") treated with unmodified TIL that can be used as licensing trials required for FDA approval and subsequent commercialization of unmodified ACT/TIL therapy.

- Conduct assays to be used in the selection of appropriate cells (based on both functional and phenotypic criteria) to optimize the effectiveness of the adoptive transfer.

- Exchange information and expertise to further the successful development of unmodified TIL therapy for patients with those cancers as specified in "Goals". For the avoidance of doubt, exchanging information includes but is not limited to the transfer of preclinical and clinical data. In addition, both Parties shall meet or conduct conference calls on a regular basis (no less than once a month) to exchange information and provide updates on the progress of the research and clinical development as described in the Experimental Plan.

Related NCI and Collaborator Agreements: None

Related Intellectual Property and Business/Scientific Expertise of the Parties

NCI Surgery Branch

1) PCT/US03/27873 entitled "Immunotherapy with *In Vitro*-Selected Antigen-specific Lymphocytes After Nonmyeloablative Lymphodepleting Chemotherapy," filed 9/5/03. Inventors: Mark E. Dudley, Steven A. Rosenberg, John R. Wunderlich. This is inclusive of all U.S. continuing applications and divisionals, and foreign applications.

2) USSN 12/869,390 entitled “Adoptive Cell Therapy with Young T Cells”, filed 8/26/10. Inventors: Mark E. Dudley and Steven A. Rosenberg. This is inclusive of all U.S. continuing applications and divisionals.

3) PCT/US12/02974 entitled “Methods of Growing Tumor Infiltrating Lymphocytes in Gas-Permeable Containers”, filed 3/20/12. Inventors: Steven A. Rosenberg, Mark E. Dudley, et al. This is inclusive of all U.S. continuing applications, divisionals, and foreign applications.

4) PCT/US14/046478 entitled “Methods of Preparing Anti-Human Papillomavirus Antigen T Cells”, filed 7/14/2014. Inventors: Christian S. Hinrichs and Steven A. Rosenberg. This is inclusive of all U.S. continuing applications and divisionals.

Lion Biotechnologies, Inc.

Lion has the following active licenses for NCI-owned intellectual property: L-107-2015/1, L-108-2015/0,

Lion is a publicly traded biotechnology company developing therapies for the treatment of cancer. Lion’s lead therapeutic candidate will be an autologous cell therapy product using TIL for the treatment of metastatic melanoma. Lion may also develop TIL products for bladder, lung, breast, and HPV-associated cancers as specified in “Goals” to be developed under this CRADA.

ADDENDUM-2 TO AMENDMENT -2

PUBLIC HEALTH SERVICE
COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT
FOR INTRAMURAL-PHS CLINICAL RESEARCH

APPENDIX B

STAFFING, FUNDING AND MATERIALS/EQUIPMENT CONTRIBUTIONS
OF THE PARTIES

Staffing Contributions:

IC will provide scientific staff and other support necessary to conduct the research and other activities described in the Research Plan. IC's scientific staff will include IC's CRADA Principal Investigator and technical staff.

IC estimates that 3-5 person-years of effort per year will be required to complete the CRADA research.

Collaborator will provide scientific staff and other support necessary to conduct the research and other activities described in the Research Plan. Collaborator's scientific staff will include Collaborator's Principal Investigator and technical staff.

Collaborator estimates that 3-5 person-years of effort per year will be required to complete the CRADA research.

Funding Contributions:

Collaborator agrees to provide funds in the amount of $2,000,000.00 per year of the CRADA for IC to use to acquire technical, statistical, and administrative support for the research activities, as well as to pay for supplies and travel expenses. Collaborator will provide funds in the amount of $500,000.00 on a quarterly basis. Each subsequent installment will be due within thirty (30) days of each quarterly anniversary of the CRADA Effective Date. Collaborator agrees that IC can allocate the funding between the various categories in support of the CRADA research as IC's CRADA PI sees fit. For avoidance of doubt, the funding will only be used to support the research and development outlined in the CRADA.

CRADA PAYMENTS:

Collaborator has three options for making CRADA payments. See CRADA Payment Options at http://ttc.nci.nih.gov/forms/crada.php for specific information on making payments using each option.

Option 1: Collaborator sends checks to the NCI.
Option 2: Collaborator makes payments via wire transfer (Fedwire).
Option 3: Collaborator makes ACH/EFT payments using www.pay.gov.

If Collaborator chooses to pay by check, the check is payable to the National Cancer Institute and will reference the CRADA number 02734 and title "CRADA for the Development and Evaluation of the NCI Proprietary Adoptive Cell Transfer Immunotherapy Using Unmodifed Tumor-Infiltrating Lymphocytes in Patients with Metastatic Melanoma, Bladder, Lung, Breast and HPV-associated Cancers Utilizing Lion Biotechnologies, Inc.'s Business Development Expertise in Adoptive Cell Transfer Immunotherapy" on each check, and will send them via trackable mail or courier to:

CRADA Funds Coordinator
Technology Transfer Center, NCI
9609 Medical Center Drive, Rm 1-E530, Rockville, MD 20850-9702

CRADA Travel Payments:
Travel arrangements for all Government staff will be made in accordance with the Federal Travel Rules and Regulations, whether arranged by IC and funded using either appropriated funds or CRADA funds, or arranged and funded directly by Collaborator.

Materials/Equipment Contributions:

IC will provide the following IC Materials for use under this CRADA:

Test Article:	None
IC Materials:	Fresh melanoma, bladder cancer, lung cancer, triple-negative breast cancer, and HPV-associated cancer tumor specimens collected under NCI protocol 03-C-0277 entitled "Cell Harvest and Preparation for Surgery Branch Adoptive Cell Therapy Protocols"
Capital Equipment:	None

If either Party decides to provide additional Materials for use under this CRADA, those materials will be transferred under a cover letter that identifies them and states that they are being provided under the terms of the CRADA.

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in this Amendment No. 2 to the Registration Statement on Form S-1 on Form S-3 (File No. 333-212373) of our reports dated March 11, 2016, with respect to the financial statements of Lion Biotechnologies, Inc. and the effectiveness of internal control over financial reporting of Lion Biotechnologies, Inc. which appear in 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. We also consent to the reference to our firm under the heading "Experts".

/s/ Weinberg & Company, P.A.
Los Angeles, California
August 31, 2016