

CLEVELAND BIOLABS INC
Form S-3
February 27, 2015

AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION ON FEBRUARY 27, 2015

REGISTRATION NO. 333-_____

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

Cleveland BioLabs, Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

20-0077155

I.R.S. Employer Identification Number

73 High Street, Buffalo, NY 14203

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(716) 849-6810

(Address, including zip code, and telephone number, including area code of registrant's principal executive offices)

Yakov Kogan

Chief Executive Officer

Cleveland BioLabs, Inc.

73 High Street

Buffalo, New York 14203

(716) 849-6810

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

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New York, New York 10006

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Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement.

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

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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:

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 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

Non-accelerated filer

Smaller reporting company

CALCULATION OF REGISTRATION FEE

| Title of Class of Securities to be Registered | Amount To be Registered | Proposed Maximum Aggregate Price Per Share (1) | Proposed Maximum Aggregate Offering Price | Amount of Registration Fee |
|---|----------------------------|--|---|----------------------------------|
| Common Stock, \$0.005 par value per share (2) | 264,318 shares | \$ 3.555 | \$939,650 | \$ 109.19 |
| Common Stock, \$0.005 par value per share (3) | 239,135 shares | \$ 3.555 | \$850,125 | \$ 98.78 |
| Common Stock, par value \$0.005 per share (4) | 1,568,027 shares | \$ 3.555 | 5,574,336 | 647.74 |
| Total number of securities to be registered | 2,071,480 shares | | \$7,364,111 | \$ 855.71 |

(1) Estimated solely for purposes of calculating the registration fee pursuant to Rule 457(c) under the Securities Act of 1933, as amended, using the average of the high and low prices as reported on the NASDAQ Capital Market on February 20, 2015.

(2) Represents outstanding shares of common stock

(3) Represents shares issuable upon conversion of Preferred Stock.

(4) Represents shares issuable upon exercise of warrants.

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 this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. The selling stockholders may not sell these securities under this prospectus until the registration statement of which it is a part and filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS, SUBJECT TO COMPLETION, DATED FEBRUARY 27, 2015

CLEVELAND BIOLABS, INC.

2,071,480 Shares of Common Stock

This prospectus relates to the public offering of up to 2,071,480 shares of common stock of Cleveland BioLabs, Inc., including 264,318 outstanding shares, 239,135 shares issuable upon conversion of shares of Preferred Stock, and 1,568,027 shares issuable upon exercise of warrants.

The selling stockholders may sell common stock from time to time in the principal market on which the stock is traded at the prevailing market price or in negotiated transactions.

We will not receive any of the proceeds from the sale of common stock by the selling stockholders. We will pay the expenses of registering these shares.

Investing in our common stock involves a high degree of risk. You should consider carefully the risk factors beginning on page 7 of this prospectus and as described in our most recent Annual Report on Form 10-K filed with the SEC on February 27, 2015 before purchasing any of the shares offered by this prospectus.

Our common stock is listed on the NASDAQ Capital Market under the symbol "CBLI". The last reported sale price of our common stock on the NASDAQ Capital Market on February 26, 2015, was \$3.29 per share.

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required. You should read the entire prospectus and any amendments or supplements carefully before you make your investment decision.

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

The date of this prospectus is _____, 2015.

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You may only rely on the information contained in this prospectus or that we have referred you to. We have not authorized anyone to provide you with different information. 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. 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 by reference to this prospectus is correct as of any time after its date.

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WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, along with other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room.

This prospectus is part of a registration statement on Form S-3 that we filed with the SEC to register the securities offered hereby under the Securities Act of 1933, as amended. This prospectus does not contain all of the information included in the registration statement, including certain exhibits and schedules. You may obtain the registration statement and exhibits to the registration statement from the SEC at the address listed above or from the SEC's internet site.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information that we incorporate by reference is considered to be part of this prospectus. Because we are incorporating by reference our future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some or all of the information included or incorporated in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the documents listed below and any future filings we will make with the SEC under Sections 13(a), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), (i) after the date of the initial registration statement and prior to effectiveness of the registration statement, and (ii) after the date of this prospectus, until the selling stockholders sells all of our securities registered under this prospectus:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2014, filed with the SEC on February 27, 2015;

our Current Reports on Form 8-K filed with the SEC on January 13, 2015, January 27, 2015, January 28, 2015, February 4, 2015, February 9, 2015, and February 20, 2015;

our Preliminary Proxy Statement on Schedule 14A filed with the SEC on February 24, 2015; and

the description of our common stock, which is contained in the registration statement on Form 8-A filed with the SEC on July 20, 2006 (File No. 001-32954), including any amendments or reports filed for the purpose of updating that description.

Notwithstanding the foregoing, information furnished under Items 2.02 and 7.01 of any Current Report on Form 8-K, including the related exhibits, is not incorporated by reference in this prospectus.

The information about us contained in this prospectus should be read together with the information in the documents incorporated by reference. You may request a copy of any or all of these filings, at no cost, by writing or telephoning us at:

Cleveland BioLabs, Inc.

73 High Street

Buffalo, New York 14203

Attention: Corporate Secretary

Telephone: (716) 849-6810

SUMMARY

This summary highlights information contained elsewhere in this prospectus. You should read the entire prospectus carefully, including the section entitled “Risk Factors” before deciding to invest in our common stock. In this prospectus, unless otherwise stated or the context otherwise requires, the terms “Cleveland BioLabs” and “CBLI” refer to Cleveland BioLabs, Inc. and its wholly owned subsidiary BioLab 612, LLC, but not its consolidated subsidiary Panacela Labs, Inc. or its unconsolidated joint venture, Incuron, LLC. The “Company,” “we,” “us” and “our” refer to Cleveland BioLabs, Inc. together with its consolidated subsidiaries BioLabs 612, LLC and Panacela Labs, Inc. and unconsolidated joint venture, Incuron, LLC. Each of the trade names or service marks appearing or incorporated by reference in this prospectus are the property of their respective owners.

The Company

We are an innovative biopharmaceutical company seeking to develop first-in-class pharmaceuticals designed to address diseases with significant unmet medical need. We combine our proven scientific expertise and our depth of knowledge about our products’ mechanisms of action into a passion for developing drugs to save lives. Our programs are focused on the implementation of novel pharmacological approaches to control cell death. Our proprietary drug candidates act via unique mechanisms that are designed to kill cancer and protect healthy cells. We conduct business in the United States and the Russian Federation. CBLI and our joint ventures, Incuron, LLC, or Incuron, and Panacela Labs, Inc., or Panacela, each have worldwide development and commercialization rights to product candidates in development, subject to certain financial obligations to our current licensors. CBLI’s most advanced product candidate is entolimod, which we are developing as a radiation countermeasure and an immunotherapy for oncology and other indications. Our primary product development programs and their respective development stages are illustrated below:

CBLI

PRODUCT

| | | | |
|-----------|-------------|------------------------------|---|
| DISCOVERY | PRECLINICAL | PIVOTAL ANIMAL STUDIES | HUMAN SAFETY / DOSE CONVERSION |
|-----------|-------------|------------------------------|---|

Indication

ENTOLIMOD

Acute Radiation Syndrome

PRODUCT

Indication DISCOVERY PRECLINICAL PHASE I PHASE II PHASE III

ENTOLIMOD-Oncology

Advanced Solid Tumors
CBLB612

HSC Mobilization
**HSC means hematopoietic stem cell*

Incuron

PRODUCT

Indication DISCOVERY PRECLINICAL PHASE I PHASE II PHASE III
CBL0137

Advanced Solid Tumors

Panacela

PRODUCT

DISCOVERY PRECLINICAL PHASE I PHASE II PHASE III
Indication
MOBILAN

Targeted Cancer Therapy

Entolimod is a Toll-like receptor 5, or TLR5, agonist, which we are developing as a radiation countermeasure for prevention of death from Acute Radiation Syndrome, or ARS, and as an oncology drug. We believe that entolimod is the most efficacious radiation countermeasure currently in development. Following is a summary of the clinical development of entolimod to date and regulatory status:

Entolimod is being developed under the U.S. Food & Drug Administration's, or FDA's, Animal Efficacy Rule, or the Animal Rule, for the indication of reducing the risk of death following exposure to potentially lethal irradiation occurring as a result of a radiation disaster (see "Government Regulation – Animal Rule"). If approved, we anticipate that entolimod will be administered within 25 hours following radiation exposure. We have completed two dose escalation clinical studies designed to evaluate the safety, pharmacokinetics and pharmacodynamics in a total of 150 healthy volunteers. Administration of entolimod was not associated with irreversible harm at any of the doses evaluated in these two studies. We have completed a Good Laboratory Practices, or GLP, randomized, blinded, placebo-controlled, pivotal study designed to evaluate the dose- dependent effect of entolimod on survival and biomarker induction in 179 non-human primates exposed to 7.2 Gy total body irradiation when entolimod or placebo were administered at 25 hours after radiation exposure. We have completed a GLP, randomized, open-label, placebo-controlled, pivotal study designed to evaluate the dose- dependent effect of entolimod on biomarker induction in 160 non-irradiated non-human primates. We met with the FDA in July 2014 to present our human dose-conversion and to discuss our intent to submit a pre-Emergency Use Authorization, or pre-EUA. The FDA confirmed that our existing efficacy and safety data and animal-to- human dose conversion are sufficient to proceed with a pre-EUA submission and agreed to accept a pre-EUA submission for review. We are currently preparing the pre-EUA dossier, which we anticipate filing in the first half of 2015. If the FDA authorizes the application, then Federal agencies are free to procure drug product to stockpile and distribute in the event of an emergency, i.e. prior to the drug being formally approved by FDA under a Biologics License Application, or BLA.

In January 2015, we announced that we had received notice that our proposal application to support further development of entolimod as a medical radiation countermeasure was recommended for funding subject to negotiations by the Department of Defense, or DoD, office of Congressionally Directed Medical Research Programs, or CDMRP. The proposal application aims to conduct several pivotal animal efficacy studies required by the FDA for submission of a BLA. The Company's receipt of this award is subject to successful negotiations and availability of funds.

Additionally, we completed enrollment in a Phase 1 open-label, dose-escalation trial of entolimod in patients with advanced cancer in the United States and began dosing in a small expansion study in the Russian Federation, which is enrolling additional patients at the highest doses achieved in the US study. Both studies include evaluation of immune cell response to administrations of entolimod. Preliminary evaluations of the completed study in the United States indicate that the tolerability profile in patients with advanced cancer was similar to that observed in two previously conducted studies in 150 healthy volunteers. Initial assessments of immunological response were consistent with TLR5 activation. Early analyses indicate that stable disease was observed in several patients with heavily pretreated cancers.

CBLB612 is a proprietary compound based upon a natural activator of another tissue-specific component of the innate immune system, the TLR2/TLR6 heterodimeric receptor. CBLB612 is a pharmacologically optimized synthetic molecule that structurally mimics naturally occurring lipopeptides of Mycoplasma (a genus of parasitic bacteria) and activates NF- κ B pro-survival and immunoregulatory signaling pathways via specific binding to TLR2 on a subset of body tissues and cell types that express this receptor. Preclinical studies have shown that the efficacy of CBLB612 exceeds that of granulocyte colony-stimulating factor, or G-CSF (Amgen's Neupogen®), the market-leading drug used for stimulation of white blood cell regeneration. CBLB612's hematopoietic stem cell, or HSC, stimulatory activity outweighed that of G-CSF when the drugs were administered either as monotherapies, in either mice or non-human primates, or in combination with Plerixafor (Sanofi's Mozobil®, a chemokine receptor antagonist approved by the FDA as an HSC mobilizer). However, the highest degree of HSC mobilization was observed when CBLB612 was added to that combination. The strong synergistic effect of this triple drug combination provides further support for development of CBLB612 as a valuable stem cell mobilizing agent. In October 2014, we initiated a Phase 1, single-center, blind, placebo-controlled, single ascending dose study in the Russian Federation to evaluate the safety and tolerability of CBLB612 in healthy volunteers and measure response of various HP stem and progenitor cell types in order to gain a preliminary estimate of the drug's HSC stimulatory efficacy under a 139 million ruble matching funds development contract that we received in July 2012 from MPT (see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations"). We licensed CBLB612 to Zhejiang Hisun Pharmaceutical Co., Ltd. for the territories of China, Taiwan, Hong Kong and Macau. We have rest-of-world development and commercialization rights to CBLB612.

CBL0137 is the lead product candidate of our unconsolidated joint venture Incuron. CBL0137 is a small molecule with a multi-targeted mechanism of action that may be broadly useful for the treatment of many different types of cancer. CBL0137 may offer greater efficacy and substantially lower risk for the development of drug resistance than conventional chemotherapeutic agents. CBL0137 inhibits Nuclear Factor kappa-B, or NF- κ B, Heat Shock Factor Protein-1, or HSF-1, and Hypoxia-inducible factor 1-alpha, or HIF1 alpha; these are transcription factors that are important for the viability of many types of tumors. The drug also activates tumor suppressor protein p53 by modulating intracellular localization and activity of chromatin remodeling complex Facilitates Chromatin Transcription, or FACT. CBL0137 has been shown to be efficacious in pre-clinical models of colon, lung, breast, renal, pancreatic, head and neck and prostate cancers; melanoma; glioblastoma; and neuroblastoma. It has also been shown to be efficacious in pre-clinical models of hematological cancers, including lymphoma, leukemia and multiple myeloma.

In the Russian Federation, Incuron is currently enrolling patients with advanced, resistant solid tumors to a Phase 1, multi-center, single-agent, dose-escalation study evaluating the oral administration of CBL0137. In the United States, Incuron is also currently enrolling patients with advanced resistant solid tumors to a Phase 1, multi-center, single-agent, dose-escalation study evaluating the intravenous administration of CBL0137. These studies are designed to investigate the safety, pharmacokinetics, pharmacodynamics, and antitumor activity of CBL0137. Incuron is conducting these parallel evaluations of oral and intravenous routes of administration and continuous low-dose versus interrupted high-dose schedules to reduce the company's developmental risk by fully characterizing the clinical pharmacology of CBL0137. The design of a new Phase 1 dose-escalation and expansion study of CBL0137 in hematological malignancies was reviewed with the FDA in December 2014. Incuron is planning to initiate a multicenter study of CBL0137 in patients with hematological malignancies in 2015. This clinical trial is intended to assess the safety, pharmacology, and anticancer activity of CBL0137 in several types of hematological cancers.

In January 2015, updates on clinical progress with Curaxin CBL0137 were announced. A formal interim analysis of the 19 patients enrolled in the first six cohorts of the ongoing oral administration study indicated that the study medication was well tolerated at all investigated dose levels. The observation of drug exposure in plasma documented high oral bioavailability (typically estimated to be $\geq 50\%$). To date, no dose-limiting toxicities have been observed with either oral or intravenous administration through the highest CBL0137 dose levels tested. Heavily pretreated patients with advanced cancers of the esophagus, colon, breast, cervix, and prostate have had stable disease for periods ranging from 4 to 6 months. Peripheral blood mononuclear cells, or PBMCs, from evaluable blood samples have shown pharmacodynamic effects consistent with the expected mechanism of action of CBL0137.

Incuron holds worldwide development and commercialization rights to CBL0137. As of December 31, 2014, BioProcess Capital Ventures, or BCV, owned 53.04% of Incuron and we owned 46.96% and as more fully described in Note 5 to the consolidated financial statements, we deconsolidated Incuron on November 25, 2014 as we no longer maintained a controlling equity interest, and commenced accounting for our investment in Incuron using the equity method.

Mobilan is the lead product candidate of our consolidated joint venture Panacela. Mobilan is a nanoparticle-formulated recombinant non-replicating adenovirus that directs expression of TLR5 and its agonistic ligand, flagellin. In pre-clinical studies, delivery of Mobilan to tumor cells results in constitutive autocrine TLR5 signaling and strong activation of the innate immune system with subsequent development of adaptive anti-tumor immune responses. Mobilan is in the pre-clinical stage of development as a universal anti-cancer therapy. In November 2014, Panacela filed an IND in the Russian Federation under a 149 million ruble matching funds development contract that it received in October 2013 from MPT (see Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations”). Panacela holds worldwide development and commercialization rights to Mobilan. As of December 31, 2014, we owned 57.78% of Panacela.

Our Partners

In December 2009, we entered into our Incuron joint venture with BioProcess Capital Partners, or BCP, to develop Curaxin compounds for treatment of oncological diseases. According to the terms of the agreement, we transferred rights in the Curaxin molecules to a new joint venture company, Incuron, in which BCP agreed to cause their affiliated fund, BCV, to contribute an aggregate of 549,497,000 Russian rubles (approximately \$16.9 million) to support development of the compounds. As of September 30, 2014, Incuron had received all committed funding. On November 25, 2014, we transferred 3.05% of the Company’s participation interest in Incuron to BCV. The transfer of 3.05% of our participation interest was made pursuant to the Participation Agreement dated December 9, 2009, as amended by the First and Third Amendments to Participation Agreement dated April 13, 2010 and June 17, 2014, respectively, that governs the joint ownership of Incuron by the Company and BCV. As described in the Form 8-K filed by the Company on December 2, 2014, as a result of the transfer of 3.05% of our participation interests to BCV, the Company’s participation interest in Incuron decreased to 46.96%, BCV’s participation interest increased to 53.04%.

In October 2011, we entered into our Panacela joint venture with Rusnano to carry out a complete cycle of development and commercialization in the Russian Federation for the treatment of oncological, infectious or other diseases. We invested \$3.0 million in Panacela preferred shares and warrants, and, together with certain third-party owners, assigned and/or provided exclusive licenses, as applicable, to Panacela to provide Panacela with worldwide development and commercialization rights to five preclinical product candidates in exchange for Panacela common shares. Rusnano invested \$9.0 million in Panacela preferred shares and warrants. In 2013, Rusnano loaned Panacela \$1.5 million through a convertible term loan, or the Panacela Loan, and revised their original investment agreement to remove the predetermined development milestones and timelines for further investment and provide that Rusnano may invest an additional \$15.5 million at their option. As of December 31, 2014, we had an ownership stake of 57.78% in Panacela.

Additionally, we leverage close development relationships with Roswell Park Cancer Institute and The Cleveland Clinic. Together, our team of legal entities, financial partners and other collaborators engage in the collective development efforts necessary to advance all of our product candidates towards marketing approval and commercialization.

Corporate Information

We were incorporated in Delaware on June 5, 2003. We conduct operations through several subsidiaries, including our wholly-owned subsidiary, BioLab 612, LLC, our consolidated joint venture Panacela Labs, Inc. and our unconsolidated joint venture, Incuron, LLC.

Our principal executive offices are located at 73 High Street, Buffalo, New York 14203. Our telephone number is (716) 849-6810. Our website address is www.cbiolabs.com. We have included our website address as an inactive textual reference only. The information contained on, or that can be accessed through, our website is not a part of this prospectus.

Recent Developments

On February 4, 2015, we entered into a Securities Purchase Agreement (the "Purchase Agreement") with certain institutional investors providing for the issuance and sale by the Company of 572,205 shares (the "Shares") of the Company's common stock at an offering price of \$3.00 per share (the "Share Offering") and Series B pre-funded warrants to purchase an aggregate of 594,688 shares of common stock (the "Pre-Funded Warrants,") (the "Pre-Funded Warrants Offering"). The Shares and the Pre-Funded Warrants were offered by the Company pursuant to an effective shelf registration statement on Form S-3, which was initially filed with the Securities and Exchange Commission on

December 10, 2013 and was declared effective on January 10, 2014 (File No. 333-192755).

In a concurrent private placement (the “Private Placement Transaction” and, together with the Share Offering and the Pre-Funded Warrants Offering, the “Offerings”), we sold to the purchasers of our Shares and Pre-Funded Warrants shares of our Series A Convertible Preferred Stock (the “Preferred Stock”) convertible into 239,135 shares of our common stock. Gross proceeds from the Offerings amounted to approximately \$4.2 million before deducting placement agent fees and expenses. In addition, we issued a Series A warrant (the “Series A Warrants” and, together with the Shares, the Pre-Funded Warrants and the Preferred Stock, the “Securities”) to purchase one share of our common stock for each share of common stock purchased or pre-funded in the Offerings and each share of Series A Convertible Preferred Stock purchased in the concurrent private placement. The Series A Warrants cover, in the aggregate, 1,406,028 shares of common stock and become exercisable six months following the date of issuance at an exercise price of \$3.64 and expire six years from the date they become exercisable.

Pursuant to the terms of the Placement Agency Agreement between the Company and Ladenburg Thalmann & Co. Inc. (“Ladenburg Thalmann”) dated February 4, 2015, Ladenburg Thalmann had no obligation to buy any of the Securities or to arrange for the purchase or sale of any specific number or dollar amount of Securities. The Company agreed to pay Ladenburg Thalmann a fee equal to 8% on aggregate gross proceeds in this offering, excluding the proceeds, if any, from the exercise of the Series A Warrants. The Offerings closed on February 6, 2015 (the “Closing”).

On February 6, 2015, the Company amended the terms of the Securities as described below.

Pursuant to the terms of the Purchase Agreement, the Company agreed that during the 75-day period following execution of the Purchase Agreement, the Company will not issue (or enter into any agreement to issue) any shares of common stock or common stock equivalents, subject to certain exceptions including securities issuable pursuant to the Purchase Agreement or pursuant to exercises, exchanges or conversions of the Company’s outstanding securities and issuances pursuant to acquisitions or strategic transactions. In addition, pursuant to the Purchase Agreement, the purchasers in the Offerings have the right, until one year after shareholder approval for the Offerings is obtained, to participate in subsequent financings by the Company in an amount up to 50% of the financing in the aggregate subject to certain exceptions as specified in the Purchase Agreement. Under the terms of the Securities, until shareholder approval has been obtained, the Company cannot issue any Shares and the investors in the Offerings cannot exercise the Pre-Funded Warrants into common stock, nor convert the Preferred Stock into common stock. On February 6, 2015, the Company and investors amended the terms of the Securities to also include the Series A Warrants from being exercised until shareholder approval has been obtained.

On February 5, 2015, the Company filed a Certificate of Designation of Preferences, Rights and Limitations of Series A Convertible Preferred Stock with the Secretary of State of the State of Delaware. The number of shares of Preferred Stock designated is 718 and each share of Preferred Stock has a stated value equal to \$1,000. On February 6, 2015, the Company filed a Certificate of Amendment to the Certificate of Designation of Preferences, Rights and Limitations of Series A Convertible Preferred Stock (as amended, the “Certificate of Designation”) with the Secretary of State of the State of Delaware.

Except as otherwise provided in the Certificate of Designation or as otherwise required by law, the Preferred Stock shall have no voting rights. However, as long as any shares of Preferred Stock are outstanding, the Company shall not, without the affirmative vote of the holders of a majority of the then outstanding shares of the Preferred Stock, (a) alter or change adversely the powers, preferences or rights given to the Preferred Stock or alter or amend the Certificate of Designation, (b) authorize or create any class of stock ranking as to dividends, redemption or distribution of assets upon a Liquidation (as defined therein) senior to, or otherwise pari passu with, the Preferred Stock, (c) amend its certificate of incorporation or other charter documents in any manner that adversely affects any rights of the holders, (d) increase the number of authorized shares of Preferred Stock, or (e) enter into any agreement with respect to any of the foregoing.

Upon any liquidation, dissolution or winding-up of the Company, whether voluntary or involuntary (a "Liquidation"), the holders shall be entitled to receive out of the assets, whether capital or surplus, of the Company an amount equal to the Stated Value, plus any other fees, liquidated damages or dividends then due and owing thereon under the Certificate of Designation, for each share of Preferred Stock before any distribution or payment shall be made to the holders of any junior securities, and if the assets of the Company shall be insufficient to pay in full such amounts, then the entire assets to be distributed to the holders shall be ratably distributed among the holders in accordance with the respective amounts that would be payable on such shares if all amounts payable thereon were paid in full.

The conversion price for the Preferred Stock shall equal \$3.00, subject to certain terms as described in the Certificate of Designation.

In addition, until the date that (i) shareholder approval has been obtained and deemed effective, (ii) the Pre-funded Warrants are no longer outstanding, and (iii) there is an effective registration statement registering the resale of all of the shares underlying the Preferred Stock, we will be required to continue complying with negative covenants that limit our ability to incur debt, incur liens, amend our charter documents, repurchase securities, pay dividends or enter into related party transactions, which could adversely impact our operations.

About this Offering

This prospectus includes the resale of (i) 239,135 shares of common stock issuable upon conversion of Preferred Stock, and (ii) 1,406,028 shares of common stock issuable upon exercise of Series A Warrants.

This prospectus also includes the resale of an additional 426,317 shares of common stock consisting of (i) 264,318 shares of common stock sold in a private placement that closed on June 20, 2014 (the “June 2014 Private Placement”), (ii) 154,186 shares of common stock issuable upon exercise of warrants sold in the June 2014 Private Placement, and (iii) 7,813 shares of common stock issuable upon exercise of warrants held by Hercules Technology II, L.P. (“Hercules”), issued on September 30, 2013 in connection with the loan and security agreement entered into between Hercules and the Company. The warrants issued pursuant to the June 2014 Private Placement may be exercised for cash or on a cashless basis, have a per share exercise price of \$11.20 and a five year term. The warrants held by Hercules may be exercised for cash or on a cashless basis, have a per share exercise price of \$10.10 and a five year term.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before making an investment decision, you should consider carefully the risks, uncertainties and other factors described in our most recent Annual Report on Form 10-K, as supplemented and updated by subsequent quarterly reports on Form 10-Q and current reports on Form 8-K that we have filed or will file with the SEC, which are incorporated by reference into this prospectus.

Our business, affairs, prospects, assets, financial condition, results of operations and cash flows could be materially and adversely affected by these risks. For more information about our SEC filings, please see “Where You Can Find More Information.”

FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, that involve substantial risks and uncertainties. All statements, other than statements of historical fact, including statements regarding our strategy, future operations, future financial position, future revenues, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words “anticipate,” “believe,” “continue,” “should,” “estimate,” “expect,” “intend,” “may,” “plan,” “project,” “will,” and similar expressions are in

identify forward-looking statements, although not all forward-looking statements contain these identifying words.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included and incorporated by reference in this prospectus that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. See the section entitled "Risk Factors" herein for more information. You should consider these factors and other cautionary statements made in this prospectus and in the documents we incorporate by reference as being applicable to all related forward-looking statements wherever they appear in the prospectus and in the documents incorporated by reference. Unless specifically indicated, our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make. We do not assume any obligation to update any forward-looking statements.

USE OF PROCEEDS

This prospectus relates to shares of our common stock that may be offered and sold from time to time by the selling stockholders. We will not receive any of the proceeds resulting from the sale of common stock by the selling stockholder.

SELLING STOCKHOLDERS

This prospectus relates to the offering by the selling stockholders of up to 2,071,480 shares of common stock, including 264,318 outstanding shares, 239,135 shares issuable upon conversion of shares of Preferred Stock, and 1,568,027 shares issuable upon exercise of warrants.

The following table sets forth, based on information provided to us by the selling stockholders or known to us, the name of the selling stockholders, the nature of any position, office or other material relationship, if any, which the selling stockholders have had, within the past three years, with us or with any of our predecessors or affiliates, and the number of shares of our common stock beneficially owned by the selling stockholders before this offering. The number of shares owned are those beneficially owned, as determined under the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under these rules, beneficial ownership includes any shares of common stock as to which a person has sole or shared voting power or investment power and any shares of common stock which the person has the right to acquire within 60 days through the exercise of any option, warrant or right, through conversion of any security or pursuant to the automatic termination of a power of attorney or revocation of a trust, discretionary account or similar arrangement. No selling stockholder is a broker-dealer or an affiliate of a broker-dealer.

We have assumed all shares of common stock reflected on the table will be sold from time to time in the offering covered by this prospectus. Because the selling stockholders may offer all or any portions of the shares of common stock listed in the table below, no estimate can be given as to the amount of those shares of common stock covered by this prospectus that will be held by the selling stockholder upon the termination of the offering. As of February 27, 2015, there were 3,435,354 shares of our common stock issued and outstanding.

| Selling Stockholder | Number of Shares Beneficially Owned Before Offering | Number of Shares Offered | Number of Shares Beneficially Owned After Offering | Percentage of Shares Beneficially Owned After Offering |
|--|--|-----------------------------------|---|---|
| Alpha Capital Anstalt (1) | 381,282 | (9) 822,581(2) | 297,344 | (9) 5.4 % |
| Sabby Healthcare Master Fund, Ltd. (3) | 377,306 | (9) 427,811(4) | 280,042 | 5.1 % |
| Sabby Volatility Warrant Master Fund, Ltd. (3) | 376,852 | (9) 416,798(5) | 226,701 | 4.2 % |
| Mikhail Mogutov | 396,477 | 396,477(6) | 0 | 0 % |
| Hercules Technology II, L.P. (7) | 7,813 | 7,813 (8) | 0 | 0 % |

(1) Konrad Ackermann has voting and dispositive power over the securities of the Company owned by the selling stockholder.

(2) Represents 119,567 shares issuable upon conversion of Series A Preferred Stock and 703,014 shares issuable upon exercise of Series A warrants.

(3) Sabby Healthcare Master Fund, Ltd. (“SHMF”) and Sabby Volatility Warrant Master Fund, Ltd. (“SVWMF”) have indicated to us that Hal Mintz has voting and investment power over the shares held by each fund. SHMF and SVWMF have also indicated to us that Sabby Management, LLC serves as the investment manager of SHMF and SVWMF, that Hal Mintz is the manager of Sabby Management, LLC and that each of Sabby Management, LLC and Hal Mintz disclaim beneficial ownership over these shares except to the extent of any pecuniary interest therein.

(4) Represents 59,784 shares issuable upon conversion of Series A Preferred Stock, 351,507 shares issuable upon exercise of Series A warrants, and 16,520 shares issuable upon exercise of warrants sold in June 2014 Private Placement.

(5) Represents 59,784 shares issuable upon conversion of Series A Preferred Stock, 351,507 shares issuable upon exercise of Series A warrants, and 5,507 shares issuable upon exercise of warrants sold in June 2014 Private Placement.

(6) Represents 264,318 shares sold in June 2014 Private Placement and 132,159 shares issuable upon exercise of warrants sold in June 2014 Private Placement.

(7) Ben Bang has voting and dispositive power over the securities of the Company owned by the selling stockholder.

(8) Represents shares issuable upon exercise of warrants.

(9) The number of shares deemed beneficially owned is limited by contractual provisions that limit the selling stockholder’s beneficial ownership to not more than 9.99% of the Company’s outstanding common stock.

PLAN OF DISTRIBUTION

Each Selling Stockholder (the “Selling Stockholders”) of the securities and any of their pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their securities covered hereby on the Nasdaq Capital Market or any other stock exchange, market or trading facility on which the securities are traded or in private transactions. These sales may be at fixed or negotiated prices. A Selling Stockholder may use any one or more of the following methods when selling securities:

ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;

block trades in which the broker-dealer will attempt to sell the securities 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;

settlement of short sales;

in transactions through broker-dealers that agree with the Selling Stockholders to sell a specified number of such securities at a stipulated price per security;

through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;

a combination of any such methods of sale; or

any other method permitted pursuant to applicable law.

The Selling Stockholders may, from time to time, pledge or grant a security interest in some or all of the securities owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the securities, 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 securities 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.

The Selling Stockholders may also sell securities under Rule 144 under the Securities Act of 1933, as amended (the “Securities Act”), if available, rather than under this prospectus.

Broker-dealers engaged by the Selling Stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Stockholders (or, if any broker-dealer acts as agent for the purchaser of securities, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with FINRA IM-2440.

In connection with the sale of the securities 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 securities in the course of hedging the positions they assume. The Selling Stockholders may also sell securities short and deliver these securities to close out their short positions, or loan or pledge the securities 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 create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The Selling Stockholders and any broker-dealers or agents that are involved in selling the securities may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the securities purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each Selling Stockholder has informed the Company that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the securities.

The Company is required to pay certain fees and expenses incurred by the Company incident to the registration of the securities. The Company has agreed to indemnify the Selling Stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

We agreed to keep this prospectus effective until the earlier of (i) the date on which the securities may be resold by the Selling Stockholders without registration and without regard to any volume or manner-of-sale limitations by reason of Rule 144, without the requirement for the Company to be in compliance with the current public information under Rule 144 under the Securities Act or any other rule of similar effect or (ii) all of the securities have been sold pursuant to this prospectus or Rule 144 under the Securities Act or any other rule of similar effect. The resale securities will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale securities covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the common stock by the Selling Stockholders or any other person. We will make copies of this prospectus available to the Selling Stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Sichenzia Ross Friedman Ference LLP, New York, New York.

EXPERTS

The consolidated financial statements of Cleveland BioLabs, Inc. as of December 31, 2014 and 2013 and for each of the years in the two-year period ended December 31, 2014 appearing in Cleveland BioLabs' Annual Report on Form 10-K for the year ended December 31, 2014, have been audited by Meaden & Moore, Ltd., an independent registered public accounting firm, as set forth in its report thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

**DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR SECURITIES ACT
LIABILITIES**

The Registrant's certificate of incorporation and bylaws provide that each person who was or is made a party or is threatened to be made a party to or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he or she is or was one of the Registrant's directors or officers or is or was serving at the Registrant's request as a director, officer, or trustee of another corporation, or of a partnership, joint venture, trust or other enterprise, whether the basis of such proceeding is alleged action in an official capacity as a director, officer or trustee or in any other capacity while serving as a director, officer or trustee, shall be indemnified and held harmless by us to the fullest extent authorized by the Delaware General Corporation Law, or DGCL, against all expense, liability and loss (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action.

Section 145 of the DGCL permits a corporation to indemnify any director or officer of the corporation against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with any action, suit or proceeding brought by reason of the fact that such person is or was a director or officer of the corporation, if such person acted in good faith and in a manner that he or she reasonably believed to be in, or not opposed to, the best interests of the corporation, and, with respect to any criminal action or proceeding, if he or she had no reason to believe his or her conduct was unlawful. In a derivative action, (*i.e.*, one brought by or on behalf of the corporation), indemnification may be provided only for expenses actually and reasonably incurred by any director or officer in connection with the defense or settlement of such an action or suit if such person acted in good faith and in a manner that he or she reasonably believed to be in, or not opposed to, the best interests of the corporation, except that no indemnification shall be provided if such person shall have been adjudged to be liable to the corporation, unless and only to the extent that the court in which the action or suit was brought shall determine that the defendant is fairly and reasonably entitled to indemnity for such expenses despite such adjudication of liability.

Pursuant to Section 102(b)(7) of the DGCL, Article ELEVENTH of the Registrant's certificate of incorporation eliminates the liability of a director to the Registrant's stockholders for monetary damages for such a breach of fiduciary duty as a director, except for liabilities arising:

from any breach of the director's duty of loyalty to the Registrant or the Registrant's stockholders;

from acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;

under Section 174 of the DGCL; and

from any transaction from which the director derived an improper personal benefit.

The Registrant has entered into an agreement to indemnify one of the Registrant's directors. This agreement, among other things, provide that the Registrant will indemnify the director to the fullest extent authorized or permitted by the provisions of the Registrant's certificate of incorporation, bylaws or law for claims arising in his capacity as a director of the Registrant. The indemnification agreements also establish the procedures that will apply in the event the director makes a claim for indemnification.

The Registrant maintains a general liability insurance policy, which covers certain liabilities of directors and officers of the Registrant arising out of claims based on acts or omissions in their capacities as directors or officers.

The foregoing discussion of our certificate of incorporation, bylaws, indemnification agreements, and Delaware law is not intended to be exhaustive and is qualified in its entirety by such certificate of incorporation, bylaws, indemnification agreements, or law.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, offices or controlling persons of ours, pursuant to the foregoing provisions, 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. In the event that a claim for indemnification against such liabilities (other than the payment by us of expenses incurred or paid by a director, officer or controlling person of ours 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 hereunder, we will, unless in the opinion of our counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by us is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

We will pay all expenses in connection with the registration and sale of the common stock by the selling stockholder. The estimated expenses of issuance and distribution are set forth below.

| | |
|---------------------|------------|
| SEC filing fee | \$ 856 |
| Legal expenses | \$ 15,000 |
| Accounting expenses | \$ 5,000 |
| Miscellaneous | \$ 1,500 |
| Total | \$ 22,356* |

* Estimate

Item 15. Indemnification of Directors and Officers.

The Registrant's certificate of incorporation and bylaws provide that each person who was or is made a party or is threatened to be made a party to or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he or she is or was one of the Registrant's directors or officers or is or was serving at the Registrant's request as a director, officer, or trustee of another corporation, or of a partnership, joint venture, trust or other enterprise, whether the basis of such proceeding is alleged action in an official capacity as a director, officer or trustee or in any other capacity while serving as a director, officer or trustee, shall be indemnified and held harmless by us to the fullest extent authorized by the DGCL against all expense, liability and loss (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action.

Section 145 of the DGCL permits a corporation to indemnify any director or officer of the corporation against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with any action, suit or proceeding brought by reason of the fact that such person is or was a director or

officer of the corporation, if such person acted in good faith and in a manner that he or she reasonably believed to be in, or not opposed to, the best interests of the corporation, and, with respect to any criminal action or proceeding, if he or she had no reason to believe his or her conduct was unlawful. In a derivative action, (*i.e.*, one brought by or on behalf of the corporation), indemnification may be provided only for expenses actually and reasonably incurred by any director or officer in connection with the defense or settlement of such an action or suit if such person acted in good faith and in a manner that he or she reasonably believed to be in, or not opposed to, the best interests of the corporation, except that no indemnification shall be provided if such person shall have been adjudged to be liable to the corporation, unless and only to the extent that the court in which the action or suit was brought shall determine that the defendant is fairly and reasonably entitled to indemnity for such expenses despite such adjudication of liability.

Pursuant to Section 102(b)(7) of the DGCL, Article ELEVENTH of the Registrant's certificate of incorporation eliminates the liability of a director to the Registrant's stockholders for monetary damages for such a breach of fiduciary duty as a director, except for liabilities arising:

from any breach of the director's duty of loyalty to the Registrant or the Registrant's stockholders;

from acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;

under Section 174 of the DGCL; and

from any transaction from which the director derived an improper personal benefit.

The Registrant has entered into an agreement to indemnify one of the Registrant's directors. This agreement, among other things, provide that the Registrant will indemnify the director to the fullest extent authorized or permitted by the provisions of the Registrant's certificate of incorporation, bylaws or law for claims arising in his capacity as a director of the Registrant. The indemnification agreements also establish the procedures that will apply in the event the director makes a claim for indemnification.

The Registrant maintains a general liability insurance policy which covers certain liabilities of directors and officers of the Registrant arising out of claims based on acts or omissions in their capacities as directors or officers.

The foregoing discussion of our certificate of incorporation, bylaws, indemnification agreements, and Delaware law is not intended to be exhaustive and is qualified in its entirety by such certificate of incorporation, bylaws, indemnification agreements, or law.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, offices or controlling persons of ours, pursuant to the foregoing provisions, 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. In the event that a claim for indemnification against such liabilities (other than the payment by us of expenses incurred or paid by a director, officer or controlling person of ours 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 hereunder, we will, unless in the opinion of our counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by us is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

Item 16. Exhibits.

1. The undersigned registrant hereby undertakes 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 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 Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(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 (1)(i) and (1)(ii) of this section do not apply if the registration statement is on Form S-3, Form S-8 or Form F-3, and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the registration statement.

2. The undersigned registrant hereby undertakes that, for the purpose of determining any liability under the Securities Act of 1933, as amended, 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. The undersigned registrant hereby undertakes to remove from registration by means of a post-effective amendment any of the securities being registered that remain unsold at the termination of the offering.

4. The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) 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.

5. The undersigned registrant hereby undertakes that, for the purposes of determining liability to any purchaser:

(i) If the registrant is relying on Rule 430B:

(A) For purposes of determining liability under the Securities Act of 1933, 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

(B) 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 in the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

(ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. 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 part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

6. Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, may be permitted to directors, officers and controlling persons of the undersigned registrant according the foregoing provisions, or otherwise, the undersigned registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act 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, as amended, and will be governed by the final adjudication of such issue.

Item 17. Exhibits.

| Exhibit Number | Description of Document |
|----------------|---|
| 4.1 | Restated Certificate of Incorporation filed with the Secretary of State of Delaware on March 18, 2010 (incorporated by reference to Form 10-K for the year ended December 31, 2009, filed on March 22, 2010). |
| 4.2 | Certificate of Amendment of Restated Certificate of Incorporation, filed with the Secretary of State of Delaware on June 20, 2013 (incorporated by reference to Form 10-Q for the period ended June 30, 2013, filed on August 9, 2013). |
| 4.3 | Certificate of Amendment of Restated Certificate of Incorporation (incorporated by reference to Form 8-K filed on January 27, 2015). |
| 4.4 | Certificate of Designation of Preferences, Rights and Limitations of Series A Convertible Preferred Stock (incorporated by reference Form 8-K filed on February 6, 2015). |
| 4.5 | Certificate of Amendment of Certificate of Designation of Preferences, Rights and Limitations of Series A Convertible Preferred Stock (incorporated by reference Form 8-K filed on February 6, 2015). |
| 4.6 | Second Amended and Restated By-Laws (incorporated by reference to Form 8-K filed on December 5, 2007). |
| 5.1 | Opinion of Sichenzia Ross Friedman Ference LLP* |
| 23.1 | Consent of Meaden & Moore, Ltd.* |
| 23.2 | Consent of Sichenzia Ross Friedman Ference LLP (contained in Exhibit 5.1)* |

*Filed herewith

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 the City of Buffalo, State of New York, on February 27, 2015.

Cleveland BioLabs, Inc.

By: /s/ Yakov Kogan

Yakov Kogan

Its: Chief Executive Officer

(Principal Executive Officer)

By: /s/ C. Neil Lyons

C. Neil Lyons

Its: Chief Financial Officer

(Principal Financial and

Accounting Officer)

Each person whose signature appears below constitutes and appoints Yakov Kogan and C. Neil Lyons, and each of them severally, as his true and lawful attorney in fact and agent, with full powers of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any or all amendments (including post effective amendments) to the Registration Statement, 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) under the Securities Act of 1933, as amended, and all post effective amendments thereto, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, each acting alone, 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 or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, each acting alone, or his or 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 below by the following persons in the capacities and on the dates indicated.

/s/ Yakov Kogan February 27, 2015
Yakov Kogan
Chief Executive Officer and Director (principal executive officer)

/s/ C. Neil Lyons February 27, 2015
C. Neil Lyons
Chief Financial Officer (principal financial and accounting officer)

/s/ James J. Antal February 27, 2015
James J. Antal
Director

/s/ Julia R. Brown February 27, 2015
Julia R. Brown
Director

/s/ Andrei Gudkov February 27, 2015
Andrei Gudkov
Director

/s/ Daniel F. Hoth February 27, 2015
Daniel F. Hoth
Director

/s/ Richard S. McGowan February 27, 2015
Richard S. McGowan
Director

/s/ Anthony J. Principi February 27, 2015
Anthony J. Principi
Director

/s/ Alexander Polinsky February 27, 2015
Alexander Polinsky
Director

/s/ Randy S. Saluck February 27, 2015
Randy S. Saluck
Director

/s/ Elena Kasimova February 27, 2015

Elena Kasimova
Director

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