

CLEVELAND BIOLABS INC
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Registration No. 333-167258

PROSPECTUS

SUBJECT TO COMPLETION, DATED JUNE 15, 2010

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.

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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 warrant holders 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 depositary 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.

\$90,000,000

Common Stock
Warrants
Units

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

PROSPECTUS

June 17, 2010
