

PRESSURE BIOSCIENCES INC
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Registration No. 333-176828

PROSPECTUS SUPPLEMENT

(To Prospectus Dated September 13, 2011)

843 Units

Units Consisting of

One Share of Series D Convertible Preferred Stock and
a Series F Warrant to Purchase Approximately 614 Shares of Common Stock

We are offering 843 Units, with each unit consisting of one share of our Series D Convertible Preferred Stock, par value \$0.01 per share, or Series D Preferred Shares, and a Series F Warrant to purchase approximately 614 shares of common stock, which number of shares is equal to thirty-nine and nine tenths percent (39.9%) of the amount that the holder paid for the Units divided by \$0.65, or Series F Warrant, pursuant to this prospectus supplement and the accompanying prospectus. The purchase price for each Unit is \$1,000.00. Each Series F Warrant will have an exercise price of \$0.81 per share and will be exercisable beginning on the six month anniversary of the date of issuance and expire five years from the initial exercise date. The Units will not be certificated and the Series D Preferred Shares and Series F Warrants will be immediately separable and will be separately transferable immediately upon issuance, but will be purchased together in this offering.

There is no established public trading market for the Series D Preferred Shares and Series F Warrants and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Series D Preferred Shares or the Series F Warrants on any national securities exchange. Our common stock is presently listed and quoted on the NASDAQ Capital Market under the symbol "PBIO." On November 8, 2011, the last reported sale price of our common stock on the NASDAQ Capital Market was \$0.85 per share.

Our business and an investment in our securities include significant risks. See "Risk Factors" beginning on page S-6 of this prospectus supplement and in our Annual Report on Form 10-K for the year ended December 31, 2010, which has been filed with the Securities and Exchange Commission, or SEC, on March 31, 2011, as amended by Amendment No. 1 to Form 10-K on Form 10-K/A filed on May 2, 2011, and is incorporated by reference in this prospectus supplement and the accompanying prospectus.

We have retained Ladenburg Thalmann & Co. Inc. to act as our exclusive placement agent in connection with this offering. The placement agent has no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of securities but will use its best efforts to arrange for the sale of all of the Units. We have agreed to pay the placement agent a cash fee of 8% of gross offering proceeds. See "Plan of Distribution" for more information regarding these arrangements.

	Per Unit	Total
Public offering price	\$ 1,000	\$843,000
Placement agency fees ¹	80	67,440
Proceeds, before expenses, to us	920	775,560

Neither the SEC 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.

The placement agent expects to deliver the Units against payment on or about November 11, 2011.

Ladenburg Thalmann & Co. Inc.

November 10, 2011.

¹See “Plan of Distribution” for a description of the compensation payable to the placement agent.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the terms of the offering of Units and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined together with all documents incorporated by reference. To the extent there is a conflict between the information contained in this prospectus supplement or any “free writing prospectus” we may authorize to be delivered to you, on the one hand, and the information contained in the accompanying prospectus or any document incorporated by reference therein, on the other hand, you should rely on the information in this prospectus supplement or such free writing prospectus, as the case may be, provided that, if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in the accompanying prospectus—the statement in the document having the later date modifies or supersedes the earlier statement.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in this prospectus supplement or the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

You should rely only on the information contained in or incorporated by reference in this prospectus supplement, the accompanying prospectus and any related “free writing prospectus” required to be filed with the SEC. We have not authorized any other person to provide you with additional or different information. If anyone provides you with additional or different information, you should not rely on it. We are not making an offer to sell the Units in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, any such “free writing prospectus” and the documents incorporated by reference herein and therein is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates.

It is important for you to read and consider all information contained in this prospectus supplement and the accompanying prospectus, including the documents we have referred you to in the section entitled “Where You Can Find More Information” below, in the accompanying prospectus and any “free writing prospectus” we may authorize to be delivered to you.

Unless the context otherwise requires, in this prospectus, “Pressure BioSciences,” the “Company,” “we,” “us,” “our” and similar names refer to Pressure BioSciences, Inc. and its wholly owned subsidiary PBI BioSeq, Inc.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

The statements in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference and in any “free writing prospectus” that we have authorized for use in connection with this offering, contain or incorporate by reference certain forward-looking statements within the meaning of Section 27A of the Securities Act, as amended, or the Securities Act, Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and the Private Securities Litigation Reform Act of 1995, that are subject to risks and uncertainties. All statements other than statements of historical facts contained herein, including statements regarding our financial condition, operations, plans, objectives, goals, business strategies, future events, capital expenditures, future results, our competitive strengths, and the trends in our industry are forward-looking statements. The words “believe,” “may,” “could,” “estimate,” “continue,” “anticipate,” “intend,” “should,” “plan,” “expect,” “appear,” “future,” “likely,” “probably,” “s” “potential” and similar expressions, as they relate to us, are intended to identify forward-looking statements.

Forward-looking statements reflect only our current expectations. In any forward-looking statement, where we express an expectation or belief as to future results or events, such expectation or belief is expressed in good faith as of the date of such statement and believed to have a reasonable basis, but there can be no assurance that the statement of expectation or belief will be achieved or accomplished. Our actual results, performance or achievements could differ materially from those expressed in, or implied by, the forward-looking statements due to a number of uncertainties, many of which are unforeseen, including:

- our need for, and our ability to raise, additional equity or debt financing on acceptable terms, if at all;
- our need to take additional cost reduction measures, cease operations or sell our operating assets, if we are unable to obtain sufficient additional financing;
 - the options we may pursue in light of our financial condition;
 - the amount of cash necessary to operate our business;
- the anticipated uses of grant revenue and increased grant revenue in future periods;
- our plans and expectations with respect to our pressure cycling technology (PCT) operations;
- our belief that PCT has achieved initial market acceptance in the mass spectrometry market;
- the expected increase in number of PCT units installed and the increase in revenues from the sale of consumable products and extended service contracts;
 - the expected development and success of new product offerings;
- the potential applications for PCT in, and the demonstration of proof-of-concept of PCT for, pathogen inactivation, protein purification, control of chemical reactions, immunodiagnostics and formalin fixed paraffin embedded tissue preparation, among others;
 - the expected expenses of, and benefits and results from, our research and development efforts;
 - the expected benefits and results from our collaboration programs, strategic alliances and joint ventures;
 - our expectation of obtaining additional research grants from the government in the future;

- our expectations of the results of our development activities funded by government research grants;

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- the potential size of the market for biological sample preparation;
 - general economic conditions;
- the anticipated future financial performance and business operations of our company;
- our reasons for focusing our resources in the market for genomic, proteomic, lipidomic, and small molecule sample preparation;
 - the importance of mass spectrometry as a laboratory tool;
- the advantages of PCT over other current technologies as a method of sample extraction and for other applications, including pathogen inactivation, protein purification, control of chemical reactions and immunodiagnostics;
 - sample preparation may be an impediment to research and discovery;
- the capabilities and benefits of our PCT sample preparation system and consumable products;
- that other laboratory scientists will achieve results comparable to those reported to date by certain research scientists who have published or presented publicly on PCT;
 - our ability to retain our core group of scientific, administrative, and sales personnel; and
- our ability to expand our customer base in sample preparation and for other applications of PCT.

You should read this prospectus supplement, the accompanying prospectus and the documents that we reference herein and therein, as well as the exhibits filed with, or incorporated by reference in the registration statement of which this prospectus supplement and the accompanying prospectus form a part, or the Registration Statement, completely and with the understanding that our actual future results may be materially different from what we expect. In addition, you should refer to the “Risk Factors” section beginning on page S-6 of this prospectus supplement and the risks set forth under “Item 1A. Risk Factors” included in our most recent Annual Report on Form 10-K, which is incorporated by reference in the accompanying prospectus. Because of these factors or others, the forward-looking statements in this prospectus supplement, the accompanying prospectus and the Registration Statement may not prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, if at all. Accordingly, you should not place undue reliance on these forward-looking statements.

You should assume that the information appearing in this prospectus supplement and the accompanying prospectus is accurate as of the date on the front cover of this prospectus supplement or the accompanying prospectus, as the case may be. All subsequent written and oral forward looking statements attributable to us or the persons acting on our behalf are expressly qualified in their entirety by the applicable cautionary statements. We undertake no obligation to update any forward looking statements, whether as a result of new information, future events or otherwise, except as may be required by applicable law or regulation. We qualify all of the information presented in this prospectus supplement and the accompanying prospectus, and particularly our forward-looking statements, by these cautionary statements.

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PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information about us and this offering. This information is not complete and does not contain all the information you should consider before investing in our Units consisting of Series D Preferred Shares and Series F Warrants. You should carefully read this entire prospectus supplement and the entire accompanying prospectus, including the “Risk Factors” section beginning on page S-6 of this prospectus supplement and the financial statements and the other information incorporated by reference in this prospectus supplement and the accompanying prospectus, before making an investment decision.

About Pressure BioSciences, Inc.

Overview

We are focused on solving the challenging problems inherent in biological sample preparation, a crucial laboratory step performed by scientists worldwide working in biological life sciences research. Sample preparation is a term that refers to a wide range of activities that precede most forms of scientific analysis. Sample preparation is often complex, time-consuming, and we believe one of the most error prone steps of scientific research. It is, none-the-less, a ubiquitous laboratory undertaking, the requirements of which drive what we believe is a large and growing worldwide market. We have developed and patented a novel, enabling technology platform that can control the sample preparation process. It is based on harnessing the unique properties of high hydrostatic pressure. This process, called pressure cycling technology, or PCT, uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels (35,000 psi or greater) to safely, conveniently and reproducibly control the actions of molecules in biological samples (e.g., cells and tissues from human, animal, plant, and microbial sources).

Our pressure cycling technology uses internally developed instrumentation that is capable of cycling pressure between ambient and ultra-high levels - at controlled temperatures and specific time intervals - to rapidly and repeatedly control the interactions of bio-molecules (e.g., DNA, RNA, proteins, lipids, and small molecules). Our instrument, the Barocycler®, and our internally developed consumables product line, include PULSE (Pressure Used to Lyse Samples for Extraction) Tubes, other processing tubes, and application specific kits (which include consumable products and reagents) together make up the PCT Sample Preparation System, or PCT SPS.

Corporate Information

We were incorporated in the Commonwealth of Massachusetts in August 1978 as Boston Biomedica, Inc. In September 2004, we completed the asset sale of the Boston Biomedica core business units and began to focus exclusively on the development and commercialization of the PCT platform. Following this change in business strategy, we changed our legal name from Boston Biomedica, Inc. to Pressure BioSciences, Inc., or PBI, and our NASDAQ symbol from BBII to PBIO, and commenced operations as Pressure BioSciences in February 2005.

Our principal executive offices are located at 14 Norfolk Avenue, South Easton, Massachusetts 02375. Our telephone number is (508) 230-1828 and our website address is www.pressurebiosciences.com. Information included or referred to on our website is not a part of this prospectus.

The Offering

For a more complete description of the terms of the Series D Preferred Shares and Series F Warrants included in the Units being offered by this prospectus supplement and the accompanying prospectus, see “Description of Securities” on page S-12 of this prospectus supplement.

Securities offered by us: 843 Units. Each Unit consists of one share of our Series D Convertible Preferred Stock, par value \$0.01 per share, or Series D Preferred Shares, and a Series F Warrant to purchase approximately 614 shares of common stock, which number of shares is equal to thirty-nine and nine tenths percent (39.9%) of the amount that the holder paid for the Units divided by \$0.65, or Series F Warrant. The Units will not be certificated and the Series D Preferred Shares and Series F Warrants will be separable and separately transferable immediately upon issuance. This prospectus supplement also relates to the offering of the shares of our common stock issuable upon conversion of the Series D Preferred Shares and upon exercise of the Series F Warrants.

Description of warrants: The Series F Warrants will be exercisable beginning on the six month anniversary of the date of issuance and expire five years from the initial exercise date at an exercise price of \$0.81 per share.

Shares of Series D Convertible Preferred Stock to be issued and outstanding after this offering: 843 Series D Preferred Shares.

Shares of common stock to be issued and outstanding after this offering: 6,570,147 shares of common stock (assuming none of the Series D Preferred Shares are converted and none of the Series F Warrants are exercised).

Use of proceeds: We currently intend to use the net proceeds from this offering to support the commercialization of our current and future products, to fund our research and development activities, for general working capital needs and to repay certain debt.

Risk Factors: See "Risk Factors" in this prospectus supplement and the accompanying prospectus and "Item 1A. Risk Factors" in our most recent Annual Report on Form 10-K, as the same may be updated from time to time by filings under the Exchange Act that we incorporate by reference herein and in the accompanying prospectus, for a discussion of or reference to important factors you should consider carefully in deciding whether to invest in our securities.

Unless specifically stated otherwise, the information in this prospectus supplement excludes: 880,980 shares of common stock reserved for issuance upon conversion of outstanding shares of Series C Convertible Preferred Stock; 1,503,500 shares of common stock reserved for issuance upon exercise of outstanding stock options, at a weighted average exercise price of \$2.34 per share, as of November 1, 2011; and 4,244,979 shares of common stock reserved for issuance under outstanding warrants to purchase our common stock, at a weighted average exercise price of \$1.42 per share, as of November 1, 2011.

Unless otherwise specifically stated, information throughout this prospectus supplement assumes (i) no exercise of outstanding options or warrants to purchase shares of our common stock and (ii) no conversion of our outstanding preferred stock.

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RISK FACTORS

An investment in our securities involves risks. In consultation with your own financial and legal advisers, you should carefully consider, among other matters, the factors set forth below, as well as the risk factors beginning on page 15 of our Annual Report on Form 10-K for the year ended December 31, 2010, as amended, and any subsequently filed periodic reports which are incorporated by reference in the accompanying prospectus, before deciding whether an investment in our securities is suitable for you. The risks and uncertainties described below and in our Annual Report on Form 10-K and our subsequently filed periodic reports are not the only risks and uncertainties we face. Additional risks and uncertainties not currently known to us or that we currently deem immaterial also may impair our business operations. If any of the following risks actually occur, our business, results of operations and financial condition could suffer. The risks discussed below also include forward-looking statements and our actual results may differ substantially from those discussed in these forward-looking statements.

As of November 1, 2011, we had available cash of approximately \$85,000. We require additional capital to fund our operations and cannot ensure that additional capital will be available on acceptable terms or at all.

We have experienced negative cash flows from operations from our pressure cycling technology business since we commenced our pressure cycling technology operations. As of November 1, 2011, we had available cash of approximately \$85,000 which, based on current projections, and with certain customer payments expected by November 14, 2011, will be sufficient to fund operations until the end of November 2011. We need substantial additional capital to fund our operations.

There is no public market for the Series D Preferred Shares or Series F Warrants to purchase common shares to be sold in this offering.

There is no established public trading market for the Series D Preferred Shares and Series F Warrants being sold in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing the Series D Preferred Shares or Series F Warrants on any securities exchange. Without an active market, the liquidity of these securities will be limited.

As a new investor, you will incur substantial dilution as a result of this offering and future equity issuances.

The per share common stock equivalent conversion price of the Series D Preferred Shares is substantially higher than the net tangible book value per share of our outstanding shares of common stock. On a pro forma basis, after giving effect to the sale of 843 Series D Preferred Shares in this offering and assuming the conversion of all the Series D Preferred Shares sold in this offering (and excluding shares of common stock issuable upon exercise of all outstanding options and warrants, including the Series F Warrants), our net tangible book value as of September 30, 2011 would have been \$843,000, or \$0.10 per share. This represents an immediate increase in net tangible book value of \$0.10 per share to existing shareholders and an immediate dilution in net tangible book value of \$0.55 per common share purchased assuming the conversion of the Series D Preferred Shares, without giving effect to the potential exercise of the Series F Warrants offered by this prospectus supplement. In addition to this offering, we will pursue additional capital to finance our operations. Accordingly, we may conduct future offerings of equity or debt securities. The exercise of outstanding options and warrants and future equity issuances, including future public offerings or future private placements of equity securities, may result in dilution to investors.

Sales of a significant number of shares of our common stock in the public market, or the perception of such possible sales, could depress the market price of our common stock.

Sales of a substantial number of shares of our common stock or other equity-related securities in the public markets, including in an offering of our common stock or preferred stock, could depress the market price of our common stock and impair our ability to raise capital through the sale of additional equity or equity-related securities. We cannot predict the effect that future sales of our common stock or other equity-related securities would have on the market price of our common stock.

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We may allocate the net proceeds from this offering in ways that you and other stockholders may not approve.

We currently intend to use the net proceeds of this offering to support the commercialization of our current and future products, to fund our research and development activities, for general working capital needs and for repayment of up to \$100,000 of the amount outstanding under our existing debt. Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not necessarily improve our operating results or enhance the value of our common stock.

Our share price could be volatile and our trading volume may fluctuate substantially.

The price of our shares of common stock has been and may in the future continue to be volatile, with the sale price fluctuating from a low of \$0.62 to a high of \$2.29 since December 31, 2009. Many factors could have a significant impact on the future price of our shares of common stock, including:

- our inability to raise additional capital to fund our operations, whether through the issuance of equity securities or debt;
 - our failure to successfully implement our business objectives;
 - market acceptance of our products;
 - technological innovations and new commercial products by our competitors;
 - changes in government regulations;
 - general economic conditions and other external factors;
- actual or anticipated fluctuations in our quarterly financial and operating results;
 - our ability to retain our scientific, administrative, and sales personnel;
 - the degree of trading liquidity in our shares of common stock; and
- our ability to meet the minimum standards required for remaining listed on the NASDAQ Capital Market.

A decline in the price of our shares of common stock could affect our ability to raise further working capital and adversely impact our ability to continue operations.

A decline in the price of our shares of common stock could result in a reduction in the liquidity of our common stock and a reduction in our ability to raise capital. Because a significant portion of our operations has been and will continue to be financed through the sale of equity securities, a decline in the price of our shares of common stock could be especially detrimental to our liquidity and our operations. Such reductions and declines may force us to reallocate funds from other planned uses and may have a significant negative effect on our business plans and operations, including our ability to continue our current operations. If the price for our shares of common stock declines, it may be more difficult to raise additional capital. If we are unable to raise sufficient capital, and we are unable to generate funds from operations sufficient to meet our obligations, we will not be able to have the resources to continue our operations.

The market price for our shares of common stock may also be affected by our ability to meet or exceed expectations of analysts or investors. Any failure to meet these expectations, even if minor, may have a material adverse effect on the market price of our shares of common stock.

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If we issue additional securities in the future, it will likely result in the dilution of our shares of existing stockholders.

Our certificate of incorporation authorizes the issuance of up to 20,000,000 shares of common stock and 1,000,000 shares of preferred stock. As of November 1, 2011 we had 6,570,147 shares of common stock issued and outstanding and 88,098 shares of Series C Convertible Preferred Stock issued and outstanding, which shares of Series C Convertible Preferred Stock are convertible into 880,980 shares of common stock. As of November 1, 2011, we had options and warrants to purchase an aggregate of approximately 5,748,479 shares of our common stock outstanding, and had an additional 399,500 shares of common stock reserved for future awards that we may grant under our equity compensation plans. We may need to increase the number of our authorized shares in order to issue additional shares of common stock in the future. From time to time we also may increase the number of shares available for issuance in connection with our equity compensation plans and we may issue awards to our employees and others who provide services to us outside the terms of our equity compensation plans. Our board of directors may fix and determine the designations, rights, preferences or other variations of each class or series of preferred stock and may choose to issue some or all of such shares to provide additional financing in the future.

The issuance of any securities for acquisition, licensing or financing efforts, upon conversion of any preferred stock or exercise of warrants, pursuant to our equity compensation plans, or otherwise may result in a reduction of the book value and market price of the outstanding shares of our common stock. If we issue any such additional securities, such issuance will cause a reduction in the proportionate ownership and voting power of all current stockholders. Further, such issuance may result in a change in control of our Company.

Financial Industry Regulatory Authority (FINRA) sales practice requirements may also limit a stockholder's ability to buy and sell our common stock.

FINRA has adopted rules that require that in recommending an investment to a customer, a broker-dealer must have reasonable grounds for believing that the investment is suitable for that customer. Prior to recommending speculative low priced securities to their non-institutional customers, broker-dealers must make reasonable efforts to obtain information about the customer's financial status, tax status, investment objectives and other information. Under interpretations of these rules, FINRA believes that there is a high probability that speculative low priced securities will not be suitable for at least some customers. FINRA requirements make it more difficult for broker-dealers to recommend that their customers buy our common stock, which may limit your ability to buy and sell our common stock and have an adverse effect on the market for our shares.

We have never paid dividends on our common stock and do not anticipate paying any in the foreseeable future.

We have never declared or paid a cash dividend on our common stock and we do not expect to pay cash dividends in the foreseeable future.

The Series D Preferred Shares being offered pursuant to this prospectus supplement, as well as our shares of Series C Convertible Preferred Stock, are entitled to certain rights, privileges and preferences over our common stock, including the right to receive dividends, in the case of the Series C Convertible Preferred Stock, and a preference upon a liquidation of the Company, which will reduce amounts available for distribution to our common stockholders.

The holders of our shares of Series C Convertible Preferred Stock are entitled to receive a cumulative dividend at the rate of 5% per annum of the purchase price paid for the Series C Convertible Preferred Stock, payable, either in cash or in shares of common stock at our option, semi-annually within 45 days of each of June 30th and December 31st, which commenced on June 30, 2011. If we elect to pay the dividends in cash, we will have less cash available for operations, and less cash available to the holders of common stock upon a liquidation of the Company. For the dividend payments on June 30, 2011, we elected to pay the dividends in common stock for Series A Convertible

Preferred Stock and cash for Series B Convertible Preferred Stock and Series C Convertible Preferred Stock. The common stock payment had a dilutive effect on our common stockholders. If we elect to pay the dividends for Series C Convertible Preferred Stock in common stock, our common stockholders will suffer additional dilution. Further, both the shares of Series C Convertible Preferred Stock and the Series D Preferred

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Shares are entitled to payment prior to payment to the holders of common stock in the event of liquidation of the Company.

Although our shares of Series C Convertible Preferred Stock are junior to the Series D Preferred Shares, such shares of Series C Convertible Preferred Stock are entitled to receive dividends, which could reduce amounts available for distribution to holders of the Series D Preferred Shares.

The holders of our shares of Series C Convertible Preferred Stock are entitled to receive a cumulative dividend at the rate of 5% per annum of the purchase price paid for the Series C Convertible Preferred Stock, payable, either in cash or in shares of common stock at our option, semi-annually within 45 days of each of June 30th and December 31st, which commenced on June 30, 2011. If we elect to pay the dividends in cash, we will have less cash available for operations, and less cash available to the holders of the Series D Preferred Shares upon a liquidation of the Company.

Our common stock may be delisted from The NASDAQ Capital Market, which could negatively impact the price of our common stock, liquidity for our stockholders and our ability to access the capital markets.

Our common stock is listed on The NASDAQ Capital Market. On October 4, 2011, the Company received written notification from the Listing Qualifications Department of the NASDAQ Stock Market LLC, or NASDAQ, stating that our common stock is subject to delisting from The NASDAQ Capital Market, pending the Company's opportunity to request a hearing before a NASDAQ Listing Qualifications Panel. We had previously received letters from NASDAQ on April 13, 2011, advising us that our stockholders' equity for the year ended December 31, 2010 had fallen below the minimum requirement for continued inclusion on The NASDAQ Capital Market and on August 15, 2011, advising us that, for the previous 30 consecutive business days, the bid price of the Company's common stock had closed below the minimum \$1.00 per share requirement for continued inclusion on The NASDAQ Capital Market. We have requested a hearing before the NASDAQ Listing Qualifications Panel, which is scheduled for mid-November. The request for a hearing stays any action with respect to the determination letter and allows us to continue listing our shares of common stock on The NASDAQ Capital Market until a decision is rendered by The NASDAQ Listing Qualifications Panel subsequent to the hearing.

If NASDAQ does not accept our plan to bring the Company into compliance with the stockholders' equity listing standard, if we fail to come into compliance with the minimum \$1.00 per share requirement for continued inclusion on The NASDAQ Capital Market or if we fail to comply with any other listing standards applicable to issuers listed on The NASDAQ Capital Market, our common stock will be delisted from The NASDAQ Capital Market.

Upon delisting from The NASDAQ Capital Market, our common stock would be traded on the over-the-counter bulletin board, or OTC. OTC transactions involve risks in addition to those associated with transactions in securities traded on The NASDAQ Capital Market. Many OTC stocks trade less frequently and in smaller volumes than NASDAQ listed stocks. Accordingly, delisting from The NASDAQ Capital Market could adversely affect the trading price of our common stock, significantly limit the liquidity of our common stock and impair our ability to raise additional funds.

USE OF PROCEEDS

We estimate that our net proceeds from the sale of the Units offered pursuant to this prospectus supplement, excluding the proceeds, if any, from the exercise of the Series F Warrants issued in this offering, will be approximately \$650,000, based upon the public offering price of \$1,000.00 per Unit or (\$0.65 per common stock equivalent of the Series D Preferred Shares) and after deducting the placement agent fees and estimated offering expenses that are payable by us. We anticipate that the net proceeds will fund our operations until February 2012.

We currently intend to use the net proceeds from this offering to support the commercialization of our current and future products, to fund our research and development activities, for general working capital needs and for repayment of up to \$100,000 of the amount outstanding under our existing debt. As of November 1, 2011, our outstanding indebtedness, in the aggregate principal amount of \$412,000, consists of promissory notes with an interest rate of 20% per annum and having an aggregate principal amount of \$200,000 due on February 3, 2012, \$100,000 due on March 7, 2012 and \$112,000 due on March 29, 2012. The proceeds from these promissory notes were used for general working capital purposes.

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 used in our operations. Accordingly, 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 developments and other factors. Pending the uses described above, we may temporarily invest the net proceeds of this offering in short- and medium-term interest-bearing obligations, investment-grade instruments, bank certificates of deposit and government securities until we use them for their stated purpose.

MARKET FOR COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Market Information

Our common stock is presently quoted on The NASDAQ Capital Market under the symbol "PBIO." On November 8, 2011, the last reported sale price of our common stock on The NASDAQ Capital Market was \$0.85 per share. The market for our common stock is limited and volatile. The following table sets forth the range of high and low bid quotations or high and low closing prices, as applicable, for our common stock for each of the periods indicated as reported by The NASDAQ Capital Market. The prices quoted on The NASDAQ Capital Market reflect inter-dealer prices, without retail mark-up, mark-down or commissions. The NASDAQ Capital Market prices listed below may not represent actual transaction prices. There is no established public trading market for the Series D Preferred Shares or the Series F Warrants and we do not expect a market to develop.

	Year Ended December 31, 2011	
	High	Low
First Quarter	\$1.53	\$1.11
Second Quarter	\$1.25	\$0.91
Third Quarter (through November 1, 2011)	\$1.15	\$0.62

	Year Ended December 31, 2010	
	High	Low
First Quarter	\$1.97	\$1.36
Second Quarter	\$1.84	\$1.02
Third Quarter	\$1.77	\$1.09
Fourth Quarter	\$2.29	\$1.24

	Year Ended December 31, 2009	
	High	Low
First Quarter	\$1.23	\$0.55
Second Quarter	\$2.10	\$0.80
Third Quarter	\$1.85	\$1.31
Fourth Quarter	\$1.80	\$1.32

The above table shows only historical comparisons. The comparisons may not provide meaningful information to you in determining whether to purchase our Series D Preferred Shares and Series F Warrants because our Series D Preferred Shares and Series F Warrants are not traded on any exchange. You are urged to obtain current market quotations for our common stock and to review carefully the other information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus.

Holders of Record

As of November 1, 2011, there were approximately 220 holders of record of shares of our common stock.

Dividend Policy

Since our incorporation in Massachusetts in August 1978, we have not paid or declared any cash dividends on our common stock. We currently intend to retain any earnings for future growth and, therefore, do not expect to pay cash dividends on our Series F Preferred Shares or on our common stock in the foreseeable future. However, we are required to pay a dividend on our Series C Convertible Preferred Stock at the rate of 5% per annum of the purchase price paid for the Series C Convertible Preferred Stock, payable, either in cash or in shares of common stock at our option, semi-annually within 45 days of each of June 30 and December 31.

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DILUTION

Our net tangible book value as of September 30, 2011 was (\$532) or (\$0.00) per share of common stock (assuming the conversion of all of our issued and outstanding shares of Series C Convertible Preferred Stock) (and excluding shares of common stock issuable upon exercise of all outstanding options and warrants, including the Series F Warrants). Net tangible book value per share represents total tangible assets less total liabilities, divided by the number of shares of common stock issued and outstanding. After giving effect to the sale of 843 Series D Preferred Shares in this offering and assuming the conversion of all the Series D Preferred Shares sold in the offering (and excluding shares of common stock issuable upon exercise of all outstanding options and warrants, including the Series F Warrants), our net tangible book value as of September 30, 2011 would have been \$843,000, or \$0.10 per share. This represents an immediate increase in net tangible book value of \$0.10 per share to existing common stockholders and an immediate dilution in net tangible book value of \$0.55 per share to investors in this offering (on an as-if-converted, per share common stock equivalent basis). The following table illustrates this calculation.

Series D Preferred Shares conversion price (on a per share common stock equivalent basis)		\$	0.65
Net tangible book value per share as of September 30, 2011	\$	(0.00)	\$
Increase per share attributable to this offering	\$	0.10	\$
As adjusted tangible book value per share after this offering		\$	0.10
Dilution per share to new investors in this offering (on a per share common stock equivalent basis)		\$	0.55

The number of shares of common stock outstanding used in the table and calculations above is based on 6,353,016 shares outstanding as of September 30, 2011 and includes 880,980 shares of common stock reserved for issuance upon conversion of outstanding shares of Series C Convertible Preferred Stock, and excludes 1,503,500 shares of common stock reserved for issuance upon exercise of outstanding stock options, at a weighted average exercise price of \$2.34 per share; 4,210,074 shares of common stock reserved for issuance upon exercise of outstanding warrants to purchase our common stock, at a weighted average exercise price of \$1.42 per share; and 517,472 shares of common stock reserved for issuance upon exercise of the Series F Warrants offered pursuant to this prospectus supplement.

DESCRIPTION OF SECURITIES

This prospectus supplement relates to the sale of Units. Each unit consists of one Series D Preferred Share and a Series F Warrant to purchase approximately 614 shares of common stock, which number of shares is equal to thirty-nine and nine tenths percent (39.9%) of the amount that the holder paid for the Units divided by \$0.65, with an exercise price equal to \$0.81. The terms of the Series D Preferred Shares are described below under the caption "Description of Series D Preferred Shares." The terms of the Series F Warrants are described below under the caption "Description of Series F Warrants."

Authorized Capital

As of November 1, 2011, we currently have authority to issue 20,000,000 shares of common stock and 1,000,000 shares of preferred stock. In connection with the offering, we anticipate authorizing 850 Series D Preferred Shares. Of the 1,000,000 shares of preferred stock, we previously designated 20,000 shares as Series A Junior Participating Preferred Stock, 313,960 shares as Series A Convertible Preferred Stock, 279,256 shares as Series B Convertible Preferred Stock and 88,098 shares as Series C Convertible Preferred Stock. On or about September 30, 2011, all then remaining issued and outstanding shares of Series A Convertible Preferred Stock and Series B

Convertible Preferred Stock were voluntarily converted into shares of common stock. As of November 1, 2011, there were 6,570,147 shares of common stock outstanding and 88,098 shares of Series C Convertible Preferred Stock outstanding. As of November 1, 2011, there were no shares of Series D Convertible Preferred Stock, Series A Junior Participating Preferred Stock, Series A Convertible Preferred Stock or Series B Convertible Preferred Stock issued and outstanding.

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Series D Preferred Shares

Our restated articles of organization authorize 1,000,000 shares of preferred stock. Our board of directors is authorized, without further stockholder action, to establish various classes or series of shares of preferred stock from time to time and to determine the rights, preferences and privileges of any unissued class or series including, among other matters, any dividend rights, dividend rates, conversion rights, voting rights, terms of redemption (including sinking fund provisions), redemption price or prices, liquidation preferences, the number of shares constituting any such class or series, and the designation of such class or series, and to issue any such shares. Our board of directors may, without shareholder approval, issue additional classes or series of shares of preferred stock with voting and conversion rights which could adversely affect the voting power of the holders of the shares of common stock or the Series D Preferred Shares, except as prohibited by the certificate of designation of preferences, rights and limitations of Series D Preferred Shares, or certificate of designation.

In connection with the completion of this offering, we expect our board of directors to adopt resolutions which would authorize 850 shares of a new class of shares designated Series D Convertible Preferred Stock, or Series D Preferred Shares. The material terms and provisions of the Series D Preferred Shares are summarized below. This summary is not a complete description of the terms of the Series D Preferred Shares. For the complete terms of the Series D Preferred Shares, you should refer to the form certificate of designation which is incorporated by reference into the registration statement of which this prospectus supplement is a part.

Voting Rights

Except as required by law, holders of the Series D Preferred Shares will not have rights to vote on any matters, questions or proceedings, including the election of directors. However, as long as any of the Series D Preferred Shares are issued and outstanding, we will not, without the affirmative vote of the holders of a majority of the then outstanding Series D Preferred Shares, (1) alter or change adversely the powers, preferences or rights given to the Series D Preferred Shares or alter or amend the certificate of designation, (2) authorize or create any class of shares ranking as to dividends, redemption or distribution of assets upon liquidation senior to, or otherwise pari passu with, the Series D Preferred Shares, (3) amend our articles of organization in any manner that adversely affects any rights of the holders of Series D Preferred Shares, (4) increase the number of authorized Series D Preferred Shares, or (5) enter into any agreement with respect to any of the foregoing.

Conversion

Subject to certain ownership limitations as described below, the Series D Preferred Shares are convertible at any time and from time to time at the option of the holder into our shares of common stock at a conversion ratio determined by dividing the stated value of the Series D Preferred Shares (or \$1,000), subject to increase as set forth in the "Dividend" section below, by a conversion price of \$0.65 per share, or the conversion ratio. Accordingly, each Series D Preferred Share is initially convertible into 1,538.46 shares of common stock (with the Company having the discretion either to round up to the next whole number of shares of common stock or to pay cash instead of any fraction of a share of common stock; no fractional shares of common stock will be issued). The conversion price is subject to adjustment in the case of stock splits, stock dividends, combinations of shares and similar recapitalization transactions. The conversion price is also subject to adjustment in the event that the Company issues any shares of common stock or common stock equivalents at a per share price that is lower than the conversion price for the Series D Preferred Shares then in effect. Upon any such issuance at a lower price, the conversion price will be reduced to the per share price at which such shares of common stock or common stock equivalents are issued. No adjustment in the conversion price will be made for issuances of common stock under the Company's stock option plans or upon conversion or exercise of options, warrants or shares of Series C Convertible Preferred Stock outstanding as the date on which the Series D Preferred Shares are first issued.

If at any time following the six-month anniversary of the closing of the offering, our shares of common stock trade on The Nasdaq Capital Market, the OTC Bulletin Board or any other designated stock exchange (or any successors to any of these trading markets), or the trading markets, with a per share sale price at any time during the day on which the principal trading market is open for business of at least 300% of the then effective conversion price for at least 20 trading days during a 30 consecutive day trading period and the volume for each trading day during such 30 consecutive trading day period exceeds \$50,000, then we may elect to cause all of the outstanding Series D Preferred Shares to convert into the number of shares of common stock (subject to certain beneficial ownership limitations) at the then current conversion ratio. In such event, within one trading day, we will deliver a

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written notice to all holders of Series D Preferred Shares requiring each holder to convert all or part of such holder's Series D Preferred Shares, plus all accrued but unpaid dividends thereon and all liquidated damages and other amounts due in respect of the Series D Preferred Shares, into shares of common stock at the then current conversion ratio.

Subject to limited exceptions, a holder of Series D Preferred Shares will not have the right to convert, and the Company will not have the right to force such holder to convert, any portion of its Series D Preferred Shares if the holder, together with its affiliates and any persons acting as a group together with such holder or any of such holder's affiliates, would beneficially own in excess of 4.99% (or 9.99% as elected by the holder pursuant to the terms of the certificate of designation) of the number of our shares of common stock outstanding immediately after giving effect to its conversion. Prior to receiving stockholder approval for the issuance of the shares of common stock issuable upon conversion of the Series D Preferred Shares and upon exercise of the Series F Warrants in the aggregate in excess of 19.9% of the issued and outstanding shares of common stock, the Series D Preferred Shares may not be converted to the extent such conversion, when aggregated with the issuance of any shares of common stock issued upon exercise of the Series F Warrants and any warrants issued to our placement agent or other registered broker-dealers in connection with this offering, would cause the issuance of in excess of 1,307,460 shares of common stock, or 19.9% the number of issued and outstanding shares of common stock on the date on which the Series D Preferred Shares are first issued.

In addition, in the event we consummate a merger or consolidation with or into another person or other reorganization event in which our shares of common stock are converted or exchanged for securities, cash or other property, or we sell, lease, license or otherwise dispose of all or substantially all of our assets or we or another person acquire 50% or more of our outstanding shares of common stock, then following such event, the holders of the Series D Preferred Shares will be entitled to receive upon conversion of the Series D Preferred Shares the same kind and amount of securities, cash or property which the holders of the Series D Preferred Shares would have received had they converted the Series D Preferred Shares immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the Series D Preferred Shares.

Dividends

We may not pay any dividends on shares of our common stock unless we also pay dividends on the Series D Preferred Shares in the same form and amount, on an as-if-converted basis, as dividends actually paid on shares of our common stock. Except for such dividends, no other dividends may be paid on the Series D Preferred Shares.

Liquidation

The Series D Preferred Shares will rank, with respect to rights upon liquidation, winding-up or dissolution, (1) senior to our shares of common stock and common stock equivalents and (2) senior to any series of preferred stock ranked junior to the Series D Preferred Shares, including shares of our Series C Convertible Preferred Stock. Further, upon any liquidation, dissolution or winding up of the Company, after payment or provision for payment of debts and other liabilities of the Company, and before any distribution or payment is made to the holders of any junior securities, the holders of Series D Preferred Shares shall first be entitled to be paid out of the assets of the Company available for distribution to its stockholders an amount equal to \$1,000 per share, subject to certain adjustment for accrued but unpaid dividends, after which any remaining assets of the Company shall be distributed among the holders of the other classes or series of shares in accordance with the Company's articles of organization. If the assets of the Company are insufficient to pay in full such amounts to the holders of the Series D Preferred Shares, then the entire assets to be distributed to the holders of Series D Preferred Shares will be ratably distributed among the holders in accordance with the respective amounts that would be payable on such shares if all amounts payable thereon were paid in full.

Series F Warrants

The material terms and provisions of the Series F Warrants being offered pursuant to this prospectus supplement are summarized below. This summary is not a complete description of the terms of the Series F Warrants. For the complete terms of the Series F Warrants, you should refer to the form of the Series F Warrants which is incorporated by reference into the registration statement of which this prospectus supplement is a part.

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Each Unit offered pursuant to this prospectus supplement includes one Series F Warrant to purchase approximately 614 shares of common stock, which number of shares is equal to thirty-nine and nine tenths percent (39.9%) of the amount that the holder paid for the Units divided by \$0.65. Series F Warrants will entitle the holder to purchase shares of common stock for an exercise price equal to \$0.81 per share, subject to adjustments described in the Series F Warrants. Subject to certain limitations as described below, the Series F Warrants are exercisable at the option of the holder beginning on the six month anniversary of the date of issuance and will expire and entitle the holder to a cashless exercise five years from the initial exercise date, or sooner as described below.

Subject to limited exceptions, a holder of Series F Warrants will not have the right to exercise any portion of its Series F Warrants if the holder, together with its affiliates, would beneficially own in excess of 4.99% (or 9.99% as elected by the holder pursuant to the terms of the Series F Warrant) of the number of our shares of common stock issued and outstanding immediately after giving effect to such exercise.

The exercise price and the number of shares of common stock issuable upon exercise of the Series F Warrants is subject to appropriate adjustment in the event of recapitalization events, stock dividends, stock splits, stock combinations, reclassifications, reorganizations or similar events affecting our shares of common stock, and also upon any distributions of assets, including cash, shares or other property to our shareholders.

The exercise price is also subject to adjustment in the event that the Company issues any shares of common stock or common stock equivalents at a per share price that is lower than the exercise price for the Series F Warrants then in effect. Upon any such issuance, the exercise price will be reduced to the per share price at which such shares of common stock or common stock equivalents are issued. No adjustment in the exercise price will be made for issuances of common stock under the Company's stock option plans or upon conversion or exercise of options, warrants or shares of Series C Convertible Preferred Stock outstanding on the date on which the Series D Preferred Shares are first issued.

The warrant holders may pay the exercise price by wire transfer or cashier's check drawn on a United States bank unless such holders are utilizing the cashless exercise provisions of the Series F Warrants. The Series F Warrants may be exercised by cashless exercise at the expiration of the Series F Warrant, and sooner, if at the time of exercise there is no effective registration statement for the shares issuable upon exercise or the prospectus constituting a part of the registration statement is not available for the issuance of such shares. At the close of business on the applicable expiration date, any unexercised Series F Warrants will be void.

Prior to receiving stockholder approval for the issuance of the shares of common stock issuable upon conversion of the Series D Preferred Shares and upon exercise of the Series F Warrants in the aggregate in excess of 19.9% of the issued and outstanding shares of common stock, the Series F Warrants may not be exercised to the extent such exercise, when aggregated with the number of shares of common stock issued upon conversion of the Series D Preferred Shares and upon exercise of any warrants issued to our placement agent or other registered broker-dealers in connection with this offering, would cause the issuance of in excess of 1,307,460 shares of common stock, or 19.9% of the number of issued and outstanding shares of common stock on the date on which the Series D Preferred Shares are first issued.

In addition, in the event we consummate a merger or consolidation with or into another person or other reorganization event in which our shares of common stock are converted or exchanged for securities, cash or other property, or we sell, lease, license or otherwise dispose of all or substantially all of our assets or we or another person acquire 50% or more of our outstanding shares of common stock, then following such event, the holders of the Series F Warrants will be entitled to receive upon exercise of the Series F Warrants the same kind and amount of securities, cash or property which the holders would have received had they exercised the Series F Warrants immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the Series F

Warrants.

Upon a holder's exercise of a Series F Warrant, we will issue the shares of common stock issuable upon exercise of the Series F Warrant within three business days following our receipt of notice of exercise and payment of the exercise price. Prior to the exercise of any Series F Warrants to purchase shares of common stock, holders of the Series F Warrants will not have any of the rights of holders of the shares of common stock purchasable upon exercise, including the right to vote or to receive any payments of dividends on the shares of common stock purchasable upon exercise.

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PLAN OF DISTRIBUTION

Ladenburg Thalmann & Co. Inc., which we refer to herein as the placement agent, has agreed to act as our exclusive placement agent in connection with this offering subject to the terms and conditions of the Placement Agency Agreement dated November 8, 2011. The placement agent is not purchasing or selling any Units offered by this prospectus nor is it required to arrange the purchase or sale of any specific number or dollar amount of Units, but has agreed to use its best efforts to arrange for the sale of all of the Units offered hereby. Therefore, we will enter into a securities purchase agreement directly with investors in connection with this offering. There can be no assurance that we will sell the entire amount of Units pursuant to this prospectus supplement.

Confirmations and definitive prospectuses will be delivered, or otherwise made available, to all purchasers who agree to purchase Units, informing the purchasers of the closing date as to such Units. Purchasers will also be informed of the date and manner in which they must transmit the purchase price for their Units.

On such closing date, the following will occur:

- we will receive funds in the amount of the aggregate purchase price of the Units being sold by us on such closing date;
- we will deliver to the purchasers the Series D Preferred Shares and the Series F Warrants being sold on such closing date; and
- we will pay the placement agent a placement agent fee in accordance with the terms of our Placement Agency Agreement.

We have agreed to pay the placement agent a placement agent's cash fee equal to 8% of the gross proceeds of the offering. The maximum aggregate gross proceeds of the offering is \$843,000.

The following table shows the per Unit and total placement agent's fees we will pay to the placement agent in connection with the sale of the Series D Preferred Shares and Series F Warrants offered pursuant to this prospectus supplement, assuming the purchase of all of the Units offered hereby.

Per Unit placement agent's fees	\$ 80
Maximum offering total placement agent's fees	\$ 67,440

Because there is no minimum offering amount required as a condition to the closing in this offering, the actual total offering placement agent's fees, if any, are not presently determinable and may be substantially less than the maximum amount set forth above.

Our obligations to issue and sell Units to the purchasers is subject to the conditions set forth in the securities purchase agreement, which may be waived by us at our discretion. A purchaser's obligation to purchase Units is subject to the conditions set forth in the securities purchase agreement as well, which may be waived by the purchaser.

We have agreed to indemnify the placement agent against certain liabilities, including liabilities under the Securities Act. We may also be required to contribute to payments the placement agent may be required to make in respect of such liabilities.

We are offering pursuant to this prospectus supplement up to 843 Units, but there can be no assurance that the offering will be fully subscribed. Accordingly, we may sell substantially less than the 843 Units, in which case our net

proceeds would be substantially reduced and the total placement agent fees may be substantially less than the maximum total set forth above. The conversion price of the Series D Preferred Shares and the exercise prices for the Series F Warrants will depend upon market conditions and will be determined by our board of directors after consulting with our placement agent for this offering.

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We estimate the total offering expenses of this offering that will be payable by us, excluding the placement agent's fees and expenses, will be approximately \$125,000, which includes our registration, legal, accounting, printing costs and various other fees.

The foregoing does not purport to be a complete statement of the terms and conditions of the Placement Agency Agreement with the placement agent and the securities purchase agreement. A copy of the form of securities purchase agreement with the investors which is incorporated by reference into the registration statement of which this prospectus supplement forms a part. See "Where You Can Find More Information" on page S-18 of this prospectus supplement.

The placement agent 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 Units sold by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, the placement agent would be required to comply with 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, Series D Preferred Shares and Series F Warrants by the placement agent acting as principal. Under these rules and regulations, the placement agent:

- 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.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the reporting requirements of the Exchange Act, and we file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy the reports, proxy statements and other information that we file at the SEC's Public Reference Room at 100 F Street NE, Washington, D.C. 20549 at prescribed rates. Information on the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. Our filings are also available free of charge at the SEC's website at <http://www.sec.gov>.

We have filed with the SEC a registration statement on Form S-3 (Registration File No. 333-176828) covering the securities offered by this prospectus supplement. This prospectus supplement does not contain all of the information contained or incorporated by reference in the registration statement. For more information about us and our securities, you should read the registration statement and its exhibits. Copies of the registration statement, including its exhibits, may be inspected without charge at the offices of the SEC or obtained at prescribed rates from the Public Reference Room of the SEC at 100 F Street NE, Washington, D.C. 20549. Copies of the registration statement may be obtained without charge at the SEC's website.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" the information we file with the SEC, which means that we can disclose important information to you by referring you to those documents. 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 may supersede this information. We are incorporating by reference into this prospectus supplement the documents listed below:

- our annual report on Form 10-K for the fiscal year ended December 31, 2010 filed on March 31, 2011, as amended on Form 10-K/A to the annual report on Form 10-K for the fiscal year ended December 31, 2010 filed on May 2, 2011;
 - our quarterly report on Form 10-Q for the quarter ended March 31, 2011 filed on May 16, 2011;
 - our quarterly report on Form 10-Q for the quarter ended June 30, 2011 filed on August 15, 2011;
- our current reports on Form 8-K filed on April 12, 2011, April 29, 2011, June 15, 2011, June 21, 2011, August 9, 2011, August 11, 2011, August 19, 2011, September 9, 2011, October 5, 2011, October 6, 2011, October 7, 2011 and October 21, 2011;
- the description of our common stock contained in our Registration Statement on Form 8-A (File No. 0-21615) filed with the SEC under Section 12 of the Exchange Act), including any amendments or reports filed for the purpose of updating such description in which there is described the terms, rights and provisions applicable to our common stock; and
- all documents that we file under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement until we terminate this offering.

We do not incorporate by reference any information furnished pursuant to Items 2.02 or 7.01 of a current report on Form 8-K, unless specifically stated otherwise in such current reports or in our future filings under the Exchange Act. Any statement contained in a document incorporated by reference in this prospectus supplement shall be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this

prospectus supplement, or in any other subsequently filed document which is incorporated by reference modifies or supersedes such statement.

You can obtain copies of any of the documents incorporated by reference in this prospectus supplement from us or, as described above, through the SEC or the SEC's web site at <http://www.sec.gov>. Documents incorporated by reference are available from us, without charge, excluding all exhibits unless specifically

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incorporated by reference in the documents. You may obtain documents incorporated by reference in this prospectus supplement by writing to us at the following address or by calling us at the telephone number listed below:

Pressure BioSciences, Inc.
14 Norfolk Avenue
South Easton, MA 02375
Attention: Chief Financial Officer
(508) 230-1828

We also maintain a web site at <http://www.pressurebiosciences.com> (which is not intended to be an active hyperlink in this prospectus supplement) through which you can obtain copies of documents that we have filed with the SEC. The contents of that site are not incorporated by reference into or otherwise a part of this prospectus supplement.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, legal matters related to the securities offered under this prospectus and any offerings made pursuant to this prospectus will be passed upon by Pepper Hamilton LLP.

EXPERTS

The consolidated financial statements as of and for the fiscal year ended December 31, 2010, incorporated in this prospectus supplement by reference from the Company's annual report on Form 10-K, have been audited by Marcum LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

The consolidated financial statements as of and for the fiscal year ended December 31, 2009, incorporated in this prospectus supplement by reference from the Company's annual report on Form 10-K, have been audited by UHY LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

SUBJECT TO COMPLETION, DATED SEPTEMBER 13, 2011

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

PROSPECTUS

PRESSURE BIOSCIENCES, INC.

\$15,000,000
COMMON STOCK
SERIES A JUNIOR PARTICIPATING PREFERRED STOCK PURCHASE RIGHTS
PREFERRED STOCK
WARRANTS
UNITS

This prospectus relates to common stock, Series A Junior Participating Preferred Stock Purchase Rights, preferred stock, warrants and units that we may sell from time to time in one or more offerings up to a total public offering price of an aggregate of \$15,000,000 (or its equivalent in foreign or composite currencies) on terms to be determined at the time of sale. We will provide specific terms of these securities in supplements to this prospectus. You should read this prospectus and any supplement carefully before you invest. This prospectus may not be used to offer and sell securities unless accompanied by a prospectus supplement for those securities.

Our common stock is quoted on the NASDAQ Capital Market under the symbol "PPIO." Each prospectus supplement to this prospectus will contain information, where applicable, as to any other quotation on the NASDAQ Capital Market or any listing on a national securities exchange of the securities covered by such prospectus supplement.

These securities may be sold directly by us, through dealers or agents designated from time to time, to or through underwriters or through a combination of these methods. See "Plan of Distribution" 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.

Investing in our securities involves risks. See "Risk Factors" on page 4 of this prospectus. We may include specific risk factors in an applicable prospectus supplement under the heading "Risk Factors." You should review that section of the prospectus supplement for a discussion of matters that investors in our securities should consider.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is September 13, 2011.

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You should rely only on the information contained or incorporated by reference in this prospectus and any prospectus supplement. We have not authorized any dealer, salesman or other person to provide you with additional or different information. This prospectus and any prospectus supplement are not an offer to sell or the solicitation of an offer to buy any securities other than the securities to which they relate and are not an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make an offer or solicitation in that jurisdiction. You should not assume that the information in this prospectus or any prospectus supplement or in any document incorporated by reference in this prospectus or any prospectus supplement is accurate as of any date other than the date of the document containing the information.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3, or Registration Statement, that we filed with the Securities and Exchange Commission, or SEC, using a “shelf” registration process. Under this shelf process, we may sell any combination of the securities described in this prospectus in one or more offerings up to an aggregate public offering price of \$15,000,000 (or its equivalent in foreign or composite currencies). This prospectus provides you with a general description of the securities that we may offer. Each time we use this prospectus to sell securities, 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, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement and the documents incorporated by reference into this prospectus, together with the additional information described below under “Where You Can Find More Information,” carefully before making an investment decision.

Any statement made in this prospectus or in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in any prospectus supplement or in any other subsequently filed document that is also incorporated or deemed to be incorporated by reference in this prospectus modifies or supersedes that statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus. See “Incorporation of Certain Documents by Reference” in this prospectus.

Unless the context otherwise requires, in this prospectus, “Pressure BioSciences”, the “Company”, “we”, “us”, “our” and similar names refer to Pressure BioSciences, Inc. and its subsidiary.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and we file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy the reports, proxy statements and other information that we file at the SEC’s Public Reference Room at 100 F Street NE, Washington, D.C. 20549 at prescribed rates. Information on the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. Our filings are also available free of charge at the SEC’s website at <http://www.sec.gov>.

This prospectus is part of the Registration Statement that we filed with the SEC under the Securities Act of 1933, as amended, or the Securities Act. This prospectus does not contain all of the information set forth in the Registration Statement. For more information about us and our securities, you should read the Registration Statement and its exhibits and schedules. Copies of the Registration Statement, including its exhibits, may be inspected without charge at the offices of the SEC or obtained at prescribed rates from the Public Reference Room of the SEC at 100 F Street NE, Washington, D.C. 20549. Copies of the Registration Statement may be obtained without charge at the SEC’s website.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” the information we file with the SEC, which means that we can disclose important information to you by referring you to those documents. 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 may supersede this information. We are incorporating by reference into this prospectus the documents listed below:

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- our Annual Report on Form 10-K for the fiscal year ended December 31, 2010 filed on March 31, 2011, as amended by an amendment on Form 10-K/A to the Annual Report on Form 10-K for the fiscal year ended December 31, 2010 filed on May 2, 2011;
- our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2011 filed on August 15, 2011;

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- our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2011 filed on May 15, 2011;
 - our Current Report on Form 8-K filed on September 9, 2011;
 - our Current Report on Form 8-K filed on August 19, 2011;
 - our Current Report on Form 8-K filed on August 11, 2011;
 - our Current Report on Form 8-K filed on August 9, 2011;
 - our Current Report on Form 8-K filed on June 21, 2011;
 - our Current Report on Form 8-K filed on June 15, 2011;
 - our Current Report on Form 8-K filed on April 29, 2011;
 - our Current Report on Form 8-K filed on April 12, 2011;
- the description of our common stock contained in our Registration Statement on Form 8-A (File No. 0-21615) filed with the SEC under Section 12 of the Exchange Act), including any amendments or reports filed for the purpose of updating such description in which there is described the terms, rights and provisions applicable to our common stock;
- the description of our preferred share purchase rights in our registration statement on Form 8-A (File No. 0-21615) filed with the SEC under Section 12 of the Securities Exchange Act of 1934, including any amendment or report filed for the purpose of updating such description;
- all documents that we file under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of the initial filing of the Registration Statement and prior to the effectiveness of the Registration Statement; and
- all documents that we file under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus and before the termination of the final offering of securities under this prospectus.

We do not incorporate by reference any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K in any future filings, unless specifically stated otherwise in such filings. Any statement contained in a document incorporated by reference in this prospectus shall be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, any prospectus supplement or in any other subsequently filed document which is incorporated by reference modifies or supersedes such statement.

You can obtain copies of any of the documents incorporated by reference in this prospectus from us or, as described above, through the SEC or the SEC's web site at <http://www.sec.gov>. Documents incorporated by reference are available from us, without charge, excluding all exhibits unless specifically incorporated by reference in the documents. You may obtain documents incorporated by reference in this prospectus by writing to us at the following address or by calling us at the telephone number listed below:

Pressure BioSciences, Inc.
14 Norfolk Avenue
South Easton, MA 02375
Attention: Chief Financial Officer

(508) 230-1828

We also maintain a web site at <http://www.pressurebiosciences.com> (which is not intended to be an active hyperlink in this prospectus) through which you can obtain copies of documents that we have filed with the SEC. The contents of that site are not incorporated by reference into or otherwise a part of this prospectus.

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FORWARD-LOOKING STATEMENTS

Some of the statements included in this prospectus and any prospectus supplement contain forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts contained in this prospectus and any prospectus supplement, including statements regarding our plans, objectives, goals, strategies, future events, financial position, capital expenditures, future results, our competitive strengths, our business strategy and the trends in our industry are forward-looking statements. The words “believe,” “may,” “could,” “estimate,” “continue,” “anticipate,” “intend,” “should,” “plan,” “expect,” “likely,” “probably,” “suggest,” “goal,” “potential” and similar expressions, as they relate to us, are intended to identify forward-looking statements.

Forward-looking statements reflect only our current expectations. In any forward-looking statement, where we express an expectation or belief as to future results or events, such expectation or belief is expressed in good faith as of the date of such statement and believed to have a reasonable basis, but there can be no assurance that the statement of expectation or belief will be achieved or accomplished. Our actual results, performance or achievements could differ materially from those expressed in, or implied by, the forward-looking statements due to a number of uncertainties, many of which are unforeseen, including:

- our need for, and our ability to raise, additional equity or debt financing on acceptable terms, if at all;
- our need to take additional cost reduction measures, cease operations or sell our operating assets, if we are unable to obtain sufficient additional financing in the future;
 - the alternatives we may seek in light of our financial condition;
 - the amount of cash necessary to operate our business;
 - the anticipated uses of grant revenue and increased grant revenue in future periods;
- our plans and expectations with respect to our pressure cycling technology (PCT) operations;
- our belief that PCT has achieved significant market acceptance in the mass spectrometry market;
- the expected increase in number of PCT units installed and the increase in revenues from sale of consumable products and extended service contracts;
 - the expected development and success of new product offerings;
- the potential applications for PCT in, and the demonstration of proof-of-concept of PCT for, pathogen inactivation, protein purification, control of chemical reactions, immunodiagnostics and formalin fixed paraffin embedded tissue preparation, among others;
 - the expected expenses of, and benefits and results from, our research and development efforts;
 - the expected benefits and results from our collaboration program, strategic alliances and joint ventures;
 - our expectation of obtaining additional research grants from the government in the future;

- our expectations of the results of our development activities funded by government research grants;
- the potential size of the market for biological sample preparation;

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- general economic conditions;
- the anticipated future financial performance and business operations of our company;
- our reasons for focusing our resources in the market for genomic, proteomic and small molecule sample preparation;
 - the importance of mass spectrometry as a laboratory tool;
- the advantages of PCT over other current technologies as a method of sample extraction and for other applications, including pathogen inactivation, protein purification, control of chemical reactions and immunodiagnostics;
 - sample preparation may be an impediment to research and discovery;
- the capabilities and benefits of our PCT sample preparation system and consumable products;
- that other laboratory scientists will achieve results comparable to those reported to date by certain research scientists who have published or presented publicly on PCT; and
- our ability to expand our customer base in sample preparation and for other applications of PCT.

In addition, you should refer to the “Risk Factors” section of this prospectus beginning on page 4 for a discussion of other factors that may cause our actual results to differ materially from those implied by our forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this prospectus and any prospectus supplement will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, if at all. Accordingly, you should not place undue reliance on these forward-looking statements. All subsequent written and oral forward looking statements attributable to us or the persons acting on our behalf are expressly qualified in their entirety by the applicable cautionary statements. We undertake no obligation to update any of these forward looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law or regulation.

RISK FACTORS

Investing in our securities involves risk. Please see the risk factors under the heading “Risk Factors” in our most recent annual report on Form 10-K, as revised or supplemented by our quarterly reports on Form 10-Q and current reports filed on Form 8-K filed with the SEC since the filing of our most recent annual report on Form 10-K, each of which are on file with the SEC and are incorporated herein by reference. Before making an investment decision, you should carefully consider these risks as well as other information we include or incorporate by reference in this prospectus and any prospectus supplement. The risks and uncertainties we have described are not the only ones facing our company. Additional risks and uncertainties not presently known to us or that we currently deem to be immaterial may also affect our business operations.

ABOUT PRESSURE BIOSCIENCES, INC.

We are focused on solving the challenging problems inherent in biological sample preparation, a crucial laboratory step performed by scientists worldwide working in biological life sciences research. Sample preparation is a term that refers to a wide range of activities that precede most forms of scientific analysis. Sample preparation is often complex,

time-consuming, and we believe one of the most error prone steps of scientific research. It is, none-the-less, a ubiquitous laboratory undertaking the requirements of which drive what we believe is a large and growing worldwide market. We have developed and patented a novel, enabling technology platform that can control the sample preparation process. It is based on harnessing the unique properties of high hydrostatic pressure. This

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process, called pressure cycling technology (“PCT”), uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels (35,000 psi or greater) to safely, conveniently and reproducibly control the actions of molecules in biological samples (e.g., cells and tissues from human, animal, plant, and microbial sources).

Our pressure cycling technology uses internally developed instrumentation that is capable of cycling pressure between ambient and ultra-high levels at controlled temperatures to rapidly and repeatedly control the interactions of bio-molecules. Our instrument, the Barocycler®, and our internally developed consumables product line, which includes Pressure Used to Lyse Samples for Extraction (“PULSE”) Tubes as well as application specific kits (which include consumable products and reagents) together make up the PCT Sample Preparation System (“PCT SPS”).

We were incorporated in the Commonwealth of Massachusetts in August 1978 as Boston Biomedica, Inc. In September 2004, we completed the sale of the Boston Biomedica core business units and began to focus exclusively on the development and commercialization of the PCT platform. Following this change in business strategy, we changed our legal name from Boston Biomedica, Inc. to Pressure BioSciences, Inc., or PBI, and commenced operations as Pressure BioSciences in February 2005.

USE OF PROCEEDS

Unless we indicate otherwise in the prospectus supplement for a particular offering, we intend to use the net proceeds of the securities offered by this prospectus to support the commercialization of our current and future products to fund our research and development activities, for general working capital needs, or for other purposes that our board of directors, in its good faith, deems to be in our best interest. We will set forth in the prospectus supplement for a particular offering our intended use for the net proceeds received from the sale of securities in such offering. We may also invest the net proceeds temporarily until we use them for their stated purpose.

GENERAL DESCRIPTION OF SECURITIES WE MAY OFFER

We may offer shares of our common stock and preferred stock, warrants to purchase shares of common stock and preferred stock or units to purchase any of the foregoing securities, with a total public offering price of up to \$15,000,000, from time to time in one or more offerings under this prospectus at prices and on terms to be determined by market conditions at the time of the offering. This prospectus provides you with a general description of the securities that we may offer. In connection with each offering, we will provide a prospectus supplement that will describe the specific amounts, prices and terms of the securities being offered, including, to the extent applicable:

- designation or classification;
- aggregate offering price;
- rates and times of payment of dividends;
- redemption, conversion or exchange terms;
- conversion or exchange prices or rates and any provisions for changes to or adjustments in the conversion or exchange prices or rates and in the securities or other property receivable upon conversion or exchange;
- ranking;
- restrictive covenants;

- voting or other rights; and
- important federal income tax considerations.

- The prospectus supplement also may add, update or change information contained in this prospectus or in documents we have incorporated by reference. However, no prospectus supplement will offer a security that is not included in the Registration Statement at the time of its effectiveness or offer a security of a type that is not described in this prospectus.

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

DESCRIPTION OF CAPITAL STOCK

As of September 13, 2011, we were authorized to issue 20,000,000 shares of common stock, \$.01 par value, and 1,000,000 shares of preferred stock, \$.01 par value. Of the 1,000,000 shares of preferred stock, 20,000 shares have been designated as Series A Junior Participating Preferred Stock, 313,960 shares have been designated as Series A Convertible Preferred Stock, 279,256 shares have been designated as Series B Convertible Preferred Stock, and 386,458 shares have been designated as Series C Convertible Preferred Stock. As of September 13, 2011, there were 3,064,066 shares of common stock outstanding, 261,135 shares of Series A Convertible Preferred Stock outstanding, 84,179 shares of Series B Convertible Preferred Stock outstanding and 88,098 shares of Series C Convertible Preferred Stock outstanding. As of September 13, 2011, there were no shares of Series A Junior Participating Preferred Stock outstanding.

The following is qualified in its entirety by reference to our restated articles of organization, as amended, and our amended and restated bylaws, as amended, and by the provisions of applicable law. A copy of our restated articles of organization, as amended, and amended and restated bylaws, as amended, are incorporated by reference as exhibits to our most recent annual report on Form 10-K.

Common Stock

The holders of our common stock are entitled to one vote per share on all matters to be voted on by shareholders and are entitled to receive such dividends, if any, as may be declared from time to time by our board of directors from funds legally available therefor. The holders of our common stock do not have cumulative voting rights in the election of directors. Upon our liquidation or dissolution, subject to the liquidation preferences of the holders of our Series A Convertible Preferred Stock, Series B Convertible Preferred Stock and Series C Convertible Preferred Stock, the holders of our common stock are entitled to receive all assets available for distribution to the shareholders. Shares of our common stock have no preemptive or other subscription rights, and there are no conversion rights or redemption or sinking fund provisions with respect to such shares. Pursuant to that certain Rights Agreement (as defined below under "Shareholder Rights Plan"), a Right (also as defined below) will be issued with each share of our common stock that we issue. See "Shareholder Rights Plan" below.

Preferred Stock

A total of 326 shares of preferred stock have not yet been designated to any class or series. Our board of directors may, without future action of our shareholders, issue any undesignated shares of preferred stock in one or more classes or series and fix the rights and preferences thereof, including the dividend rights, dividend rates, conversion rights, voting rights, terms of redemption (including sinking fund provisions), redemption price or prices, liquidation preferences and the number of shares constituting any class or series, or the designations of such class or series. The voting and other rights of the holders of our common stock may be subject to and adversely affected by, the rights of holders of any preferred stock that are currently issued or that may be issued in the future.

Shareholder Rights Plan

On February 27, 2003, our board of directors declared a dividend of one preferred share purchase right (a “Right”) for each outstanding share of common stock on March 21, 2003 (the “Record Date”) to the stockholders of record on that date. Each Right gives the holder the right to purchase from us one one-thousandth of a share of our Series A Junior Participating Preferred Stock, par value \$0.01 per share (the “Preferred Shares”), at a price of \$45.00 per one one-thousandth of a Preferred Share (the “Purchase Price”), subject to adjustment. The description and

terms of the Rights are included in a Rights Agreement, dated as of February 27, 2003, between the Company and Computershare Trust Company, Inc., as amended by Amendment No. 1 to Rights Agreement dated April 16, 2004 (the "Rights Agreement").

Until the earlier to occur of (i) 10 days following a public announcement that a person or group of affiliated or associated persons has acquired beneficial ownership of 15% or more of the outstanding shares of common stock or any person or group who as of February 27, 2003 beneficially owned 15% or more of the outstanding shares of common stock acquired beneficial ownership of any additional shares of common stock (with certain exceptions, an "Acquiring Person") or (ii) 10 business days (or such later date as may be determined by action of our board of directors prior to such time as any person becomes an Acquiring Person) following the beginning of, or announcement of an intention to make, a tender offer or exchange offer the completion of which would result in the beneficial ownership by a person or group of 15% or more of such outstanding shares of common stock (the earlier of such dates being called the "Distribution Date"), the Rights will be evidenced by a summary of rights attachment to the common stock certificates that gave rise to the Rights.

The Rights Agreement provides that, until the Distribution Date, the Rights will be transferred with and only with the shares of common stock. Until the Distribution Date (or earlier redemption or expiration of the Rights), new common stock certificates issued after the Record Date or upon transfer or new issuance of shares of common stock will contain a note incorporating the Rights Agreement by reference. Until the Distribution Date (or earlier redemption or expiration of the Rights), the surrender or transfer of any certificates for shares of common stock outstanding as of the Record Date, even without such a note or a copy of the summary of rights being attached to the certificate, will also constitute the transfer of the Rights associated with the shares of common stock represented by such certificate. As soon as practicable following the Distribution Date, separate certificates evidencing the Rights ("Right Certificates") will be mailed to holders of record of the shares of common stock as of the close of business on the Distribution Date and such separate Right Certificates alone will evidence the Rights.

The Rights are not exercisable until the Distribution Date. The Rights will expire on February 27, 2013 (the "Final Expiration Date"), unless the Final Expiration Date is advanced or extended or unless we redeem or exchange the Rights at an earlier time, in each case, as described below.

The Rights Agreement was amended on April 16, 2004 to include a provision specifically excepting a certain asset purchase, and all related actions and agreements, from constituting a triggering event for the Rights.

The purchase price payable, and the number of Preferred Shares or other securities or property issuable, upon exercise of the Rights are subject to adjustment from time to time to prevent dilution (i) in the event of a stock dividend on, or a subdivision, combination or reclassification of, the Preferred Shares, (ii) upon the grant to holders of the Preferred Shares of certain rights or warrants to subscribe for or purchase Preferred Shares at a price, or securities convertible into Preferred Shares with a conversion price, less than the then current market price of the Preferred Shares or (iii) upon the distribution to holders of the Preferred Shares of evidences of indebtedness or assets (excluding regular periodic cash dividends paid out of earnings or retained earnings or dividends payable in Preferred Shares) or of subscription rights or warrants (other than those referred to above).

The number of outstanding Rights and the number of one one-thousandths of a Preferred Share issuable upon exercise of each Right are also subject to adjustment in the event of a stock split of the common stock or a stock dividend on the common stock payable in shares of common stock or subdivisions, consolidations or combinations of the common stock occurring, in any such case, prior to the Distribution Date.

Preferred Shares purchasable upon exercise of the Rights will not be redeemable. Each holder of Preferred Shares will receive a quarterly dividend payment of 1,000 times the dividend declared per share of common stock. If we

liquidate, the holders of the Preferred Shares will be entitled to an aggregate payment of 1,000 times the aggregate payment made per share of common stock. Each Preferred Share will have 1,000 votes, voting together with the common stock. If we merge, consolidate or are a party to another transaction where shares of common stock are exchanged, each holder of Preferred Shares will have the right to receive 1,000 times the amount received per share of common stock. These rights are protected by customary antidilution provisions.

Because of the Preferred Shares' dividend, liquidation and voting rights, the value of the one one-thousandth of a Preferred Share purchasable upon exercise of each Right should be similar in value to one share of our common stock.

If any person becomes an Acquiring Person, each holder of a Right, other than Rights beneficially owned by the Acquiring Person and its affiliates and associates (which will thereafter be void), will thereafter have the right to receive upon exercise that number of shares of common stock having a market value of two times the exercise price of the Right. If, at any time after a Person becomes an Acquiring Person, we are acquired in a merger or other business combination transaction or 50% or more of our consolidated assets or earning power are sold, proper provision will be made so that each holder of a Right will thereafter have the right to receive, upon the exercise thereof at the then current exercise price of the Right, that number of shares of common stock of the person with whom we have engaged in the transaction described above (or its parent) which at the time of such transaction will have a market value of two times the exercise price of the Right.

If we do not have sufficient shares of authorized common stock to issue the number of shares of common stock required, or if our board of directors chooses, we will deliver upon payment of the exercise price of a Right an amount of cash or securities or other assets equivalent in value to the shares of common stock issuable upon exercise of a Right; provided that, if we fail to meet this obligation within 30 days following the first occurrence of an event triggering the right to purchase shares of common stock, we must deliver, upon exercise of a Right but without requiring payment of the exercise price then in effect, shares of common stock (to the extent available) and then, if necessary, Preferred Shares (to the extent available) and then, if necessary, cash equal in value to the difference between the value of the shares of common stock otherwise issuable upon the exercise of a Right and the exercise price then in effect. Our board of directors may extend the 30-day period described above for up to an additional 60 days to permit the taking of action that may be necessary to authorize sufficient additional shares of common stock to permit the issuance of shares of common stock upon the exercise in full of the Rights.

At any time after any person becomes an Acquiring Person and before the acquisition by any person or group of a majority of the outstanding shares of common stock, our board of directors may exchange the Rights (other than Rights owned by such person or group which have become void), in whole or in part, for shares of common stock or Preferred Shares at an exchange ratio of one share of common stock, or a fractional Preferred Share (or other preferred stock) of the same value as a share of common stock, per Right (subject to adjustment).

With some exceptions, no adjustment in the Purchase Price will be required until cumulative adjustments require an adjustment of at least 1% in such Purchase Price. No fractional Preferred Shares or shares of common stock will be issued (other than fractions that are integral multiples of one one-thousandth of a Preferred Share, which may, at our election, be evidenced by depositary receipts) and instead, an adjustment in cash will be made based on the current market price of the Preferred Shares or the shares of common stock.

At any time before any person becomes an Acquiring Person, our board of directors may redeem the Rights in whole, but not in part, at a price of \$0.001 per Right (the "Redemption Price") payable, at our option, in cash, shares of common stock or such other form of consideration as our board of directors may choose. The redemption of the Rights may be made effective at the time and in the manner that our board of directors in its sole discretion may choose. Immediately upon any redemption of the Rights, the right to exercise the Rights will terminate and the only right of the holders of Rights will be to receive the Redemption Price.

For so long as the Rights are then redeemable, we may amend the Rights Agreement in any manner except that we may not change the Redemption Price. After the Rights are no longer redeemable, we may, amend the Rights Agreement in any manner that does not negatively affect the interests of Rights holders, except that we may not change the Redemption Price.

Until a Right is exercised, the Right holder will have no rights as our stockholder, including, without limitation, the right to vote at our meetings or to receive dividends from us.

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Massachusetts Anti-Takeover and Related Statutes

Control Share Acquisition Law. Under Chapter 110D of the Massachusetts General Laws governing "control share acquisitions," any shareholder of certain publicly-held Massachusetts corporations who acquires certain ranges of voting power — one-fifth or more but less than one-third of all voting power, one-third or more but less than a majority of all voting power, or a majority or more of all voting power — may not (except in certain transactions) vote such stock unless the shareholders (excluding the shares held by the interested shareholders) of the corporation so authorize. As permitted by Chapter 110D, our restated bylaws, as amended, include a provision which excludes us from the applicability of that statute.

Business Combination Statute. Chapter 110F of the Massachusetts General Laws, entitled "Business Combinations with Interested Shareholders," applies to publicly-held Massachusetts corporations with 200 or more shareholders of record. Generally, this statute prohibits such Massachusetts corporations from engaging in a "business combination" with an "interested shareholder" for a period of three years following the date of the transaction in which the person becomes an interested shareholder unless (a) the interested shareholder obtains the approval of the corporation's board of directors prior to becoming an interested shareholder; (b) the interested shareholder acquires at least 90% of the voting stock of the corporation (excluding shares held by certain affiliates of the corporation) outstanding at the time he becomes an interested shareholder; or (c) the business combination is both approved by the board of directors and authorized at an annual or special meeting of shareholders by the holders of at least two-thirds of the outstanding voting stock of the corporation (excluding shares held by the interested shareholder). An "interested shareholder" is a person who, together with affiliates and associates, owns (or at any time within the prior three years did own) 5% or more of the outstanding voting stock of the corporation. A "business combination" includes, among other transactions, a merger, stock or asset sale and other transactions resulting in a financial benefit to the shareholder. Our restated articles of organization, as amended, and amended and restated bylaws, as amended, do not expressly provide for opting out of the provisions of Chapter 110F. As a result, the application of this statute to us could discourage or make it more difficult for any person or group of persons to attempt to obtain control over us. We may at any time amend our restated articles of organization, as amended, or amended and restated bylaws, as amended, to elect not to be governed by Chapter 110F, by a vote of the holders of a majority of our outstanding common stock, but such an amendment would not be effective for 12 months and would not apply to a business combination with any person who became an interested shareholder prior to the date of the amendment.

Certain Provisions of Our Restated Articles of Organization, as amended, Amended and Restated By-Laws, as amended, and Shareholder Rights Plan

Our restated articles of organization, as amended, include several provisions which may render more difficult an unfriendly tender offer, proxy contest, merger or other change in control of our ownership.

Preferred Stock. Our restated articles of organization, as amended, permit our board of directors to issue preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof, without further vote or action by the shareholders. The issuance of preferred stock may have the effect of delaying, deferring or preventing our change in control and may adversely affect the voting and other rights of the holders of our common stock. See "Preferred Stock" and "Shareholders Rights Plan" above.

Classification of Board of Directors. Our restated articles of organization, as amended, provide for the classification of our board of directors into three classes, with the classes being elected for staggered three-year terms. At each annual meeting of shareholders, directors will be elected to succeed those in the class whose term then expires, and each elected director shall serve for a term expiring at the third succeeding annual meeting of shareholders after such director's election, and until the director's successor is elected and qualified. Thus, directors stand for election only once in three years. This provision also restricts the ability of shareholders to enlarge the board of directors. Changes

in the number of directors may be effected by a vote of a majority of the Continuing Directors (as defined in our restated articles of organization, as amended) or by the shareholders by vote of at least 80% of our outstanding common stock, voting as a single class. Under this provision, directors may only be removed with or without cause by the affirmative vote of the holders at least 80% of the combined voting power of the outstanding shares of our common stock, voting together as a single class, or upon the vote of a majority of the Continuing Directors.

Fair Price Provision. Our restated articles of organization, as amended, contain a "Fair Price Provision" that is intended to protect shareholders who do not tender their shares in a takeover bid by guaranteeing them a minimum price for their shares in any subsequent attempt to purchase such remaining shares at a price lower than the acquirer's original acquisition price. The Fair Price Provision requires the affirmative vote of the holders of at least 80% of our outstanding common stock for certain business combinations with a Related Person (as defined in our restated articles of organization, as amended), unless specified price criteria and procedural requirements are met or the business combination is approved by a majority of the Continuing Directors. Continuing Director is defined in our restated articles of organization, as amended, to include any director (i) who is not an affiliate of any beneficial owner of 5% of the voting power of our outstanding voting stock, and (ii) who served as a director before such beneficial owner acquired his 5% beneficial ownership interest. Any successor of a Continuing Director who is unaffiliated with a 5% beneficial owner and who is recommended to succeed a Continued Director by a majority of the Continuing Directors is also a Continuing Director. A Related Person includes a person who, together with affiliates and associates, beneficially owns more than 5% our outstanding common stock.

Shareholder Rights Plan. Under the Rights Agreement described above, each outstanding share of common stock has attached to it one purchase right which entitles the holder to purchase from us one one-thousandth of a share of Series A Junior Participating Preferred Stock at a price of \$45.00, subject to adjustment. This could prevent or delay a change in control of our ownership.

Indemnification Provision. Our restated articles of organization, as amended, provide that we may, either in our bylaws or by contract, provide for the indemnification of our directors, officers, employees and agents, by whomever elected or appointed, to the fullest extent permitted by applicable law, as it may be amended from time to time.

Listing

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

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Limited. Its address is 350 Indiana Street, Suite 800, Golden, Colorado, 80401, and its telephone number is (303) 262-0703.

DESCRIPTION OF WARRANTS

We may issue warrants to purchase common stock, preferred stock or other securities or any combination of the foregoing. We may issue warrants independently. Warrants sold with other securities may be attached to or separate from the other securities. We may issue warrants under one or more warrant agreements between us and the warrant holder or under one or more warrant agreements between us and a warrant agent that we will name in the prospectus supplement.

The prospectus supplement relating to any warrants that we may offer will include specific terms relating to the offering. We will file the form of any warrant agreement with the SEC, and you should read the warrant agreement for provisions that may be important to you. The prospectus supplement will include some or all of the following terms:

- the title of the warrants;
- the aggregate number of warrants offered;

- the designation, number and terms of the common stock, preferred stock or other securities purchasable upon exercise of the warrants, and procedures by which those numbers may be adjusted;
 - the purchase price, if any, of the warrants;

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- the exercise price of the warrants;
- the dates or periods during which the warrants are exercisable;
- the designation and terms of any securities with which the warrants are issued;
- if the warrants are issued as a unit with another security, the date, if any, on and after which the warrants and the other security will be separately transferable;
- if the exercise price is not payable in U.S. dollars, the foreign currency, currency unit or composite currency in which the exercise price is denominated;
 - any minimum or maximum amount of warrants that may be exercised at any one time;
- any terms, procedures and limitations relating to the transferability, exchange, exercise, amendment or termination of the warrants;
- any adjustments to the terms of the warrants resulting from the occurrence of certain events or from the entry into or consummation by us of certain transactions; and
- any material or special United States federal income tax consequences of holding or exercising the warrants.

Unless otherwise specified in the applicable prospectus supplement, holders of warrants may exercise the warrants by delivering the warrant agreement to be exercised, together with specified information, and paying the required amount as provided in the applicable prospectus supplement. We will set forth in the warrant agreement and in the applicable prospectus supplement the exercise procedure and the information that the holder of the warrants will be required to deliver in connection with the exercise of the warrant.

Upon compliance with the warrant exercise procedure, and upon receipt of the required payment, the warrant agreement, and the requisite information for exercise, we will issue and deliver the securities purchasable upon such exercise. If the warrant is exercised for fewer than all of the securities for which the warrant is exercisable, then we will issue a new warrant for the remaining number of securities. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for the warrants.

DESCRIPTION OF UNITS

The following description, together with the additional information we include in any applicable prospectus supplement, summarizes the material terms and provisions of the units that we may offer under this prospectus. Units may consist of shares of common stock and/or preferred stock and/or warrants offered by any prospectus supplement, and may be attached to or separate from those securities. While the terms we have summarized below will generally apply to any future units that we may offer under this prospectus, we will describe the particular terms of any series of units that we may offer in more detail in the applicable prospectus supplement. The terms of any units offered under a prospectus supplement may differ from the terms described below.

We will incorporate by reference into the Registration Statement the form of unit agreement, if any, including a form of unit certificate, if any, that describes the terms of the series of units we are offering before the issuance of such series of units. The following summary of material provisions of the units and the unit agreements, if any, are subject to, and qualified in their entirety by reference to, all the provisions of the unit agreement applicable to a particular series of units. We urge you to read the applicable prospectus supplements related to the units that we sell under this

prospectus, as well as the complete unit agreements that contain the terms of the units.

We may issue units comprised of one or more shares of common stock or preferred stock and warrants in any combination. 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, if any, 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.

We will describe in the applicable prospectus supplement the terms of the series of units, including:

- 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;
 - the rights and obligations of the unit agent, if any;
- any provisions of the governing unit agreement that differ from those described in this section, “Description of Units”; and
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units.

The provisions described in this section, as well as those described under “Description of Capital Stock” and “Description of Warrants,” will apply to any common stock, preferred stock or warrants included in each unit.

We may issue units in such amounts and in numerous distinct series as we determine.

PLAN OF DISTRIBUTION

We may sell the securities being offered pursuant to this prospectus directly to purchasers, to or through underwriters, through dealers or agents, or through a combination of such methods. The prospectus supplement with respect to the securities being offered will set forth the terms of the offering of those securities, including the names of the underwriters, dealers or agents, if any, the purchase price, the net proceeds to us, any underwriting discounts and other items constituting underwriters’ compensation, the public offering price, any discounts or concessions allowed or reallocated or paid to dealers and any securities exchanges on which such securities may be listed.

If underwriters are used in an offering, we will execute an underwriting agreement with such underwriters and will specify the name of each underwriter and the terms of the transaction (including any underwriting discounts and other terms constituting compensation of the underwriters and any dealers) in a prospectus supplement. The securities may be offered to the public either through underwriting syndicates represented by managing underwriters or directly by one or more investment banking firms or others, as designated. If an underwriting syndicate is used, the managing underwriter(s) will be specified on the cover of the prospectus supplement. If underwriters are used in the sale, the offered securities will be acquired by the underwriters for their own accounts and may be resold by the underwriters from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price, at varying prices determined at the time of sale, or at market prices prevailing at the time of sale. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may be changed from time to time. Unless otherwise set forth in the prospectus supplement, the obligations of the underwriters to purchase the offered securities will be subject to certain conditions precedent.

If dealers are used in an offering, we will sell the securities to the dealers as principals. The dealers then may resell the securities to the public at varying prices which they determine at the time of resale. The names of the dealers and the terms of the transaction will be specified in a prospectus supplement.

The securities may be sold directly by us or through agents we designate from time to time at a fixed price or prices, which may be changed, at varying prices determined at the time of sale, at market prices prevailing at the time of sale or at negotiated prices. If agents are used in an offering, the names of the agents and the terms of the agency will be specified in a prospectus supplement. Unless otherwise indicated in a prospectus supplement, the agents will act on a best-efforts basis for the period of their appointment. Dealers and agents named in a prospectus supplement may be deemed to be underwriters (within the meaning of the Securities Act) of the securities described

therein. In addition, we may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any resales thereof.

Underwriters, dealers and agents may be entitled to indemnification by us against specific civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments which the underwriters, dealers or agents may be required to make in respect thereof, under underwriting or other agreements. The terms of any indemnification provisions will be set forth in a prospectus supplement. Certain underwriters, dealers or agents and their associates may engage in transactions with and perform services for us in the ordinary course of business.

If so indicated in a prospectus supplement, we will authorize underwriters or other persons acting as our agents to solicit offers by institutional investors to purchase securities pursuant to contracts providing for payment and delivery on a future date. We may enter into contracts with commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and other institutional investors. The obligations of any institutional investor will be subject to the condition that its purchase of the offered securities will not be illegal at the time of delivery. The underwriters and other agents will not be responsible for the validity or performance of such contracts.

Each series of securities will be a new issue of securities and will have no established trading market (other than our common stock). Any common stock sold pursuant to a prospectus supplement may be eligible for quotation on the NASDAQ Capital Market or such other trading market, if any, as specified in a prospectus supplement. Any securities sold pursuant to a prospectus supplement may or may not be listed on a national securities exchange or approved for trading on any other trading market.

Any underwriters, dealers or agents to or through whom such securities are sold for public offering and sale may make a market in such securities, but such underwriters, dealers or agents will not be obligated to do so and may discontinue any market making at any time without notice. No assurance can be given as to the liquidity of the trading market for any such securities. The amount of expenses expected to be incurred by us in connection with any issuance of securities will be set forth in the applicable prospectus supplement. Certain of the underwriters, dealers or agents and their associates may engage in transactions with, and perform services for, us and certain of our affiliates in the ordinary course of business.

To facilitate the offering of securities, certain persons participating in the offering may engage in transactions that stabilize, maintain, or otherwise affect the price of the securities. These may include over-allotment, stabilization, syndicate short covering transactions and penalty bids. Over-allotment involves sales in excess of the offering size, which creates a short position. Stabilizing transactions involve bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Syndicate short covering transactions involve purchase of securities in the open market after the distribution has been completed in order to cover syndicate short positions. Penalty bids permit the underwriters to reclaim selling concessions from dealers when the securities originally sold by the dealers are purchased in covering transactions to cover syndicate short positions. These transactions may cause the price of the securities sold in an offering to be higher than it would otherwise be. These transactions, if commenced, may be discontinued by the underwriters at any time.

During such time as we may be engaged in a distribution of the securities covered by this prospectus, we are required to comply with Regulation M promulgated under the Securities Exchange Act of 1934, as amended. With certain exceptions, Regulation M precludes us, any affiliated purchasers, and any broker-dealer or other person who participates in such distribution from bidding for or purchasing, or attempting to induce any person to bid for or purchase, any security which is the subject of the distribution until the entire distribution is complete. Regulation M also restricts bids or purchases made in order to stabilize the price of a security in connection with the distribution of that security. All of the foregoing may affect the marketability of our shares of common stock.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, legal matters related to the securities offered under this prospectus and any offerings made pursuant to this prospectus will be passed upon by Pepper Hamilton LLP. If legal matters in connection with any offerings made pursuant to this prospectus are passed upon

by counsel other than Pepper Hamilton LLP, such counsel will be named in the prospectus supplement relating to such offering.

EXPERTS

The consolidated financial statements as of and for the fiscal year ended December 31, 2010, incorporated in this Prospectus by reference from the Company's Annual Report on Form 10-K, have been audited by Marcum LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

The consolidated financial statements as of and for the fiscal year ended December 31, 2009, incorporated in this Prospectus by reference from the Company's Annual Report on Form 10-K, have been audited by UHY LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

843 Units

Units Consisting of
One Share of Series D Convertible Preferred Stock and
a Series F Warrant to Purchase Approximately 614 Shares of Common Stock

PROSPECTUS SUPPLEMENT

Ladenburg Thalmann & Co. Inc.

November 10, 2011
