

CLEVELAND BIOLABS INC
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PROSPECTUS SUPPLEMENT
(To Prospectus dated June 17, 2010)

Cleveland BioLabs, Inc.

5,872,500 Shares of Common Stock
Series E Warrants to Purchase 1,468,125 Shares of Common Stock
Series F Warrants to Purchase 1,468,125 Shares of Common Stock

We are offering up to 5,872,500 shares of our common stock, Series E Warrants (the “Series E Warrants”) to purchase up to 1,468,125 shares of our common stock (the “Series E Warrant shares”), and Series F Warrants (“Series F Warrants”) to purchase up to 1,468,125 shares of our common stock (the “Series F Warrant shares”). We collectively refer to the Series E Warrants and the Series F Warrants as the “warrants” and the Series E Warrant shares and the Series F Warrant shares as the “warrant shares.” We collectively refer to the shares of common stock offered hereby, the warrants and the warrant shares as the “securities.”

The common stock and warrants will be sold in units, with each unit consisting of one share of common stock, a Series E Warrant to purchase 0.25 shares of common stock and a Series F Warrant to purchase 0.25 shares of common stock. Each unit will be sold to investors in this offering at a negotiated price of \$4.00 per unit. The shares of common stock and warrants will be issued separately but can only be purchased together in this offering.

The Series E Warrants have an initial exercise price of \$4.50 per share, will initially become exercisable on the six month anniversary of issuance and will expire on the twelve month anniversary of issuance. The Series F Warrants have an initial exercise price of \$5.00 per share, will initially become exercisable on the six month anniversary of issuance and will expire on the five year anniversary of issuance. The exercise price of the warrants and the number of shares into which the warrants may be exercised are subject to adjustment in certain circumstances. See “Description of Our Common Stock” and “Description of Our Warrants” for more information on the securities offered hereby.

Our common stock is listed on the Nasdaq Capital Market under the symbol “CBLI.” The last reported sales price of our common stock on the Nasdaq Capital Market on June 16, 2011 was \$4.45 per share. The warrants are not and will not be listed for trading on the Nasdaq Capital Market.

We are offering these securities on a reasonable best efforts basis to accredited institutional and individual investors. We have retained Rodman & Renshaw, LLC as our exclusive placement agent in connection with this offering. See “Plan of Distribution.”

Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page S-5 in this prospectus supplement, “Risk Factors” beginning on page 2 of the accompanying prospectus and other information included and incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of the factors you should carefully consider before deciding to buy our securities.

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

	Per Unit	Maximum Offering Amount
Public offering price of units	\$4.00	\$23,490,000
Placement agent's fees (1)	\$0.24	\$1,409,400
Proceeds, before expenses, to us	\$3.76	\$22,080,600

- (1) In addition, we have agreed to issue the placement agent warrants to purchase up to 176,175 shares of our common stock at an exercise price of \$5.00 per share and to reimburse the placement agent for certain of its expenses as described under "Plan of Distribution" in this prospectus supplement.

We estimate the total expenses of this offering, excluding the placement agent's fees, will be approximately \$130,000. Because there is no minimum offering amount required as a condition to closing in this offering, the actual offering amount, the placement agent's fees and net proceeds to us, if any, in this offering may be substantially less than the total maximum offering amounts set forth above. We are not required to sell any specific number or dollar amount of securities offered in this offering, but the placement agent will use its best efforts to arrange for the sale of all of the securities offered. Pursuant to an escrow agreement among us, the placement agent and an escrow agent, some or all of the funds received in payment for the shares of common stock and warrants sold in this offering will be wired to an escrow account and held until we and the placement agent notify the escrow agent that this offering has closed, indicating the date on which the shares of common stock and warrants are to be delivered to the purchasers and the proceeds are to be delivered to us.

Delivery of the shares and warrants is expected to take place on or about June 22, 2011, subject to the satisfaction of certain conditions.

Rodman & Renshaw, LLC

The date of this prospectus supplement is June 17, 2011

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You should rely only on the information contained in this prospectus supplement, the accompanying prospectus or information incorporated here by reference. Neither we nor the placement agent have authorized anyone to provide you with different information. Offers to sell and solicitations of offers to buy our securities are only being made in jurisdictions where offers and sales are permitted. Regardless of the time of delivery of this prospectus supplement or the accompanying prospectus or any sale of our securities hereunder, you should not assume that the information in this prospectus supplement or the accompanying prospectus 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.

For investors outside of the United States, we have not taken any action that would permit this offering or possession or distribution of this prospectus supplement or the accompanying prospectus in any jurisdiction where action for that purpose is required. Persons outside the United States who come into possession of this prospectus supplement or the accompanying prospectus must inform themselves about, and observe any restrictions relating to, the offering of the securities and the distribution of this prospectus supplement and the accompanying prospectus outside of the United States.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement is part of a registration statement that we filed with the U.S. Securities and Exchange Commission (the “SEC”) using a “shelf” registration process. Under this shelf registration statement process, we are offering to sell the securities described herein under this prospectus supplement and the accompanying prospectus. This prospectus supplement provides you with a specific description of the securities that we are selling in this offering and the terms of this offering. This prospectus supplement also adds, updates and changes information contained in the accompanying prospectus. The accompanying prospectus gives more general information, some of which may not apply to this offering. 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 — the statement in the document having the later date modifies or supersedes the earlier statement. You should read both this prospectus supplement and the accompanying prospectus as well as additional information described under “Incorporation of Certain Information by Reference” of this prospectus supplement before investing in our securities.

For further information, we refer to the registration statement and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, including the exhibits to such documents. Statements contained in this prospectus supplement or the accompanying prospectus about the provisions or contents of any agreement or other document are summaries only. If the SEC’s rules and regulations require that an agreement or document be filed as an exhibit to the registration statement or a document incorporated by reference in this prospectus supplement or the accompanying prospectus, please see that agreement or document for a complete description of these matters.

PROSPECTUS SUPPLEMENT SUMMARY

This summary does not contain all of the information you should consider before buying our securities. We urge you to read carefully this entire prospectus supplement, the accompanying prospectus and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus before making an investment decision. In this prospectus supplement, except as otherwise stated or the context otherwise requires, the terms “Cleveland BioLabs” and “CBLI” refer to Cleveland BioLabs, Inc., a Delaware corporation, but not its consolidated subsidiary and “company,” “we,” “us” and “our” refer to Cleveland BioLabs, Inc. and its consolidated subsidiary. Except as otherwise stated or the context otherwise requires, “common stock” refers to the common stock, par value \$0.005 per share, of Cleveland BioLabs, Inc.

You should pay special attention to the “Risk Factors” section of this prospectus supplement, including the risk factors identified in “Item 1A. Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2010 (as it may be updated in our quarterly reports on Form 10-Q and our other filings with the SEC), in determining whether an investment in our securities is appropriate for you.

Our Company

We are a biotechnology company focused on developing biodefense, tissue protection and cancer treatment drugs based on the concept of modulation of cell death for therapeutic benefit. CBLI was incorporated in Delaware and commenced business operations in June 2003. We have devoted substantially all of our resources to the identification, development and commercialization of new types of drugs for protection of normal tissues from exposure to radiation and other stresses, such as toxic chemicals and cancer treatments. Our pipeline includes products from two primary families of compounds: protectans and curaxins. We are developing protectans as drug candidates that protect healthy tissues from acute stresses such as radiation, chemotherapy and ischemia (pathologies that develop as a result of blocking blood flow to a part of the body). Curaxins are being developed by Incuron, LLC, our majority-owned Russian subsidiary, as anticancer agents that could act as mono-therapy drugs or in combination with other existing anticancer therapies.

Our development efforts are based on discoveries made in connection with the investigation of the cell-level process known as apoptosis. Apoptosis is a highly specific and tightly regulated form of cell death that can occur in response to external events such as exposure to radiation or toxic chemicals or to internal stresses. Apoptosis is a major determinant of tissue damage caused by a variety of medical conditions including cerebral stroke, heart attack or acute renal failure. Conversely, apoptosis also is an important protective mechanism that allows the body to shed itself of defective cells, which otherwise can cause cancerous growth.

Research has demonstrated that apoptosis is sometimes suppressed naturally. For example, most cancer cells develop resistance to apoptotic death caused by drugs or natural defenses of the human body. Our research is geared towards identifying the means by which apoptosis can be affected and manipulated depending on the need.

If the need is to protect healthy tissues against an external event such as exposure to radiation, we focus our research efforts on attempting to temporarily and reversibly suppress apoptosis in those healthy tissues, thereby imitating the apoptotic-resistant tendencies displayed by cancer cells. A drug with this effect would also be useful in ameliorating the often severe side effects of anticancer drugs and radiation that cause collateral damage to healthy tissues during cancer treatment. Because the severe toxicities of anticancer drugs and radiation often limit their dosage in cancer patients, an apoptosis suppressant drug may enable a more aggressive treatment regimen using anticancer drugs and radiation and thereby increase their effectiveness.

On the other hand, if the need is to kill cancerous cells, we focus our research efforts on restoring apoptotic mechanisms that are suppressed in tumors so that those cancerous cells will once again become vulnerable to apoptotic death. In this regard, we believe that our drug candidates could have significant potential for improving, and becoming vital to, the treatment of cancer patients.

Our Products and Technology

Through our research and development and our strategic partnerships, we have established a technological foundation for the development of new pharmaceuticals and their rapid preclinical evaluation. We have acquired rights to develop and commercialize the following prospective drugs:

- Protectans are modified factors of microbes that protect cells from apoptosis, and which therefore have a broad spectrum of potential applications. These potential applications include both non-medical applications such as protection from exposure to radiation, whether as a result of military or terrorist action or as a result of a nuclear accident, as well as medical applications such as reducing cancer treatment toxicities.
- Curaxins are small molecules designed to kill tumor cells by simultaneously targeting two regulators of apoptosis. Initial test results indicate that curaxins can be effective against a number of malignancies, including hormone-refractory prostate cancer, renal cell carcinoma, or RCC (a highly fatal form of kidney cancer), and soft-tissue sarcoma.

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In the area of radiation protection, we have achieved high levels of protection in animal models. With respect to cancer treatment, the biology of cancer is such that there is no single drug that can be successfully used to treat a significant proportion of the large number of different cancers and there is wide variability in individual responses to most therapeutic agents. This means that there is a continuing need for additional anticancer drugs for most cancers.

These drug candidates demonstrate the value of our scientific foundation. Based on the expedited review and approval process currently available for drugs qualifying for Fast Track status, we believe that our most advanced drug candidate, Protectan CBLB502, may be approved for such applications within 18-24 months. Another drug candidate, Curaxin CBLC102, demonstrated activity and safety in a Phase IIa clinical trial concluded in late 2008. In November 2010, the first patient was dosed in an ongoing multi-center clinical trial of Curaxin CBLC102 on patients with liver tumors in the Russian Federation.

Recent Developments

On May 31, 2011, we announced that we had concluded advanced stages of contract negotiation with the Biomedical Advanced Research and Development Authority of the Department of Health and Human Services ("BARDA") for the funding of certain development activities relating to CBLB502 in our 2010 proposal to BARDA.

BARDA has indicated that further contract-related negotiations will require clarification of the development path for CBLB502 with the U.S. Food and Drug Administration ("FDA"), which is in the process of actively reviewing our investigational new drug ("IND") application for CBLB502 as part of its recent transfer to a new FDA division. This review, which is an anticipated step in the drug development process, is currently underway. BARDA has indicated that we may resubmit an updated proposal upon confirmation from the FDA that they do not have any objections to us proceeding with our development plan as a result of this review. We are actively working toward obtaining this confirmation in the shortest time period possible. As with any federal contract proposal, there is no assurance that our new proposal will result in an award from BARDA.

Earlier this year, IND100480 for CBLB502 for reducing the risk of death following total body irradiation during or after a radiation disaster was transferred within the FDA from the Division of Biologic Oncology Products to the Division of Medical Imaging Products ("DMIP"), a move consistent with DMIP as the home for evaluation of decorporation agents (i.e. drugs and biologics used to treat individuals exposed to particulate radioactive materials). We are in the process of updating DMIP on the results of the Phase I studies as well as other data from pre-clinical studies to design a larger, definitive Phase II human safety study and the remaining pivotal animal efficacy studies necessary for a Biologic License Application submission in cooperation with the FDA.

Corporate Information

Our principal executive offices are located at 73 High Street, Buffalo, New York 14203, and our telephone number is (716) 849-6810. Our corporate website is <http://www.cbiolabs.com>. The information contained in or accessible from our corporate website is not part of this prospectus supplement.

THE OFFERING

Issuer	Cleveland BioLabs, Inc.
Common Stock offered by us	5,872,500 shares of common stock
Series E Warrants offered by us	Series E Warrants to purchase 1,468,125 shares of our common stock, subject to adjustment in certain circumstances. The Series E Warrants have an initial exercise price of \$4.50 per share, will initially become exercisable on the six month anniversary of issuance and will expire on the twelve month anniversary of issuance. See “Description of Our Warrants.”
Series F Warrants offered by us	Series F Warrants to purchase 1,468,125 shares of our common stock, subject to adjustment in certain circumstances. The Series F Warrants have an initial exercise price of \$5.00 per share, will initially become exercisable on the six month anniversary of issuance and will expire on the five year anniversary of issuance. See “Description of Our Warrants.”
Common Stock outstanding before this offering	29,500,596 shares of common stock
Common Stock outstanding after this offering	35,373,096 shares of common stock
Use of proceeds	We expect to receive net proceeds from this offering of approximately \$22.0 million, after deduction of the placement agent’s fees and estimated expenses payable by us. We intend to use the net proceeds from this offering for general corporate purposes, including, but not limited to, the funding of the continued development of our existing drug portfolio and general working capital. See “Use of Proceeds.”
Nasdaq Capital Market Symbol	CBLI
Transfer Agent	Continental Stock Transfer & Trust Company

The number of shares of common stock to be outstanding after this offering is based on 29,500,596 shares outstanding as of June 16, 2011, and excludes the following as of that date:

- 4,018,093 shares of common stock issuable upon exercise of outstanding options at a weighted-average exercise price of \$5.47 per share.
- The following shares of common stock issuable upon exercise of our outstanding warrants:
 - o 170,000 shares of common stock issuable upon exercise of warrants issued in connection with our initial public offering, which may be exercised at a price of \$8.70 per share.
 - o 50,000 shares of common stock issuable upon exercise of warrants issued in connection with investor relations activities, which may be exercised at a price of \$6.00 per share.

- o 55,000 shares of common stock issuable upon exercise of warrants issued to a financial advisor in connection with certain financing activities, which may be exercised at a price of \$9.19 per share.

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- o 3,918,376 shares of common stock issuable upon exercise of our Series B warrants, which may be exercised at a price of \$5.99 per share. Upon the completion of this offering, the aggregate number of shares issuable upon the exercise of our Series B warrants will increase to 4,096,179 shares and the exercise price will decrease to \$5.73 per share.
- o 464,852 shares of common stock issuable upon exercise of our Series C warrants, which may be exercised at a price of \$6.32 per share. Upon the completion of this offering, the aggregate number of shares issuable upon the exercise of our Series C warrants will increase to 488,015 shares and the exercise price will decrease to \$6.02 per share.
- o 3,591,164 shares of common stock issuable upon exercise of our Series D warrants, which may be exercised at a price of \$1.60 per share.
- o 935,384 shares of common stock issuable upon exercise of our warrants issued in March 2010, which may be exercised at a price of \$4.50 per share. Upon the completion of this offering, the exercise price will decrease to \$4.00 per share.
- o 2,936,250 shares of common stock issuable upon the exercise of the warrants offered hereby, which include (i) 1,468,125 shares of common stock underlying the Series E Warrants and (ii) 1,468,125 shares of common stock underlying the Series F Warrants.
- o 176,175 shares of common stock issuable upon the exercise of warrants to be issued to the placement agent and a financial advisor in connection with this offering.

The shares of common stock issuable upon the exercise of our outstanding warrants and the exercise price in respect thereof are subject to adjustment in certain circumstances.

RISK FACTORS

An investment in our securities is highly speculative, involves a high degree of risk, and should be made only by investors who can afford a complete loss. You should carefully consider and evaluate all of the information included and incorporated by reference in this prospectus supplement and the accompanying prospectus, including the risk factors incorporated by reference from our most recent Annual Report on Form 10-K for the fiscal year ended December 31, 2010, as updated by our Quarterly Reports on Form 10-Q and our other filings with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), filed after such Annual Report. Any of the risks we have described could materially and adversely affect our business, financial condition or operating results and could result in a partial or complete loss of your investment. Further, the risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not currently known to us, or that we currently believe are not material, could also materially and adversely affect our business, financial condition or operating results.

Risks Related to Our Common Stock

Since we have broad discretion in how we use the proceeds from this offering, we may use the proceeds in ways with which you disagree.

We have not allocated specific amounts of the net proceeds from this offering for any specific purpose. Accordingly, our management will have significant flexibility in applying the net proceeds of this offering. You will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used in ways with which you would agree. It is possible that the net proceeds will be invested in a way that does not yield a favorable, or any, return for the Company. The failure of our management to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flow.

The investors in this offering will pay a substantially higher price than the book value of our common stock.

If you purchase shares of our common stock in this offering, you will incur an immediate and substantial dilution in net tangible book value. Our net tangible book value was a deficit of \$(0.37) per share as of March 31, 2011. Assuming the sale by us of all 5,872,500 shares offered hereby (not including the warrant shares as discussed in “Dilution”) at a price to the public of \$4.00 per unit, and after deducting the placement agent’s fees and estimated offering expenses payable by us, our adjusted net tangible book value as of March 31, 2011 would have been approximately \$0.31 per share.

The price of our common stock may be volatile, which may in turn expose us to securities litigation.

Our common stock is listed on the Nasdaq Capital Market. The listing of our common stock on the Nasdaq Capital Market does not assure that a meaningful, consistent and liquid trading market will exist, and in recent years, the market has experienced extreme price and volume fluctuations that have particularly affected the market prices of many smaller companies like us. Our common stock is thus subject to this volatility. Factors that could cause fluctuations include, but are not limited to, the following:

- price and volume fluctuations in the overall stock market from time to time;
- fluctuations in stock market prices and trading volumes of similar companies;

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actual or anticipated changes in our earnings or fluctuations in our operating results or in the expectations of securities analysts;

- general economic conditions and trends;
 - major catastrophic events;
- sales of large blocks of our stock;

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- departures of key personnel;
- changes in the regulatory status of our product candidates, including results of our clinical trials;
 - status of contract and funding negotiations relating to our product candidates;
- events affecting The Cleveland Clinic, Roswell Park Center Institute or any other collaborators;
- announcements of new products or technologies, commercial relationships or other events by us or our competitors;
 - regulatory developments in the United States and other countries;
- failure of our common stock to be listed or quoted on the Nasdaq Capital Market, other national market system or any national stock exchange;
 - changes in accounting principles; and
- discussion of us or our stock price by the financial and scientific press and in online investor communities.

In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has occasionally been brought against that company. In addition to the factors described above, the price of our common stock also could be affected by possible sales of our common stock by investors who view our warrants as a more attractive means of equity participation in our Company and by hedging or arbitrage activity involving our common stock as a result of our warrants. Due to the potential volatility of our stock price, we may therefore be the target of securities litigation in the future. Regardless of its outcome, securities litigation could result in substantial costs and divert management's attention and Company resources from our business.

Sales of additional equity securities may adversely affect the market price of our common stock.

We expect to continue to incur product development and selling, general and administrative costs, and in order to satisfy our funding requirements, we may need to sell additional equity securities. The sale or the proposed sale of substantial amounts of our common stock or other equity securities, such as warrants, or the perception that we may make such a sale, may adversely affect the market price of our common stock. The number of shares of common stock that may be issuable, with or without stockholder approval, may be significant. As a result, such sales or proposed sales, or the perception that we may make such sales, may cause our stock price to decline substantially. Any new securities issued may have greater rights, preferences or privileges than our existing common stock.

Future sales of our shares of common stock may adversely affect the market price of our common stock.

We are currently authorized to issue 80,000,000 shares of our common stock and 10,000,000 of our preferred stock. As of June 16, 2011, we had 29,500,596 shares of common stock issued and outstanding, excluding shares issuable upon the exercise of our outstanding warrants and options, and we had 0 shares of preferred stock outstanding. As of June 16, 2011, we also had 9,184,776 warrants and 4,018,093 options outstanding, of which 3,677,033 options are currently fully vested or vest within the next 60 days.

To the extent that shares of common stock are issued or options and warrants are exercised, holders of our common stock will experience dilution. In addition, in the event of any future issuances of equity securities or securities convertible into or exchangeable for, common stock, holders of our common stock may experience dilution.

Our outstanding warrants contain provisions that, in certain circumstances, could result in the number of shares of common stock issuable upon the exercise of such warrants to increase and/or the exercise price of such warrants to decrease. See “Prospectus Supplement Summary—The Offering” for a discussion of the impact of this offering to our outstanding warrants.

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Moreover, our board of directors is authorized to issue preferred stock without any action on the part of our stockholders. Our board of directors also has the power, without stockholder approval, to set the terms of any such preferred stock that may be issued, including voting rights, conversion rights, dividend rights, preferences over our common stock with respect to dividends or if we liquidate, dissolve or wind up our business and other terms. If we issue preferred stock in the future that has preference over our common stock with respect to the payment of dividends or upon our liquidation, dissolution or winding up, or if we issue preferred stock with voting rights that dilute the voting power of our common stock, the market price of our common stock could decrease. Any provision permitting the conversion of any such preferred stock into our common stock could result in significant dilution to the holders of our common stock.

We also consider from time to time various strategic alternatives that could involve issuances of additional common stock, including but not limited to acquisitions and business combinations, but do not currently have any definitive plans to enter into any of these transactions.

We have no plans to pay dividends on our common stock, and you may not receive funds without selling your common stock.

We have not declared or paid any cash dividends on our common stock, nor do we expect to pay any cash dividends on our common stock for the foreseeable future. We currently intend to retain any additional future earnings to finance our operations and growth and for future stock repurchases and, therefore, we have no plans to pay cash dividends on our common stock at this time. Any future determination to pay cash dividends on our common stock will be at the discretion of our board of directors and will be dependent on our earnings, financial condition, operating results, capital requirements, any contractual restrictions, regulatory and other restrictions on the payment of dividends by our subsidiaries to us, and other factors that our board of directors deems relevant.

Accordingly, you may have to sell some or all of your common stock in order to generate cash from your investment. You may not receive a gain on your investment when you sell our common stock and may lose the entire amount of your investment.

Provisions in our charter documents and Delaware law may inhibit a takeover or impact operational control of our company, which could adversely affect the value of our common stock.

Our certificate of incorporation and bylaws, as well as Delaware corporate law, contain provisions that could delay or prevent a change of control or changes in our management that a stockholder might consider favorable. These provisions include, among others, prohibiting stockholder action by written consent, advance notice for raising business or making nominations at meetings of stockholders and the issuance of preferred stock with rights that may be senior to those of our common stock without stockholder approval. These provisions would apply even if a takeover offer may be considered beneficial by some of our stockholders. If a change of control or change in management is delayed or prevented, the market price of our common stock could decline.

Risks Related to Our Warrants

There is no public market for the warrants to purchase common stock being offered in this offering.

There is no established public trading market for the warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the warrants on any securities exchange. Without an active market, the liquidity of the warrants will be limited.

Holders of our warrants will have no rights as a common stockholder until such holders exercise their warrants and acquire our common stock.

Until you acquire shares of our common stock upon exercise of your warrants, you will have no rights with respect to the shares of our common stock underlying such warrants. Upon exercise of your warrants, you will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference in this prospectus supplement or the accompanying prospectus contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, Section 21E of the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995 and other federal securities laws. These forward-looking statements include information about possible or assumed future results of our business, financial condition, liquidity, results of operations, plans and objectives. The words “may,” “should,” “expect,” “anticipate,” “intend,” “plan,” “continue,” “believe,” “seek,” “project,” “estimate” and similar expressions used in this prospectus supplement, the accompanying prospectus or incorporated in this prospectus supplement or the accompanying prospectus by reference that do not relate to historical facts are intended to identify forward-looking statements. These statements are only predictions. You should not place undue reliance on these forward-looking statements.

Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors. These factors include, among others:

- our history of operating losses and the potential for future losses, which may lead us to not be able to continue as a going concern;
- the adequacy of our cash balances to support our operations for specified periods of time and the nature and level of cash expenditures;
 - our need for substantial additional financing to meet our business objectives;
- the potential for the loss of funding from our government grants and contracts and our ability to win additional funding under such grants and contracts;
 - the risks inherent in the early stages of drug development and in conducting clinical trials;
 - our ability to obtain regulatory approval in a timely manner or at all;
 - our collaborative relationships and the financial risks related thereto;
- the market opportunities for our drug candidates as well as our ability to take advantage of those opportunities and our ability to successfully and timely develop, market and commercialize new products;
 - our ability to comply with our obligations under license agreements;
 - the potential for significant product liability claims; and
- our ability to comply with various safety, environmental and other governmental regulations.

The forward-looking statements are based on management’s beliefs, plans, expectations and assumptions and on information available to us as of the time such statements were made. These beliefs, plans, expectations and assumptions can change as a result of many possible events or factors, not all of which are known to us. Neither we nor any other person assumes responsibility for the accuracy or completeness of these statements. If a change occurs, our business, financial condition, liquidity and results of operations may vary materially from those expressed in our forward-looking statements.

The forward-looking statements in this prospectus supplement, the accompanying prospectus or incorporated in this prospectus supplement or the accompanying prospectus by reference are not representations or guarantees of future performance and involve certain risks, uncertainties and assumptions. Such risks, uncertainties and assumptions include, but are not limited to, any risk factors set forth in our other filings with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act. Many of such factors are beyond our control and are difficult to predict. As a result, our future actions, financial position and results of operations could differ materially from those expressed in any forward-looking statements made by us. Readers are therefore cautioned not to place undue reliance on forward-looking statements. We also do not intend to publicly update any forward-looking statements that may be made from time to time by us or on our behalf, whether as a result of new information, future events or otherwise.

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USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately \$22.0 million after deducting the placement agent's fees and estimated offering expenses. This amount does not include the proceeds which we may receive in connection with the exercise of the warrants. We intend to use the net proceeds from this offering for general corporate purposes, including, but not limited to, the funding of the continued development of our existing drug portfolio and general working capital.

Pending application of such proceeds, we expect to invest the proceeds in short-term, interest-bearing, investment-grade marketable securities or money market obligations.

We cannot estimate precisely the allocation of the net proceeds from this offering among these uses. The amounts and timing of the expenditures may vary significantly, depending on numerous factors, including the amount of cash, if any, generated internally from operations and the terms and availability of financing arrangements, as well as the amount of cash used in our operations. Our management will have broad discretion in the application of the net proceeds of this offering. We reserve the right to change the use of proceeds as a result of certain contingencies such as competitive or economic developments and other factors.

DILUTION

Our net tangible book value as of March 31, 2011 was a deficit of approximately \$(11.0 million), or \$(0.37) per share of common stock. Net tangible book value per share is calculated by subtracting our total liabilities from our total tangible assets, which is total assets less intangible assets, and dividing this amount by the number of shares of common stock outstanding. After giving effect to the sale by us of the 5,872,500 shares of common stock offered in this offering (not including the warrant shares as discussed below), at a public offering price of \$4.00 per share and after deducting the placement agent's fees and estimated offering expenses payable by us, our net tangible book value as of March 31, 2011 would have been approximately \$11.0 million, or \$0.31 per share of common stock. This represents an immediate increase in net tangible book value of \$0.68 per share to our existing stockholders and an immediate and substantial dilution of \$3.69 per share to new investors. The following table illustrates this per share dilution:

Offering price per share	\$4.00
Net tangible book value per share as of March 31, 2011	\$(0.37)
Increase per share after the offering	\$0.68
Net tangible book value per share after this offering	\$0.31
Dilution per share to the new investors	\$3.69

The foregoing table does not take into account further dilution to new investors that could occur upon the exercise of outstanding options and warrants having a per share exercise price less than the per share offering price to the public in this offering. As of March 31, 2011, there were 29,377,293 shares of common stock outstanding, which does not include:

- 3,876,957 shares of common stock issuable upon exercise of outstanding options at a weighted-average exercise price of \$4.90 per share.
 - The following shares of common stock issuable upon exercise of our outstanding warrants:
 - o 170,000 shares of common stock issuable upon exercise of warrants issued in connection with our initial public offering, which may be exercised at a price of \$8.70 per share.
 - o 50,000 shares of common stock issuable upon exercise of warrants issued in connection with investor relations activities, which may be exercised at a price of \$6.00 per share.
 - o 55,000 shares of common stock issuable upon exercise of warrants issued to a financial advisor in connection with certain financing activities, which may be exercised at a price of \$9.19 per share.
 - o 3,933,836 shares of common stock issuable upon exercise of our Series B warrants, which may be exercised at a price of \$5.99 per share. Upon the completion of this offering, the aggregate number of shares issuable upon the exercise of our Series B warrants will increase to 4,076,753 shares and the exercise price will decrease to \$5.73 per share.
 - o 464,852 shares of common stock issuable upon exercise of our Series C warrants, which may be exercised at a price of \$6.32 per share. Upon the completion of this offering, the aggregate number of shares issuable upon the exercise of our Series C warrants will increase to 488,015 shares and the exercise price will decrease to \$6.02 per share.

o

3,494,524 shares of common stock issuable upon exercise of our Series D warrants, which may be exercised at a price of \$1.60 per share.

- o 935,384 shares of common stock issuable upon exercise of our warrants issued in March 2010, which may be exercised at a price of \$4.50 per share. Upon the completion of this offering, the exercise price will decrease to \$4.00 per share.
- o 2,936,250 shares of common stock issuable upon the exercise of the warrants offered hereby, which include (i) 1,468,125 shares of common stock underlying the Series E Warrants and (ii) 1,468,125 shares of common stock underlying the Series F Warrants.
- o 176,175 shares of common stock issuable upon the exercise of warrants to be issued to the placement agent and a financial advisor in connection with this offering.

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The shares of common stock issuable upon the exercise of our outstanding warrants and the exercise price in respect thereof are subject to adjustment in certain circumstances.

To the extent that any options or warrants are exercised, new options are issued under our stock option or stock incentive plans, or we otherwise issue additional shares of common stock in the future, there will be further dilution to the new investors.

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DESCRIPTION OF OUR COMMON STOCK

The material terms and provisions of our common stock and each other class of our securities which may qualify or limit the rights and privileges of our common stock are described under the captions “Description of Our Common Stock” starting on page 9 of the accompanying prospectus.

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DESCRIPTION OF OUR WARRANTS

The following description of the warrants offered hereby is a summary. It summarizes only those aspects of the warrants that we believe will be most important to your decision to invest in the warrants. You should keep in mind, however, that it is the terms in the warrant, and not this summary that define your rights as a holder of the warrants. There may be other provisions in the warrant that are also important to you. You should read the form of warrant for a full description of the terms of the warrants.

Terms Applicable to the Series E Warrants

The Series E Warrants, when exercised in the aggregate, will entitle the holders thereof to purchase up to 1,468,125 shares of our common stock at an exercise price of \$4.50 per share. Prior to the six month anniversary of issuance, the warrants will not be exercisable. Commencing on the six month anniversary of issuance, the warrants will be exercisable, in whole or in part, at any time from time to time until the expiration date, except in circumstances where any limitation on exercise is in effect with respect to a warrant holder's warrants. Unless earlier exercised, the warrants will expire at close of business on the twelve month anniversary of issuance.

Terms Applicable to the Series F Warrants

The Series F Warrants, when exercised in the aggregate, will entitle the holders thereof to purchase up to 1,468,125 shares of our common stock at an exercise price of \$5.00 per share. Prior to the six month anniversary of issuance, the warrants will not be exercisable. Commencing on the six month anniversary of issuance, the warrants will be exercisable, in whole or in part, at any time from time to time until the expiration date, except in circumstances where any limitation on exercise is in effect with respect to a warrant holder's warrants. Unless earlier exercised, the warrants will expire at close of business on the five year anniversary of issuance.

Terms Applicable to Both the Series E and Series F Warrants

Cashless Exercise

If, at any time after the initial exercise date, there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of the warrant shares, then the holder may exercise its warrants on a cashless basis by having us withhold proportion of the warrant shares being exercised determined by dividing (a) the exercise price by (b) the volume weighted average price of our common stock on the trading day immediately preceding the date on which the warrants are exercised.

Limitations on Exercise

Warrant holders will not have the right to exercise any portion of this warrant to the extent that after giving effect to such exercise, the warrant holder (together with its affiliates and any other persons acting as a group with such warrant holder or such warrant holder's affiliate) would beneficially own in excess of 4.99% of the number of shares of the common stock outstanding immediately after such exercise (the "Beneficial Ownership Limitation"). Upon not less than 61 days' prior notice to us, a warrant holder may increase or decrease the Beneficial Ownership Limitation, provided that the Beneficial Ownership Limitation never exceeds 9.99% of the number of shares of the common stock outstanding immediately after giving effect to the issuance of shares of common stock upon exercise of this warrant. The beneficial ownership of such warrant holder (and such other persons), for purposes of the limitation on exercise of the warrants, will not include shares of common stock which would be issuable upon (i) exercise of the remaining, unexercised portion under the warrant beneficially owned by such warrant holder (and such other persons) and (ii) exercise or conversion of the unexercised or unconverted portion of any of our other securities subject to a limitation

on conversion or exercise analogous to the limitation contained herein beneficially owned by such warrant holder (and such other persons).

Fundamental Transaction

Each of the following transactions are referred to as “Fundamental Transaction”) in the warrants:

- a merger or consolidation involving us;
- a sale, lease, license, assignment, transfer or conveyance of all or substantially all of our assets;
- any purchase offer, tender offer or exchange offer pursuant to which holders of common stock are permitted to sell;

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- tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding common stock;
 - any reclassification, reorganization or recapitalization of our common stock; or
- a stock or share purchase agreement or other business combination whereby another person or group acquires more than 50% of the outstanding shares of common stock.

If the holders of our outstanding common stock are entitled to receive cash, securities or other property for their shares of our common stock upon the occurrence of a Fundamental Transaction, the warrant holders will have the right to receive, for each warrant share into which such holder's warrants would be exercisable immediately prior to the time of the Fundamental Transaction, the consideration that a holder of a share of common stock immediately prior to the Fundamental Transaction would have received. We will cause any successor entity in a Fundamental Transaction in which we are not the survivor to assume in writing all of our obligations under the warrants.

Anti-Dilution Adjustments

The number of shares of common stock issuable upon exercise of the warrants and/or the exercise price will be subject to adjustment in certain events including:

- the payment by us of a stock dividend or other distribution on shares of common stock or any other equity or equity equivalent securities payable in share of common stock,
 - the subdivision of outstanding shares of common stock into a larger number of shares,
- the combination (including by way of reverse stock split) of outstanding shares of common stock into a smaller number of shares,
- the grant, issuance or sale of common stock equivalents or rights to purchase stock, warrants, securities or other property pro rata to stockholders, or
- the distribution by us to all holders of common stock, while the warrants are outstanding, of evidences of our indebtedness or assets or rights to warrants to subscribe for or purchase any security other than common stock.

Amendment

The warrants may be modified or amended, and the observance of any term of this warrant may be waived, with our and the warrant holder's written consent.

Fractional Shares

Any exercise of the warrants will be for a whole number of shares of common stock. No fractional shares or scrip representing fractional shares will be issued upon any exercise of the warrants. Upon exercise of the warrants, if the shares that the warrant holder is entitled to receive include a fractional share of common stock, we will, at our own election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price or round up to the next whole share.

Rights as a Stockholder

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

rights, until they exercise their warrants.

Exchange Listing

We do not plan on making an application to list the warrants on The Nasdaq Capital Market, any national securities exchange or other nationally recognized trading system. The common stock underlying the warrants is listed on the Nasdaq Capital Market.

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PLAN OF DISTRIBUTION

Pursuant to an engagement letter, dated as of June 16, 2011, between us and Rodman & Renshaw, LLC, we have engaged Rodman & Renshaw, LLC as our exclusive placement agent to solicit offers to purchase the units offered by this prospectus supplement. In addition, we have engaged Wunderlich Securities, Inc. as a financial advisor in connection with this transaction. Rodman & Renshaw, LLC is not purchasing any units for its own account in this offering, and is not required to arrange the purchase or sale of any additional specific number or dollar amount of the securities.

Rodman & Renshaw, LLC has agreed to use its reasonable best efforts to arrange for the sale of all of the securities in this offering. There is no requirement that any minimum number of units or dollar amount of units be sold in this offering and there can be no assurance that we will sell all or any of the units being offered. We will enter into securities purchase agreements directly with the investors who purchase securities in this offering. The engagement letter provides that the obligations of Rodman & Renshaw, LLC and the investors are subject to certain conditions precedent, including, among other things, the absence of any material adverse change in our business and the receipt of certain opinions, letters and certificates from us or our counsel.

We currently anticipate that the closing of this offering will take place on or about June 22, 2011, subject to customary closing conditions. Pursuant to an escrow agreement among us, the placement agent and the escrow agent, some or all of the funds received in payment for the securities sold in this offering will be wired to an escrow account and held until we and the placement agent notify the escrow agent that this offering has closed, indicating the date on which the securities are to be delivered to the purchasers and the proceeds are to be delivered to us. On the closing date, the following will occur:

- we will receive funds in the amount of the aggregate purchase price;
- Rodman & Renshaw, LLC, as placement agent, and Wunderlich Securities, Inc., as our advisor, will receive the placement agent fees and warrants in accordance with the terms of the engagement letter; and
- we will deliver the shares of common stock and warrants to the investors.

We have agreed to pay Rodman & Renshaw, LLC an aggregate fee equal to 6.0%, or approximately \$1,409,400, of the gross proceeds of this offering. We have also agreed to reimburse Rodman & Renshaw, LLC for expenses incurred by it in connection with this offering. Such reimbursement will be limited to a maximum of 1.0% of the aggregate gross offering proceeds, but in no event more than \$30,000. Rodman & Renshaw, LLC also will receive warrants to purchase up to 154,875 shares of our common stock, or 3% of the aggregate number of shares of common stock that are sold in the offering with an exercise price of \$5.00 per share (which is 125% of the public offering price per share), an initial exercise date on the six month anniversary of issuance, and an expiration date of June 17, 2015 (the five year anniversary of the effectiveness of this registration statement). We have agreed to pay Wunderlich Securities, Inc. approximately \$170,400 out of the fees of Rodman & Renshaw, LLC and grant to Wunderlich Securities, Inc. a warrant to purchase up to 21,300 shares of our common stock out of the warrants received by Rodman & Renshaw, LLC for its services. Under no circumstances will the fee, commission or discount received by Rodman & Renshaw, LLC or any other member of the Financial Institutions Regulatory Authority, or FINRA, or independent broker-dealer exceed 8% of the gross proceeds to us in this offering or any other offering in the United States pursuant to this prospectus supplement and the accompanying prospectus.

The following table shows the per share and total placement agent fees we will pay in connection with the sale of the units, assuming the purchase of all of the units we are offering.

Per unit placement agent fees	\$0.24
Total	\$1,409,400

We estimate the total expenses of this offering which will be payable by us, excluding the placement agent fees, will be approximately \$130,000 (including the reimbursement to Rodman & Renshaw, LLC). After deducting the fees due to the placement agent and our estimated offering expenses, we expect the net proceeds from this offering to be approximately \$21,950,600.

We have agreed to indemnify Rodman & Renshaw, LLC and certain other persons against certain liabilities, including liabilities under the Securities Act of 1933, as amended, and liabilities arising from breaches of representations and warranties contained in the securities purchase agreement or the engagement letter, as the case may be. We have also agreed to contribute to payments Rodman & Renshaw, LLC may be required to make in respect of such liabilities.

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Rodman & Renshaw, LLC may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by it and any profit realized on the resale of the shares of common stock and warrants sold by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, Rodman & Renshaw, LLC would be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 415(a)(4) under the Securities Act and Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of shares of common stock and warrants by Rodman & Renshaw, LLC acting as principal. Under these rules and regulations, Rodman & Renshaw, LLC:

- may not engage in any stabilization activity in connection with our securities; and
- may not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until it has completed its participation in the distribution.

A copy of the engagement letter, the form of securities purchase agreement we entered into with the purchasers and the form of warrant will be included as exhibits to our current report on Form 8-K that will be filed with the SEC in connection with the consummation of this offering.

The transfer agent for our common stock to be issued in this offering is Continental Stock Transfer & Trust Company located at 17 Battery Place, 8th Floor, New York, NY 10004.

Our common stock is traded on the Nasdaq Capital Market under the symbol “CBLI.”

LEGAL MATTERS

The validity of the securities offered by this prospectus supplement will be passed upon for us by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., New York, New York.

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, 2010, and the effectiveness of our internal control over financial reporting as of December 31, 2010, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Such financial statements have been so incorporated in reliance on the reports of Meaden & Moore, Ltd., given the authority of said firm as experts in auditing and accounting.

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INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

In this prospectus supplement, we “incorporate by reference” the information we file with the SEC, which means that we can disclose important business, financial and other information to you in this prospectus supplement by referring you to the documents containing this information. The information incorporated by reference is considered to be part of this prospectus supplement, and information that we file with the SEC after the date of this prospectus supplement will automatically update and supersede this information. However, any information contained herein shall modify or supersede information contained in documents we filed with the SEC before the date of this prospectus supplement.

We incorporate by reference in this prospectus supplement the documents listed below and any other documents we file with the SEC in the future (other than, in all cases, the portions of those documents deemed to be “furnished” to, and not “filed” with, the SEC) under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act until the offering of all the securities that may be offered by this prospectus supplement is completed:

- our Annual Report on Form 10-K for the year ended December 31, 2010, filed with the SEC on March 15, 2011 (including the portions of our definitive Proxy Statement on Schedule 14A incorporated therein by reference);
- our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2011, filed with the SEC on May 10, 2011;
 - our Current Report on Form 8-K, filed with the SEC on January 14, 2011;
 - our Current Report on Form 8-K, filed with the SEC on May 31, 2011;
 - our Current Report on Form 8-K, filed with the SEC on June 13, 2011;and
- the description of our common stock in Form 8-A, filed with the SEC on July 20, 2006.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available over the Internet at the SEC’s web site at <http://www.sec.gov>. You may also read and copy any document we file with the SEC at its public reference facility:

Public Reference Room
100 F Street, N.E.
Room 1580
Washington, DC 20549

You may also obtain copies of the documents at prescribed rates by writing to the Public Reference Room of the SEC at the above address. Please call 1- 800-SEC-0330 for further information on the operations of the Public Reference Room and copying charges.

We will furnish without charge to each person to whom a copy of this prospectus supplement is delivered, upon written or oral request, a copy of the information that has been incorporated in this prospectus supplement by reference but not delivered with the prospectus supplement (except exhibits, unless they are specifically incorporated in this prospectus supplement by reference). You should direct any requests for copies to:

Cleveland BioLabs, Inc.

73 High Street
Buffalo, New York 14203
Phone: (716) 849-6810
Attention: John A. Marhofer, Jr., Chief Financial Officer

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Filed Pursuant to Rule 424(b)(3)

Registration No. 333-167258

PROSPECTUS

CLEVELAND BIOLABS, INC.

\$90,000,000

Common Stock
Warrants
Units

632,654 Shares of Common Stock
Offered by the Selling Stockholders

We may, from time to time, offer and sell shares of our common stock, par value \$0.005 per share, or warrants to purchase common stock, either separately or in units, to or through one or more underwriters, dealers and agents, or directly to purchasers, on a continuous or delayed basis, at prices and on terms to be determined at the time of the offering, up to a total aggregate dollar amount of \$90,000,000. See “Plan of Distribution” beginning on page 8 in this prospectus. We may also describe the plan of distribution for any particular offering of these securities in any applicable prospectus supplement. If any agents, underwriters or dealers are involved in the sale of any securities in respect of which this prospectus is being delivered, we will disclose their names and the nature of our arrangements with them in a prospectus supplement. The net proceeds we expect to receive from any such sale will also be included in a prospectus supplement.

In addition, the selling stockholders identified in this prospectus may offer and sell up to 632,654 shares of our common stock from time to time under this prospectus and any prospectus supplement, which number represents (i) 462,654 shares of common stock issuable upon the exercise of Series C Warrants (calculated based on the current exercise price of \$6.35 per share), which were issued in our private placement that closed on March 16, 2007, and (ii) 170,000 shares of common stock issuable upon the exercise of warrants issued to designees of the underwriters in our initial public offering, which warrants have an exercise price of \$8.70 per share (the “\$8.70 Warrants”). All of these shares of common stock may be sold by the selling stockholders named in this prospectus, or their respective transferees, pledgees, donees or successors-in-interest. The selling stockholders will receive all proceeds from the sale of the shares of our common stock being offered by the selling stockholders in this prospectus. We will only receive the exercise price of the Series C Warrants or the \$8.70 Warrants upon the exercise in cash of the Series C Warrants or the \$8.70 warrants by the selling stockholders. We are registering the offer and sale of the shares of common stock to satisfy registration rights that we have granted. The shares of common stock to which this prospectus relates may be offered and sold from time to time directly by the selling stockholders or alternatively through ordinary brokerage transactions directly to market makers of our shares or through any other means described in “Plan of Distribution” beginning on page 8 in this prospectus. The shares of common stock may be sold in one or more transactions, at fixed prices, at prevailing market prices at the time of sale or at negotiated prices.

Our common stock is listed on the Nasdaq Capital Market under the symbol “CBLI.” The last reported sales price of our common stock on the Nasdaq Capital Market on June 17, 2010 was \$3.62 per share.

Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page 2 in this prospectus and other information included and incorporated by reference in this prospectus for a discussion of the factors you should carefully consider before deciding to buy shares of our common stock or warrants.

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 June 17, 2010.

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PROSPECTUS SUMMARY

This summary does not contain all of the information you should consider before buying shares of our common stock or warrants. We urge you to read carefully this entire prospectus, the documents incorporated by reference in this prospectus and all applicable prospectus supplements before making an investment decision. In this prospectus, unless the context otherwise requires, the terms “CBLI”, “company”, “we”, “us”, and “our” refer to Cleveland BioLabs, Inc., a Delaware corporation, and, unless the context otherwise requires, “common stock” refers to the common stock, par value \$0.005 per share, of Cleveland BioLabs, Inc.

About this Prospectus

This prospectus is part of a registration statement that we filed with the U.S. Securities and Exchange Commission (the “SEC”) using a “shelf” registration process. Under this shelf process, we may sell shares of our common stock or warrants to purchase common stock, either separately or in units, in one or more offerings up to a total dollar amount of \$90,000,000, and the selling stockholders may from time to time sell up to 632,654 shares of common stock issuable upon exercise of outstanding warrants in one or more offerings. This prospectus provides you with a general description of the securities we or the selling stockholders may offer. Each time we sell shares of our common stock or warrants, we will provide a prospectus supplement that will contain specific information about the securities being offered and the terms of that offering. The prospectus supplement may also add to, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with the additional information described under the heading “Where You Can Find More Information” carefully before making an investment decision.

Our Company

We are a biotechnology, or biotech, company focused on developing biodefense, tissue protection and cancer treatment drugs based on the concept of modulation of cell death for therapeutic benefit. Our goal is to identify and develop new types of drugs for protection of normal tissues from exposure to radiation and other stresses, such as toxic chemicals and for cancer treatment. Our initial target, and most promising opportunity, is to develop a drug to protect humans from the effects of exposure to radiation, whether as a result of military or terrorist acts or as a result of a nuclear accident. Recent acts of terrorism and the proliferation of nuclear weapons programs in rogue states have created a more immediate demand for further research and development, or R&D, in this area. Other potential applications of our drug candidates include reducing the side effects of cancer treatment, destroying tumor cells and generating adult stem cells.

Our development efforts are based on discoveries made in connection with the investigation of the cell-level process known as apoptosis. Apoptosis is a highly specific and tightly regulated form of cell death that can occur in response to external events such as exposure to radiation or toxic chemicals or to internal stresses. Apoptosis is a major determinant of tissue damage caused by a variety of medical conditions including cerebral stroke, heart attack or acute renal failure. Conversely, however, apoptosis also is an important protective mechanism that allows the body to shed itself of defective cells, which otherwise can cause cancerous growth.

Research has demonstrated that apoptosis is sometimes suppressed naturally. For example, most cancer cells develop resistance to apoptotic death caused by drugs or natural defenses of the human body. Our research is geared towards identifying the means by which apoptosis can be affected and manipulated depending on the need.

If the need is to protect healthy tissues against an external event such as exposure to nuclear radiation, we attempt to suppress apoptosis in those healthy tissues, thereby imitating the apoptotic-resistant tendencies displayed by cancer cells. A drug with this effect would also be useful in ameliorating the often severe side effects of anticancer drugs and

radiation that cause collateral damage to healthy tissues during cancer treatment. Because the severe side effects of anticancer drugs and radiation often limit their dosage in cancer patients, an apoptosis suppressant drug may enable a more aggressive treatment regimen using anticancer drugs and radiation and thereby increase their effectiveness.

On the other hand, if the need is to kill cancerous cells, we focus our research efforts on restoring apoptotic mechanisms that are suppressed in tumors so that those cancerous cells will once again become vulnerable to apoptotic death. In this regard, we believe that our drug candidates could have significant potential for improving and becoming vital to the treatment of cancer patients.

Our Products and Technology

Through our R&D, and our strategic partnerships, we have established a technological foundation for the development of new pharmaceuticals and their rapid preclinical evaluation. We have acquired rights to develop and commercialize the following prospective drugs:

- Protectans are modified proteins of microbes and tumors that protect cells from apoptosis, and which therefore have a broad spectrum of potential applications. These potential applications include both non-medical applications such as protection from exposure to radiation, whether as a result of military or terrorist action or as a result of a nuclear accident, as well as medical applications such as reducing cancer treatment toxicities.
- Curaxins are small molecules designed to kill tumor cells by simultaneously targeting two regulators of apoptosis. Initial test results indicate that curaxins can be effective against a number of malignancies, including hormone-refractory prostate cancer, renal cell carcinoma, or RCC (a highly fatal form of kidney cancer), and soft-tissue sarcoma.

In the area of radiation protection, we have achieved high levels of protection in animal models. With respect to cancer treatment, the biology of cancer is such that there is no single drug that can be successfully used to treat 100% or even 50% of all cancer patients. This means that there likely will be a need for additional anticancer drugs for each type of cancer.

These drug candidates demonstrate the value of our scientific foundation. Based on the expedited approval process currently available for non-medical applications such as protection from exposure to radiation, our most advanced drug candidate, Protectan CBLB502, may be approved for such applications within 18-24 months. Another drug candidate, Curaxin CBLC102, demonstrated activity and safety in a Phase IIa clinical trial concluded in late 2008.

RISK FACTORS

An investment in our securities is highly speculative, involves a high degree of risk, and should be made only by investors who can afford a complete loss. You should carefully consider and evaluate all of the information included and incorporated by reference in this prospectus and any applicable prospectus supplement, including the risk factors incorporated by reference from our most recent Annual Report on Form 10-K for the fiscal year ended December 31, 2009, filed with the SEC on March 22, 2010, as updated by our Quarterly Reports on Form 10-Q and our other filings with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), filed after such Annual Report. Any of the risks we have described could materially adversely affect our business, financial condition or operating results and could result in a partial or complete loss of your investment. Further, the risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not currently known to us, or that we currently believe are not material, could also materially adversely affect our business, financial condition or operating results.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference in this prospectus contain forward-looking statements. These forward-looking statements include information about possible or assumed future results of our business, financial condition, liquidity, results of operations, plans and objectives. The words “may,” “should,” “expect,” “anticipate,” “intend,” “plan,” “continue,” “believe,” “seek,” “project,” “estimate” and similar expressions used in this prospectus incorporated in this prospectus by reference that do not relate to historical facts are intended to identify forward-looking statements. These statements are only predictions. You should not place undue reliance on these forward-looking statements. By way of example, statements regarding the following subjects are forward-looking by their nature:

- statements as to the anticipated timing of clinical tests and other business developments;
- statements as to the development of new products and the commercialization of products;
- expectations as to the adequacy of our cash balances to support our operations for specified periods of time and as to the nature and level of cash expenditures; and
- expectations as to the market opportunities for our drug candidates as well as our ability to take advantage of those opportunities.

The forward-looking statements are based on management’s beliefs, plans, expectations and assumptions and on information available to us as of the time such statements were made. These beliefs, plans, expectations and assumptions can change as a result of many possible events or factors, not all of which are known to us. Neither we nor any other person assumes responsibility for the accuracy or completeness of these statements. If a change occurs, our business, financial condition, liquidity and results of operations may vary materially from those expressed in our forward-looking statements.

The forward-looking statements in this prospectus or incorporated in this prospectus by reference are not representations or guarantees of future performance and involve certain risks, uncertainties and assumptions. Such risks, uncertainties and assumptions include, but are not limited to, any risk factors set forth in our other filings with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act or in any supplement to this prospectus. Many of such factors are beyond our control and are difficult to predict. As a result, our future actions, financial position and results of operations could differ materially from those expressed in any forward-looking statements made by us. Readers are therefore cautioned not to place undue reliance on forward-looking statements. We also do not intend to publicly update any forward-looking statements that may be made from time to time by us or on our behalf, whether as a result of new information, future events or otherwise.

USE OF PROCEEDS

We currently intend to use the net proceeds from the sale of the shares of our common stock and warrants and the exercise of our warrants for working capital and general corporate purposes. We will not receive any of the proceeds from the sale of our common stock by the selling stockholders. We will, however, receive the exercise price of the Series C Warrants and the \$8.70 Warrants upon the exercise in cash of the Series C Warrants and the \$8.70 Warrants by the selling stockholders. Any proceeds received by us from the exercise of the Series C Warrants or \$8.70 Warrants will be used for working capital and general corporate purposes.

SELLING STOCKHOLDERS

The shares of common stock being offered by the selling stockholders are issuable upon exercise of the Series C Warrants and the \$8.70 Warrants. We are registering the shares of common stock to satisfy registration rights that we have granted to the selling stockholders, and in order to permit the selling stockholders to offer the shares for resale from time to time.

The Series C Warrants were issued on March 16, 2007 to Sunrise Securities Corp. (“SSC”) and its designees as partial compensation for SSC’s services as lead placement agent in connection with our private placement of Series B Convertible Preferred Stock and Series B Warrants for an aggregate purchase price of approximately \$30,000,000. The Series C Warrants, which had an initial exercise price of \$11.00 per share and were originally exercisable for 267,074 shares of common stock, now have a current exercise price of \$6.35 per share and are exercisable for 462,654 shares of common stock as a result of adjustments required by the antidilution provisions of the Series C Warrants. The Series C Warrants were issued pursuant to the exemption from the registration requirements of the Securities Act of 1933, as amended (the “Securities Act”), available pursuant to Rule 506 under the Securities Act.

The \$8.70 Warrants were issued on July 26, 2006 upon the consummation of our initial public offering for an aggregate purchase price of \$100 to designees of SSC and Roth Capital Partners, the underwriters in our initial public offering. The number of shares underlying the \$8.70 Warrants was calculated to equal an aggregate of 10% of the number of shares sold in our initial public offering, excluding the over-allotment option. The \$8.70 Warrants do not have antidilution provisions. The \$8.70 Warrants were issued pursuant to the Section 4(2) exemption from the registration requirements of the Securities Act.

The table below lists the selling stockholders and other information regarding the beneficial ownership of the shares of common stock by each of the selling stockholders. The column titled “Shares of Common Stock Owned Before the Offering” lists the number of shares of common stock owned by each selling stockholder as of June 14, 2010, assuming conversion of all preferred stock and exercise of all warrants and options, including exercise of all Series C Warrants and \$8.70 Warrants held by the selling stockholders on that date, without regard to any limitations on conversions or exercise. The column titled “Shares of Common Stock Being Offered” lists the shares of common stock being offered pursuant to this prospectus by the selling stockholders (i.e., the shares of common stock underlying their Series C Warrants and \$8.70 Warrants). The column titled “Shares of Common Stock Owned Upon Completion of the Offering” lists the shares of common stock owned by each selling stockholder, assuming the shares of common stock underlying the Series C Warrants and the \$8.70 Warrants have been sold, and the column titled “Percentage of Common Stock Outstanding Upon Completion of the Offering” provides the percentage owned by each selling stockholder of all shares of common stock outstanding, assuming the same.

This prospectus covers the resale of 462,654 shares of common stock issuable upon exercise of Series C Warrants (at the current exercise price of \$6.35 per share) and 170,000 shares of common stock issuable upon exercise of \$8.70 Warrants. Because the number of shares underlying the Series C Warrants is subject to adjustment for dilutive issuances, and because the number of shares underlying the Series C Warrants and \$8.70 Warrants is subject to adjustment for stock splits, stock dividends, reclassifications or similar events, the number of shares of common stock that will actually be issued upon exercise of the Series C Warrants and \$8.70 Warrants may be more or less than the number of shares being offered by this prospectus.

Under the terms of the Series C Warrants and the \$8.70 Warrants, a selling stockholder may not exercise the Series C Warrants or the \$8.70 Warrants to the extent such exercise would cause such selling stockholder, together with its affiliates, to beneficially own a number of shares of common stock that exceeds 9.99% of our then outstanding shares of common stock following such exercise. The entries in the table below do not reflect this limitation. The selling stockholders may sell all, some or none of their shares in this offering. See “Plan of Distribution.”

Name and Address of Selling Stockholder	Shares of Common Stock Owned Before the Offering	Shares of Common Stock Being Offered	Shares of Common Stock Owned Upon Completion of the Offering (1)	Percentage of Common Stock Outstanding Upon Completion of the Offering (2)
Sunrise Securities Corp. (3) 641 Lexington Avenue, 25th Floor New York, New York 10022	647,134	83,150	563,984	2.06%
Amnon Mandelbaum (4) c/o Sunrise Securities Corp. 641 Lexington Avenue, 25th Floor New York, New York 10022	378,624	130,675	247,949	*
David Goodfriend (5) c/o Sunrise Securities Corp. 641 Lexington Avenue, 25th Floor New York, New York 10022	21,513	14,520	6,993	*
Eric Abitbol (6) 201 E. 69 St. #6-O New York, New York 10021	3,773	671	3,102	*
Jeffrey Meyerson (7) c/o Sunrise Securities Corp. 641 Lexington Avenue, 25th Floor New York, New York 10022	43,282	6,248	37,034	*
Lucy DaRita (8) c/o Sunrise Securities Corp. 641 Lexington Avenue, 25th Floor New York, New York 10022	1,733	1,733	0	-
Marcia Kucher (9) c/o Sunrise Securities Corp. 641 Lexington Avenue, 25th Floor New York, New York 10022	5,450	3,950	1,500	*
Nathan Low (10) c/o Sunrise Securities Corp. 641 Lexington Avenue, 25th Floor New York, New York 10022	352,839	251,762	101,077	*
Paul Scharfer (11) 1364 Biscaya Drive Surfside, FL 33154	35,307	23,402	11,905	*

Peter Weprin (12) 225 5th Ave. Apt. 11K New York, New York 10010	420	278	142	*
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Robert Fuchs (13) c/o Sunrise Securities Corp. 641 Lexington Avenue, 25th Floor New York, New York 10022	335	222	113	*
Sam Berger (14) c/o Sunrise Securities Corp. 641 Lexington Avenue, 25th Floor New York, New York 10022	38,021	25,218	12,803	*
Roth Capital Partners, LLC (15) 24 Corporate Plaza Newport Beach, California 92660	82,250	82,250	0	-
Richard B. Stone (16) 44 W. 77th Street New York, NY 10024	1,794	1,794	0	-
Serge Moyal (17) 532 Spring Gate Blvd. Thornhill, Ontario L4J5B7 Canada	3,876	1,281	2,595	*
David Filer (18) 165 East 32nd St., #2F New York, New York 10016	4,400	4,400	0	-
National Securities (19) 1001 4th Ave., 22nd Floor Seattle, Washington 98154	1,100	1,100	0	-

* Less than 1% of outstanding shares.

- (1) We do not know when or in what amounts the selling stockholders may offer common stock for sale. The stockholders may not sell any or all of the shares of common stock offered by this prospectus. Because the stockholders may offer all or some of the shares pursuant to this offering, and because there are currently no agreements, arrangements or understandings with respect to the sale of any of the shares, we cannot estimate the number of the shares that will be held by the stockholders after completion of the offering. However, for purposes of this table, we have assumed that, after completion of the offering, none of the shares covered by this prospectus will be held by the stockholders.
- (2) Based on 26,803,712 shares of our common stock outstanding as of June 14, 2010.
- (3) Shares of common stock owned before the offering includes 45,119 shares of common stock underlying a Series B Warrant owned by Sunrise Securities Corp., 83,150 shares of common stock underlying a Series C Warrant owned by Sunrise Securities Corp., and 518,865 shares of common stock underlying a Series B warrant owned by Sunrise Equity Partners, LP. Level Counter LLC is the general partner of Sunrise Equity Partners, LP. The three managing members of Level Counter LLC are Nathan Low, the sole stockholder of Sunrise Securities Corp. and its president, Amnon Mandelbaum, one of the Managing Directors of Investment Banking at Sunrise Securities Corp., and

Marilyn Adler, who is otherwise unaffiliated with Sunrise Securities Corp., and a unanimous vote of all three persons is required to dispose of the securities of Sunrise Equity Partners, LP. Accordingly, each of such persons may be deemed to have shared beneficial ownership of the securities owned by Sunrise Equity Partners, LP. Such persons disclaim such beneficial ownership. As a result of the relationship of Mr. Low and Mr. Mandelbaum to Sunrise Securities Corp., Sunrise Equity Partners, LP may be deemed to beneficially own the securities owned by Sunrise Securities Corp. and/or Sunrise Securities Corp. may be deemed to beneficially own the securities owned by Sunrise Equity Partners, LP. Sunrise Equity Partners, LP disclaims any beneficial ownership of the securities owned by Sunrise Securities Corp. and Sunrise Securities Corp. disclaims any beneficial ownership of the securities owned by Sunrise Equity Partners, LP.

- (4) Shares of common stock owned before the offering includes 185,019 shares of common stock, 62,930 shares of common stock underlying a Series B Warrant, 103,996 shares of common stock underlying a Series C Warrant, and 26,679 shares of common stock underlying an \$8.70 Warrant
- (5) Shares of common stock owned before the offering includes 6,993 shares of common stock underlying a Series B Warrant, 11,555 shares of common stock underlying a Series C Warrant, and 2,965 shares of common stock underlying an \$8.70 Warrant.
- (6) Shares of common stock owned before the offering includes 2,904 shares of common stock, 198 shares of common stock underlying a Series B Warrant, 389 shares of common stock underlying a Series C Warrant, and 282 shares of common stock underlying an \$8.70 Warrant.
- (7) Shares of common stock owned before the offering includes 3,300 shares of common stock, 33,734 shares of common stock underlying Series B Warrants, 5,599 shares of common stock underlying a Series C Warrant, and 649 shares of common stock underlying an \$8.70 Warrant.
- (8) Shares of common stock owned before the offering includes 1,733 shares of common stock underlying a Series C Warrant.
- (9) Shares of common stock owned before the offering includes 1,500 shares of common stock, 3,465 shares of common stock underlying a Series C Warrant, and 485 shares of common stock underlying an \$8.70 Warrant.
- (10) Shares of common stock owned before the offering includes 101,077 shares of common stock underlying a Series B Warrant, 203,698 shares of common stock underlying Series C Warrants, and 48,064 shares of common stock underlying an \$8.70 Warrant.
- (11) Shares of common stock owned before the offering includes 11,905 shares of common stock underlying a Series B Warrant and 23,402 shares of common stock underlying a Series C Warrant.
- (12) Shares of common stock owned before the offering includes 142 shares of common stock underlying a Series B Warrant, and 278 shares of common stock underlying a Series C Warrant.
- (13) Shares of common stock owned before the offering includes 113 shares of common stock underlying a Series B Warrant and 222 shares of common stock underlying a Series C Warrant.
- (14) Shares of common stock owned before the offering includes 12,803 shares of common stock underlying a Series B Warrant, 25,167 shares of common stock underlying a Series C Warrant, and 51 shares of common stock underlying an \$8.70 Warrant.
- (15) Shares of common stock owned before the offering includes 82,250 shares of common stock underlying an \$8.70 Warrant. Byron Roth, Chief Executive Officer of Roth Capital Partners, LLC, owns 81.2% of CR Financial Holdings Inc., which owns 100% of Roth Capital Partners, LLC. Accordingly, Byron Roth exercises voting and dispositive control over these shares. Byron Roth disclaims beneficial ownership of the securities held by Roth Capital Partners, LLC. Gordon Roth, Chief Financial Officer of Roth Capital Partners, LLC, owns 5.5% of CR Financial Holdings Inc.
- (16) Shares of common stock owned before the offering includes 1,794 shares of common stock underlying an \$8.70 Warrant.

- (17) Shares of common stock owned before the offering includes 2,595 shares of common stock underlying a Series B Warrant, and 1,281 shares of common stock underlying an \$8.70 warrant.
- (18) Shares of common stock owned before the offering includes 4,400 shares of common stock underlying an \$8.70 Warrant.
- (19) Shares of common stock owned before the offering includes 1,100 shares of common stock underlying an \$8.70 Warrant. Leo Satriawan is the Chief Financial Officer of National Securities and exercises voting and dispositive control over these shares. Mr. Satriawan disclaims beneficial ownership of the securities held by National Securities.

PLAN OF DISTRIBUTION

We or the selling stockholders may sell all or a portion of the securities offered through this prospectus through one or more underwriters, broker-dealers or agents. If the securities are sold through underwriters or broker-dealers, we or the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The securities may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions,

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
 - in the over-the-counter market;
 - in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
 - through the writing of options, whether such options are listed on an options exchange or otherwise;
 - 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;
 - short sales;
 - sales pursuant to Rule 144;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
 - a combination of any such methods of sale; and

- any other method permitted pursuant to applicable law.

If the selling stockholders effect such transactions by selling shares of common stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of common stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the shares of common stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of common stock short and deliver shares of common stock covered by this prospectus to close out short positions created after the effective date of the registration statement of which this prospectus is a part and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of common stock to broker-dealers that in turn may sell such shares.

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

The selling stockholders and any broker-dealer participating in the distribution of the shares of common stock may be deemed to be "underwriters" within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of common stock is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of shares of common stock being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling stockholders and any discounts, commissions or concessions allowed or reallocated or paid to broker-dealers.

Under the securities laws of some states, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any selling stockholder will sell any or all of the shares of common stock registered pursuant to the shelf registration statement, of which this prospectus forms a part.

The selling stockholders and any other person participating in such distribution will be subject to applicable provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of common stock by the selling stockholders and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the shares of common stock to engage in market-making activities with respect to the shares of common stock. All of the foregoing may affect the marketability of the shares of common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock.

Once sold under the registration statement, of which this prospectus forms a part, the shares of common stock will be freely tradable in the hands of persons other than our affiliates.

DESCRIPTION OF OUR COMMON STOCK

The following summary describes the material terms of our common stock. It summarizes material provisions of our certificate of incorporation and by-laws and is subject to, and qualified in its entirety by, our certificate of incorporation and by-laws that are included as exhibits to certain of the documents incorporated by reference herein. If we offer shares of our common stock for sale under this prospectus, we will provide a prospectus supplement that describes the terms of the offering, including the number of shares offered and the offering price.

General

Our certificate of incorporation authorizes us to issue 80,000,000 shares of common stock, par value \$.005 per share. As of June 14, 2010, 26,803,712 shares of common stock were issued and outstanding with 2,912,597 shares of common stock reserved for issuance upon exercise of issued and outstanding options and 9,910,763 shares of common stock reserved for issuance upon exercise of issued and outstanding warrants.

Voting

Holders of our common stock are entitled to one vote per share. All actions submitted to a vote of stockholders will be voted on by holders of our common stock.

Dividends

Holders of common stock are entitled to receive cash dividends equally on a per share basis, as if and when the dividends are declared by the board of directors from legally available funds.

Liquidation

After satisfaction of the liquidation preferences of all securities ranking senior to the common stock, the holders of common stock will share with each other on an equal basis in any net assets available for distribution to holders of shares of capital stock upon liquidation.

Other Terms

The rights, preferences and privileges of holders of common stock will be subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock which we may designate and issue in the future.

Common Stockholders

As of June 14, 2010, we had 71 holders of record of our common stock.

Listing of Stock

Our common stock is listed on the NASDAQ Capital Market under the trading symbol "CBLI".

Transfer Agent and Registrar

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

Anti-Takeover Effects of Our Certificate of Incorporation and our By-laws

The authorized but unissued shares of our common stock and our preferred stock will be available for future issuance with limited requirements for the vote or approval of our stockholders. These additional shares may be utilized for a variety of corporate purposes, including future offerings to raise additional capital or corporate acquisitions. The existence of authorized but unissued shares of our common stock and our preferred stock could render more difficult or discourage an attempt to obtain control over us by means of a proxy contest, tender offer, merger or otherwise.

Our certificate of incorporation requires that any action required or permitted to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and may not be effected by a consent in writing. Our certificate of incorporation also requires that special meetings of stockholders be called only by our chairman of our board of directors or the board of directors as a whole. In addition, our by-laws provide that candidates for director may be nominated and other business brought before an annual meeting only by the board of directors or by a stockholder who gives written notice to us no later than 90 days prior to nor earlier than 120 days prior to the first anniversary of the last annual meeting of stockholders. These provisions may have the effect of deterring hostile takeovers or delaying changes in control of our management, which could depress the market price of our common stock.

Directors' Limitation of Liability

Our certificate of incorporation and by-laws include provisions to indemnify the directors and officers to the fullest extent permitted by the Delaware General Corporation Law, including circumstances under which indemnification is otherwise discretionary. We believe that these provisions are necessary to attract and retain qualified persons as directors and officers. We have also obtained directors and officers liability insurance in amounts commensurate with those of similarly situated companies.

Insofar as indemnification for liability arising under the Securities Act may be permitted to our directors, officers and controlling persons as stated in the foregoing provisions or otherwise, we have been advised that, in the opinion of the SEC, this indemnification is against public policy as expressed in the Act and is, therefore, unenforceable.

DESCRIPTION OF OUR WARRANTS

General

The following outlines some of the general terms and provisions of the warrants we may offer. Further terms of the warrants and the applicable warrant agreement will be stated in the applicable prospectus supplement. The following description and any description of the warrants in a prospectus supplement may not be complete and is subject to and qualified in its entirety by reference to the terms and provisions of the relevant warrant agreement.

Warrants may be issued by us independently or together with any other securities and may be attached or separate from such securities. We may issue each series of warrants under a separate warrant agreement to be entered into between us and a warrant agent. If we designate a warrant agent, such warrant agent will act solely as our agent in connection with the warrants of such series and will not assume any obligation or relationship of agency for or with holders or beneficial owners of warrants.

The applicable prospectus supplement will describe the terms of any warrants that we may offer, including the following:

- the title of the warrants;
- the total number of warrants;
- the price or prices at which the warrants will be issued;
- if applicable, the currency or currencies investors may use to pay for the warrants;

- the number of shares of common stock and other rights to be delivered to warrantholders upon exercise of the warrants;
- if applicable, the price at which and the currency or currencies, including composite currencies, in which investors may purchase the underlying securities or other rights purchasable upon exercise of the warrants;
- if applicable, any anti-dilution provisions;
- the date on which the right to exercise the warrants will commence and the date on which the right will expire;

- whether the warrants will be issued in registered form or bearer form;
- information with respect to book-entry procedures, if any;
- if applicable, the minimum or maximum amount of warrants which may be exercised at any one time;
- if applicable, the date on and after which the warrants and the related underlying securities will be separately transferable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- the identity of the warrant agent, if any;
- the procedures and conditions relating to the exercise of the warrants; and
- any other terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

DESCRIPTION OF OUR UNITS

We may issue units comprised of the securities described in this prospectus. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date. The applicable prospectus supplement may describe:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units;
- the terms of the unit agreement governing the units;
- United States federal income tax considerations relevant to the units; and
- whether the units will be issued in fully registered global form.

This summary of certain general terms of units and any summary description of units in the applicable prospectus supplement do not purport to be complete and are qualified in their entirety by reference to all provisions of the applicable unit agreement and, if applicable, collateral arrangements and depository arrangements relating to such units. The forms of the unit agreements and other documents relating to a particular issue of units will be filed with the SEC each time we issue units, and you should read those documents for provisions that may be important to you.

LEGAL MATTERS

The validity of the securities offered by this prospectus will be passed upon for us by Katten Muchin Rosenman LLP, Chicago, Illinois.

EXPERTS

The financial statements as of and for the years ended December 31, 2009 and 2008, incorporated in this prospectus by reference to our Annual Report on Form 10-K for the year ended December 31, 2009, have been so incorporated in reliance on the report of Meaden & Moore, Ltd., an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

In this prospectus, we “incorporate by reference” the information we file with the SEC, which means that we can disclose important business, financial and other information to you in this prospectus by referring you to the documents containing this information. The information incorporated by reference is considered to be part of this prospectus, and information that we file with the SEC after the date of this prospectus will automatically update and supersede this information. However, any information contained herein shall modify or supersede information contained in documents we filed with the SEC before the date of this prospectus.

We incorporate by reference in this prospectus the documents listed below and any other documents we file with the SEC in the future (other than, in all cases, the portions of those documents deemed to be “furnished” to, and not “filed” with, the SEC) under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act until the offering of all the securities that may be offered by this prospectus is completed:

- our Annual Report on Form 10-K for the year ended December 31, 2009, filed with the SEC on March 22, 2010 (including the portions of our definitive Proxy Statement on Schedule 14A incorporated therein by reference);
- our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2010, filed with the SEC on May 14, 2010;
 - our Current Report on Form 8-K, filed with the SEC on January 5, 2010;
 - our Current Report on Form 8-K, filed with the SEC on February 2, 2010;
 - our Current Report on Form 8-K, filed with the SEC on February 16, 2010;
 - our Current Report on Form 8-K, filed with the SEC on February 26, 2010;
 - our Current Report on Form 8-K/A, filed with the SEC on February 26, 2010;
 - our Current Report on Form 8-K, filed with the SEC on June 9, 2010; and
- the description of our common stock in Form 8-A, filed with the SEC on July 20, 2006.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available over the Internet at the SEC's web site at <http://www.sec.gov>. You may also read and copy any document we file with the SEC at its public reference facility:

Public Reference Room
100 F Street, N.E.
Room 1580
Washington, DC 20549

You may also obtain copies of the documents at prescribed rates by writing to the Public Reference Room of the SEC at the above address. Please call 1-800-SEC-0330 for further information on the operations of the Public Reference Room and copying charges.

We will furnish without charge to each person to whom a copy of this prospectus is delivered, upon written or oral request, a copy of the information that has been incorporated in this prospectus by reference but not delivered with the prospectus (except exhibits, unless they are specifically incorporated in this prospectus by reference). You should direct any requests for copies to:

Cleveland BioLabs, Inc.
73 High Street
Buffalo, New York 14203
Phone: (716) 849-6810
Attention: John A. Marhofer, Jr., Chief Financial Officer

CLEVELAND BIOLABS, INC.

5,872,500 Shares of Common Stock
Series E Warrants to Purchase 1,468,125 Shares of Common Stock
Series F Warrants to Purchase 1,468,125 Shares of Common Stock

PROSPECTUS SUPPLEMENT

June 17, 2011

Rodman & Renshaw, LLC
