

CLEVELAND BIOLABS INC
Form S-3
December 10, 2013

As filed with the Securities and Exchange Commission on December 10, 2013

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
(IRS Employer Identification
Number)

73 High Street
Buffalo, New York 14203
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Yakov Kogan
Chief Executive Officer
Cleveland BioLabs, Inc.
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(716) 849-6810

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

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Approximate date of commencement of proposed sale to 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.

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 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 <input type="checkbox"/> | Accelerated filer <input checked="" type="checkbox"/> | Non-accelerated filer <input type="checkbox"/> (Do not check if a smaller reporting company) | Smaller reporting company <input type="checkbox"/> |
|---|--|--|---|

CALCULATION OF REGISTRATION FEE

| Title of Each Class of Securities to be Registered(1) | Amount to be Registered(1) | Proposed Maximum Offering Price per Share(1) | Proposed Maximum Aggregate Offering Price(2)(3) | Amount of Registration Fee |
|---|----------------------------|--|---|----------------------------|
| Common Stock, \$0.005 par value per share | (3) | (3) | (3) | (3) |
| Warrants | (3) | (3) | (3) | (3) |
| Total: | | | \$50,000,000 | \$6,440(4) |

(1) There are being registered hereunder such indeterminate number of shares of common stock and such indeterminate number of warrants to purchase common stock as will have an aggregate initial offering price not to exceed \$50,000,000. Any securities registered hereunder in an offering may be sold separately or as units with other securities registered hereunder.

(2) Pursuant to Rule 457(o) and General Instruction II.D. of Form S-3, which permit the registration fee to be calculated on the basis of the maximum offering price of all securities listed, the table does not specify information as to the amount of any particular security to be registered.

(3) Not required to be included in accordance with General Instruction II.D. of Form S-3.

(4) Calculated pursuant to Rule 457(o) under the Securities Act.

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 or until the 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. We 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 these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED DECEMBER 10, 2013

Cleveland BioLabs, Inc.
\$50,000,000
of
Common Stock
Warrants

We may from time to time offer and sell up to \$50,000,000 aggregate dollar amount of common stock and warrants. We will specify in one or more prospectus supplements the terms of the securities to be offered and sold. We may sell these securities to or through underwriters or dealers and also to other purchasers or through agents. We will set forth the names of any underwriters, dealers or agents in a prospectus supplement.

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 December 9, 2013 was \$1.20 per share. As of December 9, 2013, the aggregate market value of the voting and non-voting common equity held by non-affiliates, computed by reference to the price at which the common equity was last sold or the average bid and asked price of such common equity on that date, was approximately \$51,163,337, based on 45,182,114 shares of outstanding common stock, of which 42,636,114 were held by non-affiliates. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell securities in a public primary offering with a value exceeding more than one-third of our public float in any 12-month period so long as our public float remains below \$75.0 million. We have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the 12 calendar months prior to and including the date of this prospectus.

Investing in our securities involves a high degree of risk. See "Risk Factors" on page 3.

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.

This prospectus may not be used to consummate sales of securities unless, to the extent required by applicable law, it is accompanied by a prospectus supplement.

Prospectus dated December 10, 2013.

TABLE OF CONTENTS

| | Page |
|--|------|
| ABOUT THIS PROSPECTUS | i |
| SUMMARY | 1 |
| RISK FACTORS | 3 |
| SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS | 3 |
| USE OF PROCEEDS | 3 |
| RATIO OF EARNINGS TO FIXED CHARGES | 3 |
| DILUTION | 4 |
| DESCRIPTION OF SECURITIES | 4 |
| DESCRIPTION OF COMMON STOCK | 4 |
| DESCRIPTION OF WARRANTS | 6 |
| LEGAL OWNERSHIP OF SECURITIES | 8 |
| PLAN OF DISTRIBUTION | 11 |
| LEGAL MATTERS | 13 |
| EXPERTS | 13 |
| WHERE YOU CAN FIND MORE INFORMATION | 13 |
| INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE | 14 |

You should rely only on the information contained or incorporated by reference in this prospectus, any accompanying prospectus supplement or any “free writing prospectus” we may authorize to be delivered to you. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. You should assume that the information appearing in this prospectus, any prospectus supplement and the documents incorporated by reference herein and therein are accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates. Neither this prospectus nor any accompanying prospectus supplement shall constitute an offer or solicitation by anyone in any jurisdiction in which such offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make such offer or solicitation.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf registration process, we may from time to time sell common stock and warrants, or any combination of these securities, in one or more offerings up to a total dollar amount of \$50,000,000. We have provided to you in this prospectus a general description of the securities we may offer. Each time we sell securities, we will, to the extent required by law, provide a prospectus supplement that will contain specific information about the terms of the offering. We may also add, update or change in any accompanying prospectus supplement or any free writing prospectus we may authorize to be delivered to you any of the information contained in this prospectus. To the extent there is a conflict between the information contained in this prospectus and the prospectus supplement, you should rely on the information in the prospectus supplement, provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in this prospectus or any prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement. This prospectus, together with any accompanying prospectus supplement and any free writing prospectus we may authorize to be delivered to you, includes all material information relating to the offering of our securities.

As permitted by the rules and regulations of the SEC, the registration statement, of which this prospectus forms a part, 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 at the SEC’s offices described below under the heading “Where You Can Find More Information.”

In this prospectus, unless otherwise stated or the context otherwise requires, the terms “Cleveland BioLabs” and “CBLI” refer to Cleveland BioLabs, Inc., but not its consolidated subsidiaries and the “Company,” “we,” “us” and “our” refer to Cleveland BioLabs, Inc. together with its consolidated subsidiaries. Each of the trade names or service marks appearing or incorporated by reference in this prospectus or any applicable prospectus supplement are the property of their respective owners.

SUMMARY

The Company

We are a clinical-stage biotechnology company with a focus on oncology drug development. Our lead drug Entolimod (generic name for CBLB502) is being developed for dual indications under (a) the U.S. Food & Drug Administration's ("FDA's") Animal Efficacy Rule (21 CFR §314.610 drugs; §601.91 biologics), commonly referred to as the "Animal Rule", as a radiation countermeasure, and (b) under the FDA's traditional drug approval pathway as a targeted cancer treatment. CBLI is a Delaware corporation and was founded in 2003. Since our inception, we have pursued the research, development and commercialization of products that have the potential to treat cancer, reduce death from total body irradiation, and counteract the genotoxic effects of radio- and chemotherapies for oncology patients. Presently, nine product candidates are under development directly by our wholly-owned subsidiary, BioLab 612, LLC, and our majority-owned subsidiaries, Incuron, LLC ("Incuron") and Panacela Labs, Inc. ("Panacela"). An illustration of our product pipeline follows:

| Product Candidate | Indication | Description | Development Stage |
|-----------------------------|---------------------------|---|-------------------|
| Entolimod* | Radiation Countermeasure | Radioprotectant and mitigating agent targeting increased survival from lethal exposure | Pivotal stage |
| Entolimod | Targeted Cancer Treatment | TLR5 agonist inducing innate immune response to targeted tumor types and liver metastases | Phase 1 |
| CBLB612 | Neutropenia/HSCT** | Hematopoietic stem cell inducer and mobilizer to peripheral blood | Pre-clinical |
| Incuron Product Candidates | | | |
| CBL0102 | Hepatocellular Carcinoma | Quinacrine | Phase 1 |
| CBL0137 | Cancer Treatment | Small molecule targeting FACT*** | Phase 1 |
| Panacela Product Candidates | | | |
| Revercom | Cancer Treatment | Chemotherapy adjuvant | Pre-clinical |
| Mobilan | Cancer Treatment | Immunotherapy | Pre-clinical |
| Arkil | Targeted Cancer Treatment | Inhibitor of Androgen receptor | Pre-clinical |
| Antimycon | Targeted Cancer Treatment | Inhibitor of Myc oncogene | Pre-clinical |
| Xenomycins | Anti-Infective | Small molecules targeting FACT*** | Pre-clinical |

* We currently intend to rely on the Animal Rule in seeking marketing approval for this indication. Under the Animal Rule, if human efficacy trials are not ethical or feasible, the FDA can approve drugs or biologics used to treat or prevent serious or life threatening conditions caused by exposure to lethal or permanently disabling toxic chemical, biological, radiological, or nuclear substances based on human clinical data demonstrating safety and evidence of efficacy from appropriate animal studies and any additional supporting data.

** HSCT means hematopoietic stem cell transplant

*** FACT means chromatin remodeling complex named Facilitates Chromatin Transcription

We have successfully negotiated contracts and grants with the U.S. government totaling \$85.9 million for the development and procurement of our lead compound, Entolimod, for biodefense application as a radiation countermeasure. Of this \$85.9 million, we have received development funding of approximately \$44.6 million, of which we have recognized approximately \$44.1 million in revenue through September 30, 2013. As of September 30, 2013, the federal government has the potential to fund an additional \$41.4 million under our existing contracts and grants, including a \$30 million procurement option that becomes exercisable upon FDA approval. Our current contracts with the Department of Defense, including those contracts providing for the \$30 million procurement option, expire in December 2013. We are currently pursuing extensions of these contracts. We have performed extensive safety and efficacy studies in non-human primates (“NHPs”) and rodents and have evaluated Entolimod’s safety profile in 150 healthy human volunteers. We have submitted a proposal to the Biomedical Advanced Research and Development Agency of the Department of Health and Human Services to fund the remaining work necessary to complete a dossier of information needed to submit a Biologic License Application, or BLA, to the FDA for marketing approval. This remaining work includes: animal efficacy trials, human safety trials and biostatistical data needed to confirm proper dose conversion between NHPs and humans.

In October 2013, we received a contract valued at approximately 149 million rubles (approximately \$4.6 million) from the Ministry of Industry and Trade of the Russian Federation to support the clinical safety and efficacy assessment of Entolimod in colorectal cancer.

A Phase I trial evaluating the safety and pharmacokinetic and pharmacodynamic profile of Entolimod in refractory patients with advanced cancers, many of whom evidence liver metastases is underway at Roswell Park Cancer Institute. Evaluation of the effect that Entolimod has on metastasized tumor lesions in the liver is a secondary endpoint.

CBLB612, an inducer and mobilizer of hematopoietic stem cells, or HSCs, is also actively being developed and is currently undergoing formal pre-clinical safety assessment and cGMP-manufacturing development. In mid-2012, we received a contract valued at 139 million rubles (approximately \$4.4 million) from the Ministry of Industry and Trade of the Russian Federation for development of CBLB612. In the third quarter of 2013, we submitted an Investigational New Drug Application for CBLB612 in the Russian Federation.

In December 2009, we entered into a Participation Agreement with BioProcess Capital Partners, LLC, a Russian Federation venture capital fund, to create a joint venture, Incuron, to develop our Curaxin line of anti-cancer product candidates: specifically CBL0102, a nonproprietary molecule originally used to combat the effects of malaria, which we identified as having cancer treatment properties; and CBL0137, a new, proprietary molecule optimized to better target similar mechanisms of action in combating cancer. Incuron is our majority owned subsidiary, with approximately 59.2% of its equity interests held by us at September 30, 2013. Our Curaxin research is supported by a 150 million ruble (approximately \$4.7 million) grant from the Russian Federation Government initiative “Skolkovo”, which was awarded in late 2011.

CBL0102 is currently undergoing a Phase 1 safety and tolerability study in patients with liver metastases of solid tumors of epithelial origin, or primary advanced hepatic carcinoma for which standard therapy has failed or does not exist in the Russian Federation.

In October 2012, dosing was started with the oral formulation of CBL0137 in a multi-center, single agent, dose escalation study in subjects with advanced solid tumors that are resistant or refractory to standard of care treatment in the Russian Federation. In August 2013, dosing was started in a multi-center, single agent dose escalation study evaluating intravenous administration of CBL0137 in patients with metastatic or unresectable advanced solid cancers and lymphomas.

In September 2011, we entered into an Investment Agreement with Open Joint Stock Company “Rusnano”, or Rusnano, a multi-billion Russian Federation fund, governing the creation of Panacela, a joint venture company formed to develop five separate product candidates, all of which were in pre-clinical development at the end of 2012. Panacela is a majority-owned subsidiary, with 54.6% of its shares held by us at September 30, 2013. In late 2012, Panacela received a contract valued at 146 million rubles (approximately \$4.6 million) from the Ministry of Industry and Trade of the Russian Federation for the development of a family of anti-infective compounds known as Xenomycins. Additionally, in October 2013, Panacela entered into a three-year contract valued at approximately 149 million rubles (approximately \$4.6 million) with the Ministry of Industry and Trade of the Russian Federation to support preclinical and clinical studies of Mobilan, a cancer vaccine in preclinical development.

Additionally, we leverage close development relationships with Roswell Park Cancer Institute, Cleveland Clinic Foundation and Children’s Cancer Institute Australia. 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, and our majority-owned subsidiaries, Incuron, LLC and Panacela Labs, Inc.

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.

RISK FACTORS

Investing in our securities involves significant risks. Before making an investment decision, you should carefully consider the risks and other information we include or incorporate by reference in this prospectus and any prospectus supplement. In particular, you should consider the risk factors under the heading “Risk Factors” included in our most recent Annual Report on Form 10-K, as revised or supplemented by our subsequent Quarterly Reports on Form 10-Q, each of which are on file with the SEC and are incorporated herein by reference, and which may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones facing our company. Additional risks and uncertainties not currently known to us or that we currently deem immaterial may also affect our business operations. Additional risk factors may be included in a prospectus supplement relating to a particular offering of securities.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any prospectus supplement and the documents incorporated by reference herein contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or 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 intended to 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

Unless otherwise provided in the applicable prospectus supplement, we currently intend to use the net proceeds from the sale of the securities from offerings under this prospectus for general corporate purposes, including continued development of our product candidates, working capital and capital expenditures. We may set forth additional information on the use of proceeds from the sale of securities we offer under this prospectus in a prospectus supplement relating to the specific offering. We have not determined the amount of net proceeds to be used specifically for the foregoing purposes. As a result, our management will have broad discretion in the allocation of the net proceeds. Pending use of the net proceeds, we intend to invest the proceeds in a variety of capital preservation instruments, including short-term, investment-grade, interest-bearing instruments.

RATIO OF EARNINGS TO FIXED CHARGES

Our earnings were insufficient to cover fixed charges in each of the years ended December 31, 2008, 2009, 2010, 2011 and 2012 and in the nine months ended September 30, 2013. Accordingly, the following table sets forth the

deficiency of earnings to cover fixed charges for each of the foregoing periods. Because of the deficiency, ratio information is not applicable.

3

| | 2008 | 2009 | 2010 | 2011 | 2012 | Nine Months Ended September 30, 2013 |
|---|----------------|----------------|----------------|---------------|----------------|---|
| Earnings | \$(14,025,927) | \$(12,826,409) | \$(26,671,857) | \$(5,229,725) | \$(22,414,640) | \$(19,284,530) |
| Ratio of earnings to fixed charges | N/A | N/A | N/A | N/A | N/A | N/A |
| Deficiency of earnings available to cover fixed charges | \$(13,959,410) | \$(12,750,928) | \$(26,602,713) | \$(5,150,392) | \$(22,299,102) | \$(19,162,642) |

For purposes of computing the deficiency of earnings to cover fixed charges, “earnings” consist of loss from operations before income taxes and fixed charges. “Fixed charges” consist of interest expense, capitalized interest, amortization of capitalized interest and the portion of operating lease expense that represents interest.

As of the date of this prospectus, we have no shares of preferred stock outstanding and have not declared or paid any preferred stock dividends for the periods set forth above. Accordingly, a ratio of earnings to fixed charges is being presented in lieu of a ratio of earnings to combined fixed charges and preferred stock dividends.

DILUTION

We will set forth in a prospectus supplement the following information regarding any material dilution of the equity interests of investors purchasing securities in an offering under this prospectus:

- the net tangible book value per share of our equity securities before and after the offering;
- the amount of the increase in such net tangible book value per share attributable to the cash payments made by purchasers in the offering; and
- the amount of the immediate dilution from the public offering price which will be absorbed by such purchasers.

DESCRIPTION OF SECURITIES

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we so indicate in the applicable prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We will also include in the prospectus supplement information, where applicable, about material U.S. federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

We may sell from time to time, in one or more offerings, common stock and warrants to purchase any such securities.

In this prospectus, we refer to the common stock and warrants to be sold by us in an offering collectively as “securities.” The total dollar amount of all securities that we may issue under this prospectus will not exceed \$50,000,000.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

DESCRIPTION OF COMMON STOCK

The following description of our common stock, together with any additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of our common stock that we may offer in offerings under this prospectus. For the complete terms of our common stock, please refer to our certificate of incorporation and by-laws, which are exhibits to the registration statement that includes this prospectus. The terms of our common stock may also be affected by Delaware law.

Authorized Capital Stock

Under our certificate of incorporation, our authorized capital stock consists of 160,000,000 shares of common stock, \$0.005 par value per share, and 10,000,000 shares of preferred stock, \$0.005 par value per share. As of December 9, 2013, we had 45,182,114 shares of common stock outstanding and no shares of preferred stock outstanding. We will describe the specific terms of any common stock we may offer in more detail in a prospectus supplement relating to the offering of shares of common stock. If we so indicate in a prospectus supplement, the terms of any common stock offered under that prospectus supplement may differ from the terms described below.

Common Stock

Voting Rights. The holders of our common stock are entitled to one vote per share with respect to each matter presented to our stockholders on which the holders of common stock are entitled to vote and do not have cumulative voting rights. An election of directors by our stockholders is determined by a plurality of the votes cast by the stockholders entitled to vote on the election.

Dividends. Holders of common stock are entitled to receive ratably any dividends as may be declared by our board of directors, subject to any preferential dividend rights of outstanding preferred stock.

Liquidation and Dissolution. In the event of our liquidation or dissolution, the holders of common stock are entitled to receive ratably all assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock.

Other Rights. Holders of common stock have no preemptive, subscription, redemption or conversion rights. 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 shares of any series of preferred stock that we may designate and issue in the future.

Listing. Our common stock is listed on The NASDAQ Capital Market under the symbol "CBLI." As of December 9, 2013 the closing price per share of our common stock on The NASDAQ Capital Market was \$1.20, and we had approximately 33 holders of record of our common stock.

Transfer Agent and Registrar. The transfer agent and registrar for our common stock is Continental Stock Transfer & Trust Company.

Anti-Takeover Effects of Delaware Law and our Certificate of Incorporation and By-laws

The provisions of Delaware law, our certificate of incorporation and our bylaws, which are discussed below, could discourage or make it more difficult to accomplish a proxy contest or other change in our management or the acquisition of control by a holder of a substantial amount of our voting stock. It is possible that these provisions could make it more difficult to accomplish, or could deter, transactions that stockholders may otherwise consider to be in their best interests or the best interests of the company. These provisions are intended to enhance the likelihood of continuity and stability in the composition of our board of directors and in the policies formulated by the board of directors and to discourage certain types of transactions that may involve an actual or threatened change of control of us. These provisions are also designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. Such provisions also may have the effect of preventing changes in our management.

Delaware Law

We are subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law, or DGCL. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is, or the transaction in which the person became an interested stockholder was, approved in a prescribed manner or another prescribed exception applies. For purposes of Section 203, a “business combination” is defined broadly to include a merger, asset sale or other transaction resulting in a financial benefit to the interested stockholder, and, subject to certain exceptions, an “interested stockholder” is a person who, together with his or her affiliates and associates, owns, or within three years prior, did own, 15% or more of the corporation’s voting stock.

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

Our certificate of incorporation and bylaws do not permit our stockholders to act by written consent. As a result, any action to be effected by our stockholders must be effected at a duly called annual or special meeting of the stockholders. Our certificate of incorporation and our bylaws also provide that special meetings of the stockholders may be called only by (i) our Chairman of the board of directors and (ii) our board of directors. Our bylaws provide that, for nominations to the board of directors or for other business to be properly brought by a stockholder before a meeting of stockholders, the stockholder must first have given timely notice of the proposal in writing to our Secretary. For an annual meeting, a stockholder's notice generally must be delivered not less than 90 days nor more than 120 days prior to the anniversary of the date of previous year's annual meeting; provided, however, that in the event that the annual meeting is called for a date that is not within 30 days before or after such anniversary date, notice by the stockholder in order to be timely must be received not later than the 10th day following the day on which such notice of the date of the annual meeting was mailed or public disclosure was made, whichever occurs first. Detailed requirements as to the form of the notice and information required in the notice are specified in the bylaws. If it is determined that business was not properly brought before a meeting in accordance with our bylaws, such business will not be conducted at the meeting.

Effects of Authorized but Unissued Stock

We have shares of common stock and preferred stock available for future issuance without stockholder approval, subject to any limitations imposed by the listing standards of The NASDAQ Capital Market. We may utilize these additional shares for a variety of corporate purposes including for future public offerings to raise additional capital or facilitate corporate acquisitions or for payment as a dividend on our capital stock. The existence of unissued and unreserved common stock and preferred stock may enable our board of directors to issue shares to persons friendly to current management or to issue preferred stock with terms that could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a controlling interest in our company by means of a merger, tender offer, proxy contest or otherwise. In addition, if we issue preferred stock, the issuance could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation.

Limitation of Liability and Indemnification of Officers and Directors

Our certificate of incorporation contains provisions permitted under the DGCL relating to the liability of directors. The provisions eliminate a director's liability for monetary damages for a breach of fiduciary duty, except in circumstances involving wrongful acts, such as the breach of a director's duty of loyalty or acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law. Further, our certificate of incorporation contains provisions to indemnify our directors and officers to the fullest extent permitted by the DGCL. We have also entered into indemnification agreements with certain of our current and former directors and certain of our officers and expect to enter into a similar agreement with any new directors or officers.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer in an offering under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. If we so indicate in the prospectus supplement, the terms of any warrants offered under that prospectus supplement may differ from the terms described below. Specific warrant agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit

to the registration statement that includes this prospectus.

General

We may issue warrants for the purchase of common stock in one or more series. We may issue warrants independently or together with common stock, and the warrants may be attached to or separate from these securities.

6

We will evidence each series of warrants by warrant certificates that we will issue under a separate agreement. We may enter into the warrant agreement with a warrant agent. We will indicate the name and address and other information regarding the warrant agent in the applicable prospectus supplement relating to a particular series of warrants.

If we decide to issue warrants pursuant to this prospectus, we will specify in a prospectus supplement the terms of the series of warrants, including, if applicable, the following:

- the offering price and aggregate number of warrants offered;
- the currency for which the warrants may be purchased;
- the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
 - the date on and after which the warrants and the related securities will be separately transferable;
- the number of shares of common stock purchasable upon the exercise of the warrants and the price at which these shares may be purchased upon such exercise;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreement and the warrants;
 - the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
 - the dates on which the right to exercise the warrants will commence and expire;
 - the manner in which the warrant agreement and warrants may be modified;
- a discussion of any material U.S. income tax consequences of holding or exercising the warrants;
 - the terms of the securities issuable upon exercise of the warrants; and
 - any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including the right to receive dividends, if any, or payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to 5:00 p.m. New York City time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then

we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Enforceability of Rights by Holders of Warrants

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

LEGAL OWNERSHIP OF SECURITIES

We can issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee maintain for this purpose as the “holders” of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in securities that are not registered in their own names, as “indirect holders” of those securities. As we discuss below, indirect holders are not legal holders, and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplement. This means securities may be represented by one or more global securities registered in the name of a financial institution that holds them as depositary on behalf of other financial institutions that participate in the depositary’s book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Securities issued in global form will be registered in the name of the depositary or its nominee. Consequently, for securities issued in global form, we will recognize only the depositary as the holder of the securities, and we will make all payments on the securities to the depositary. The depositary passes along the payments it receives to its participants, which in turn pass the payments along to their customers who are the beneficial owners. The depositary and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a book-entry security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depositary’s book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not holders, of the securities.

Street Name Holders

We may terminate a global security or issue securities in non-global form. In these cases, investors may choose to hold their securities in their own names or in “street name.” Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

For securities held in street name, we will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not holders, of those securities.

Legal Holders

Our obligations, as well as the obligations of any applicable trustee and of any third parties employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form. For example, once we make a payment or give a notice to the holder, we have no further responsibility for the payment or notice even if that holder is required, under agreements with depository participants or customers or by law, to pass it along to the indirect holders but does not do so.

Special Considerations For Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form or in street name, you should check with your own institution to find out:

- how it handles securities payments and notices;
- whether it imposes fees or charges;
- how it would handle a request for the holders’ consent, if ever required;
- whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;
- how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and
 - if the securities are in book-entry form, how the depository’s rules and procedures will affect these matters.

Global Securities

A global security is a security held by a depository that represents one or any other number of individual securities. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose

is called the depository. Unless we specify otherwise in the applicable prospectus supplement, The Depository Trust Company, or DTC, will be the depository for all securities issued in book-entry form.

A global security may not be transferred to or registered in the name of anyone other than the depository, its nominee or a successor depository, unless special termination situations arise. We describe those situations below under “—Special Situations When a Global Security Will Be Terminated.” As a result of these arrangements, the depository, or its nominee, will be the sole registered owner and holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution

that in turn has an account with the depository or with another institution that does. Thus, an investor whose security is represented by a global security will not be a holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplement for a particular security indicates that the security will be issued in global form only, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

Special Considerations For Global Securities

As an indirect holder, an investor's rights relating to a global security will be governed by the account rules of the investor's financial institution and of the depository, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and instead deal only with the depository that holds the global security.

If securities are issued only in the form of a global security, an investor should be aware of the following:

- an investor cannot cause the securities to be registered in his or her name, and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations we describe below;
- an investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as we describe under “—Legal Holders” above;
- an investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;
- an investor may not be able to pledge his or her interest in a global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;
- the depository's policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor's interest in a global security. We and any applicable trustee have no responsibility for any aspect of the depository's actions or for its records of ownership interests in a global security. We and the trustee also do not supervise the depository in any way;
- the depository may, and we understand that DTC will, require that those who purchase and sell interests in a global security within its book-entry system use immediately available funds, and your broker or bank may require you to do so as well; and
- financial institutions that participate in the depository's book-entry system, and through which an investor holds its interest in a global security, may also have their own policies affecting payments, notices and other matters relating to the securities. There may be more than one financial intermediary in the chain of ownership for an investor. We do not monitor and are not responsible for the actions of any of those intermediaries.

Special Situations When A Global Security Will Be Terminated

In a few special situations described below, the global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks or brokers to find out how to have

their interests in securities transferred to their own name, so that they will be direct holders. We have described the rights of holders and street name investors above.

The global security will terminate when the following special situations occur:

- if the depository notifies us that it is unwilling, unable or no longer qualified to continue as depository for that global security and we do not appoint another institution to act as depository within 90 days;
 - if we notify any applicable trustee that we wish to terminate that global security; or
- if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived.

The prospectus supplement may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the prospectus supplement. When a global security terminates, the depository, and not we or any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

PLAN OF DISTRIBUTION

We may sell the securities under this prospectus in one or more of the following ways from time to time:

- through agents;
- to or through underwriters;
- through dealers;
- directly to purchasers; or
- through a combination of these methods of sale.

The securities that we distribute by any of these methods may be sold, in one or more transactions, at:

- a fixed price or prices, which may be changed;
- market prices prevailing at the time of sale;
- prices related to prevailing market prices;
- negotiated prices; or
- a combination of these pricing methods.

Offers to purchase offered securities may be solicited by agents designated by us from time to time. Any agent involved in the offer or sale of the offered securities in respect of which this prospectus is delivered will be named, and any commissions payable by us will be set forth, in the applicable prospectus supplement. Unless otherwise set forth in the applicable prospectus supplement, any agent will be acting on a reasonable best efforts basis for the period of its appointment. Any agent may be deemed to be an underwriter, as that term is defined in the Securities Act, of the offered securities so offered and sold.

We will set forth in a prospectus supplement the terms of the offering of our securities, including:

- the name or names of any agents, underwriters or dealers;
- the purchase price of our securities being offered and the proceeds we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and commissions and other items constituting agents' or underwriters' compensation;
- the public offering price;

- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchanges on which such securities may be listed.

If offered securities are sold to the public by means of an underwritten offering, either through underwriting syndicates represented by managing underwriters or directly by the managing underwriters, we will execute an underwriting agreement with an underwriter or underwriters, and the names of the specific managing underwriter or underwriters, as well as any other underwriters,

will be set forth in the applicable prospectus supplement. In addition, the terms of the transaction, including commissions, discounts and any other compensation of the underwriters and dealers, if any, will be set forth in the applicable prospectus supplement, which prospectus supplement will be used by the underwriters to make resales of the offered securities. If underwriters are utilized in the sale of the offered securities, the offered securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions, including:

- negotiated transactions;
- at fixed public offering prices; or
- at varying prices determined by the underwriters at the time of sale.

In addition, unless otherwise indicated in the prospectus supplement, the underwriting agreement will provide that the obligations of the underwriters are subject to specified conditions precedent and that the underwriters with respect to a sale of offered securities will be obligated to purchase all of the offered securities of a series if any are purchased.

We may grant to the underwriters options to purchase additional offered securities to cover over-allotments, if any, at the public offering price with additional underwriting discounts or commissions, as may be set forth in the applicable prospectus supplement. If we grant any over-allotment option, the terms of the over-allotment option will be set forth in the applicable prospectus supplement.

If a dealer is utilized in the sales of offered securities, we will sell the offered securities to the dealer as principal. The dealer may then resell the offered securities to the public at varying prices to be determined by the dealer at the time of resale. Any dealer may be deemed to be an underwriter of the offered securities so offered and sold. The name of the dealer and the terms of the transaction will be set forth in the applicable prospectus supplement.

We may directly solicit offers to purchase offered securities and sell offered securities directly to institutional investors or others with respect to any resale of the offered securities. The terms of any of these sales will be described in the applicable prospectus supplement.

Offered securities may also be offered and sold in connection with a remarketing upon their purchase, in accordance with a redemption or repayment pursuant to their terms, or otherwise by one or more remarketing firms acting as principals for their own accounts or as agents for us. Any remarketing firm will be identified and the terms of its agreements, if any, with us and its compensation will be described in the applicable prospectus supplement. Remarketing firms may be deemed to be underwriters in connection with the offered securities remarketed by them.

Agents, underwriters, dealers and remarketing firms may be entitled, under agreements entered into with us, to indemnification by us against specified civil liabilities, including liabilities under the Securities Act that may arise from any untrue statement or alleged untrue statement of a material fact or any omission or alleged omission to state a material fact in this prospectus, any supplement or amendment hereto, or in the registration statement of which this prospectus forms a part, or to contribution with respect to payments which the agents, underwriters or dealers may be required to make.

We may authorize underwriters or other persons acting as agents to solicit offers by specified institutions to purchase offered securities pursuant to contracts providing for payments and delivery on a future date, which will be set forth in the applicable prospectus supplement. Institutions with which these contracts may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and others. However, in all cases, these institutions must be approved by us. The obligations of any purchaser under any contract will be subject to the condition that the purchase of the offered securities shall not, at the time of delivery, be

prohibited under the laws of the jurisdiction to which the purchaser is subject. The underwriters and other agents will not have any responsibility in respect of the validity or performance of these contracts.

Underwriters, dealers, agents and remarketing firms may be customers of, engage in transactions with, or perform services for, us in the ordinary course of business for which they have received or will continue to receive customary compensation.

Unless otherwise specified in the applicable prospectus supplement, each class or series of securities will be a new issue with no established trading market, other than our common stock, which is traded on The NASDAQ Capital Market. We may elect to list any

other class or series of securities on any exchange and, in the case of our common stock, on any additional exchange. However, unless otherwise specified in the applicable prospectus supplement, we will not be obligated to do so. It is possible that one or more underwriters may make a market in a class or series of securities, but the underwriters will not be obligated to do so and may discontinue any market making at any time without notice. We cannot give any assurance as to the liquidity of the trading market for any of the offered securities.

In connection with an offering, an underwriter may purchase and sell securities in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of securities than they are required to purchase in the offering. "Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional securities from us, if any, in the offering. If the underwriters have an over-allotment option to purchase additional securities from us, the underwriters may close out any covered short position by either exercising their over-allotment option or purchasing securities in the open market. In determining the source of securities to close out the covered short position, the underwriters may consider, among other things, the price of securities available for purchase in the open market as compared to the price at which they may purchase securities through the over-allotment option. "Naked" short sales are any sales in excess of such option or where the underwriters do not have an over-allotment option. The underwriters must close out any naked short position by purchasing securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the securities in the open market after pricing that could adversely affect investors who purchase in the offering.

Accordingly, to cover these short sales positions or to otherwise stabilize or maintain the price of the securities, the underwriters may bid for or purchase securities in the open market and may impose penalty bids. If penalty bids are imposed, selling concessions allowed to syndicate members or other broker-dealers participating in the offering are reclaimed if securities previously distributed in the offering are repurchased, whether in connection with stabilization transactions or otherwise. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. The impositions of a penalty bid may also affect the price of the securities to the extent that it discourages resale of the securities. The magnitude or effect of any stabilization or other transactions is uncertain. These transactions may be effected on The NASDAQ Capital Market or otherwise and, if commenced, may be discontinued at any time.

To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution.

LEGAL MATTERS

The validity of the securities offered hereby is being passed upon for us by Cooley LLP, Boston, Massachusetts.

EXPERTS

Meaden & Moore, Ltd., independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2012, and the effectiveness of our internal control over financial reporting as of December 31, 2012, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements and our management's assessment of the effectiveness of internal controls over financial reporting as of December 31, 2012 are incorporated by reference in reliance on Meaden & Moore, Ltd.'s reports, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

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We file reports, proxy statements and other documents with the SEC as required by the Exchange Act. You can find, copy and inspect information we file at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. You can call the SEC at 1-800-SEC-0330 for further information about the public reference room. You can review our electronically filed reports, proxy and information statements on the SEC's web site at www.sec.gov or on our web site at www.cbiolabs.com. Information included on our web site is not part of this prospectus or any prospectus supplement.

This prospectus is part of a registration statement that we filed with the SEC. The registration statement contains more information than this prospectus regarding us and our securities, including exhibits and schedules. You can obtain a copy of the registration statement from the SEC at any address listed above or from the SEC's web site.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate" into this prospectus information that we file with the SEC in other documents. This means that we can disclose important information to you by referring to other documents that contain that information. Any information that we incorporate by reference is considered part of this prospectus.

Information contained in this prospectus and information that we file with the SEC in the future and incorporate by reference in this prospectus automatically modifies and supersedes previously filed information including information in previously filed documents or reports that have been incorporated by reference in this prospectus, to the extent the new information differs from or is inconsistent with the old information. Any information so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We incorporate by reference, as of their respective dates of filing, the documents listed below that we have filed with the SEC and any documents that we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus (except in each case the information contained in such documents to the extent "furnished" and not "filed"):

- (1) our Annual Report on Form 10-K for the year ended December 31, 2012, as filed with the SEC on March 18, 2013 and as amended on April 30, 2013 (File No. 001-32954);
- (2) our Quarterly Report on Form 10-Q for the quarter ended March 31, 2013, as filed with the SEC on May 9, 2013 (File No. 001-32954);
- (3) our Quarterly Report on Form 10-Q for the quarter ended June 30, 2013, as filed with the SEC on August 9, 2013 (File No. 001-32954);
- (4) our Quarterly Report on Form 10-Q for the quarter ended September 30, 2013, as filed with the SEC on November 8, 2013 (File No. 001-32954);
- (5) our Current Reports on Form 8-K filed with the SEC on April 9, 2013, April 25, 2013, May 9, 2013, June 20, 2013, September 5, 2013, October 4, 2013, October 18, 2013 and November 6, 2013 (File No. 001-32954);
- (6) any other filings pursuant to the Exchange Act after the date of filing the initial registration statement and prior to the termination of the offering; and
- (7) the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on July 20, 2006, including any amendments or reports filed for the purpose of updating that description.

You may request a copy of these documents, which will be provided to you at no cost, by writing or telephoning us using the following contact information:

Cleveland BioLabs, Inc.
73 High Street
Buffalo, New York 14203
Attention: Corporate Secretary
Telephone: (716) 849-6810

You should rely only on the information contained in this prospectus, including information incorporated by reference as described above, any accompanying prospectus supplement or any “free writing prospectus” we may authorize to be delivered to you. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front of those documents or that any document incorporated by reference is accurate as of any date other than its filing date. You should not consider this prospectus to be an offer or solicitation relating to the securities

in any jurisdiction in which such an offer or solicitation relating to the securities is not authorized. Furthermore, you should not consider this prospectus to be an offer or solicitation relating to the securities if the person making the offer or solicitation is not qualified to do so, or if it is unlawful for you to receive such an offer or solicitation.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the various expenses to be incurred in connection with the registration of the securities being registered hereby, all of which will be borne by the Registrant. All amounts shown are estimates except the SEC registration fee.

| | |
|--|-------------|
| SEC registration fee | \$ 6,440.00 |
| Transfer agent's, trustee's and depository's fees and expenses | - |
| Printing and engraving expenses | - |
| Legal fees and expenses | 25,000.00 |
| Accounting fees and expenses | 5,000.00 |
| Miscellaneous | 4,560.00 |
| Total expenses | \$41,000.00 |

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 agreements to indemnify the Registrant's directors and executive officers. These agreements, among other things, provide that the Registrant will indemnify the director or executive officer 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 or her capacity as a

II-1

director or officer of the Registrant. The indemnification agreements also establish the procedures that will apply in the event a director or officer 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.

In any underwriting agreement the Registrant enters into in connection with the sale of common stock being registered hereby, the underwriters will agree to indemnify, under certain conditions, the Registrant, the Registrant's directors, the Registrants officers and persons who control the Registrant with the meaning of the Securities Act of 1933 against certain liabilities.

Item 16. Exhibits.

| Exhibit Number | Description |
|----------------|---|
| 1.1 | The form of equity underwriting agreement will be filed as an exhibit to a Current Report of the Registrant on Form 8-K and incorporated herein by reference. |
| 3.1 | 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). |
| 3.2 | Second Amended and Restated By-Laws (Incorporated by reference to Form 8-K filed on December 5, 2007). |
| 3.3 | 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). |
| 4.1 | Form of Common Stock Warrant Agreement and Warrant Certificate. |
| 5.1 | Opinion of Cooley LLP. |
| 12.1 | Statement re: Computation of Ratio of Earnings to Fixed Charges. |
| 23.1 | Consent of Meaden & Moore, Ltd. (Independent Registered Public Accounting Firm). |
| 23.2 | Consent of Cooley LLP (Included in Exhibit 5.1). |
| 24.1 | Power of Attorney (Included on signature page). |

Item 17. Undertakings.

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 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 SEC 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), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the Registrant pursuant to Section 13 or Section 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:

II-3

(A) 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 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 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;

(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 the 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.

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 section 15(d) of the Securities Exchange Act of 1934 (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.

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 SEC 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.

II-4

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, 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 Boston, Commonwealth of Massachusetts, on December 10, 2013.

CLEVELAND BIOLABS, INC.

By: /s/ YAKOV KOGAN
 Name: Yakov Kogan
 Title: Chief Executive Officer

SIGNATURES AND POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Yakov Kogan and C. Neil Lyons and each of them severally, his true and lawful attorney or attorneys-in-fact and agents, with full power to act with or without the others and with full power of substitution and resubstitution, to execute in his name, place and stead, in any and all capacities, any or all amendments (including pre-effective and post-effective amendments) to this Registration Statement and any registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents and each of them, full power and authority to do and perform in the name of and on behalf of the undersigned, in any and all capacities, each and every act and thing necessary or desirable to be done in and about the premises, to all intents and purposes and as fully as they might or could do in person, hereby ratifying, approving and confirming all that said attorneys-in-fact and agents or their substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

| Signature | Title | Date |
|---|--|----------------------|
| <u>/s/ DAVID C. HOHN</u> David C. Hohn | Chairman of the Board | December 10, 2013 |
| <u>/s/ YAKOV KOGAN</u> Yakov Kogan | Director and Chief Executive Officer (principal executive officer) | December 10, 2013 |
| <u>/s/ C. NEIL LYONS</u> C. Neil Lyons | Chief Financial Officer (principal financial officer and principal accounting officer) | December 10, 2013 |
| /s/ ANDREI GUDKOV | Director, Chief Scientific Officer | December 10, |

Andrei Gudkov

2013

/s/ JAMES J. ANTAL

Director

December 10,
2013

James J. Antal

II-5

| Signature | Title | Date |
|---|----------|----------------------|
| <u>/s/ JULIA R. BROWN</u> Julia R. Brown | Director | December 10, 2013 |
| <u>/s/ PAUL E. DICORLETO</u> Paul E. DiCorleto | Director | December 10, 2013 |
| <u>/s/ ANTHONY J. PRINCIPI</u> Anthony J. Principi | Director | December 10, 2013 |
| <u>/s/ RANDY S. SALUCK</u> Randy S. Saluck | Director | December 10, 2013 |

EXHIBIT INDEX

| Exhibit Number | Description |
|-------------------|---|
| 1.1 | The form of equity underwriting agreement will be filed as an exhibit to a Current Report of the Registrant on Form 8-K and incorporated herein by reference. |
| 3.1 | 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). |
| 3.2 | Second Amended and Restated By-Laws (Incorporated by reference to Form 8-K filed on December 5, 2007). |
| 3.3 | 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). |
| 4.1 | Form of Common Stock Warrant Agreement and Warrant Certificate. |
| 5.1 | Opinion of Cooley LLP. |
| 12.1 | Statement re: Computation of Ratio of Earnings to Fixed Charges. |
| 23.1 | Consent of Meaden & Moore, Ltd. (Independent Registered Public Accounting Firm). |
| 23.2 | Consent of Cooley LLP (Included in Exhibit 5.1). |
| 24.1 | Power of Attorney (Included on signature page). |
