

## Pressure BioSciences, Inc. Announces Continued Strong Financial Performance for the Third Quarter and Year-to-Date 2010

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South Easton, MA, November 16, 2010 -- Pressure BioSciences, Inc. (NASDAQ: PBIO) ("PBI" or the "Company") today announced continued strong financial performance for the three and nine month periods ended September 30, 2010, compared to the same periods in 2009. The Company also provided a brief business update.

Total revenue for the third quarter of 2010 was \$372,103 compared to \$317,427 for the comparable period in 2009, a 17% increase. Revenue from the sale of pressure cycling technology (PCT) products and services was \$194,730 for the three months ended September 30, 2010 compared to \$204,584 for the same period in 2009. During the third quarter of 2010, the Company completed the installation of fifteen (15) Barocycler instruments, compared to twenty (20) during the same period of 2009. Fourteen of the fifteen instruments were domestic installations and one was an international sale, compared to nineteen domestic installations and one international sale for the same quarter in 2009. Sales of PCT-based consumables generated revenue of approximately \$22,000 for the three months ended September 30, 2010 compared to approximately \$18,000 for the same period in 2009, an increase of approximately 22%.

Operating loss for Q3 2010 was \$842,587 compared to \$754,180 for the same period in 2009. After the exclusion of non-cash charges, operating cash burn for the third quarter of 2010 was approximately \$711,000, compared to approximately \$597,000 for the third quarter of 2009, an increase of about 19%.

Total revenue for the nine months ended September 30, 2010 was \$1,065,020 compared to \$894,570 for the same period in 2009, a 19% increase. Revenue from the sale of PCT products and services was \$667,262 for the nine months ended September 30, 2010 compared to \$585,928 for the same period in 2009, a 14% increase. During the first nine months of 2010, the Company installed thirty-seven Barocycler instruments, as compared to forty-two during the same period of 2009. Thirty-six of the thirty-seven instruments were domestic installations and one was an international sale, compared to thirty-five domestic installations and seven international sales for the same nine-month period in 2009. Sales of PCT-based consumables generated revenue of \$81,096 for the nine months ended September 30, 2010 compared to \$58,816 for the same period in 2009, a 38% increase.

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### CALENDAR OF PBI EVENTS

<a href="#">ASCB- AMERICAN SOCIETY FOR CELL BIOLOGY 2010</a>	<a href="#">PLANT AND ANIMAL GENOME X1X</a>
DECEMBER 11-15, 2010	JANUARY 15-19 2011
PHILADELPHIA, PA	SAN DIEGO, CA

### Recent Third Party Publications Featuring Pressure Cycling Technology (PCT)

Analytical Biochemistry

## Label-free mass spectrometry-based relative quantification of proteins separated by one-dimensional gel electrophoresis

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### ABSTRACT

Here we present a matrix-assisted laser desorption/ionization tandem time-of-flight (MALDI-TOF/TOF)-based label-free relative protein quantification strategy that involves sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) separation of proteins followed by in-gel trypsin digestion. The main problem encountered in gel-based protein quantification is the difficulty in achieving complete and consistent proteolytic digestion. To solve this problem, we developed a high-pressure-assisted in-gel trypsin digestion method that is based on pressure cycling technology (PCT). The PCT approach performed at least as well as the conventional overnight in-gel trypsin digestion approach in parameters such as number of peaks detected, number of peptides identified, and sequence coverage, and the digestion time was reduced to 45 min. The gel/mass spectrometry (MS)-based label-free protein quantification method presented in this work proved the applicability of the signal response factor concept for relative protein quantification previously demonstrated by other groups using the liquid chromatography (LC)/MS platform. By normalizing the average signal intensities of the three most intense peptides of each protein with the average intensities of spiked synthetic catalase tryptic peptides, which we used as an internal standard, we observed spot-to-spot and lane-to-lane coefficients of variation of less than 10 and 20%, respectively. We also demonstrated that the method can be used for determining the relative quantities of proteins comigrating during electrophoretic separation.

A complete copy of this paper may be obtained online

<http://dx.doi.org/10.1016/j.ab.2010.10.023>

from Elsevier Inc.

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Operating loss for the nine months ended September 30, 2010 was \$2,551,685 compared to \$2,419,424 for the same period in 2009. After the exclusion of non-cash charges, operating cash burn for the nine months ended September 30, 2010 was approximately \$2,156,000, compared to approximately \$1,914,000 for the same period in 2009, a 13% increase.

Loss per common share – basic and diluted – was \$0.26 for the third quarter of 2010 compared to \$0.35 for the third quarter of 2009. Loss per common share – basic and diluted – was \$1.01 for the nine months ended September 30, 2010 compared to \$1.07 for the same nine-month period of 2009. The loss per common share for the nine months ended September 30, 2010 and 2009 included an income tax benefit of \$244,479 and \$623,262 respectively.

Joseph L. Damasio, Jr., Corporate Contoller, commented: "Operating cash usage for the three and nine month periods ended September 30, 2010 was approximately 19% and 13% higher than for the same periods in 2009, respectively. These added costs reflect investments made in inventory, marketing, sales, and PCT applications development to support our goal of increasing both PCT System and consumables sales. Importantly, some of these application development costs are being returned to us through a \$244,000 "Therapeutic Discovery Grant" award from the U.S. government, as recently reported."

R. Wayne Fritzsche, Chairman of the Board of Directors, said: "In addition to our continued strong financial performance, the Company reported other important achievements during the third quarter of 2010, including:

- Initial equity research coverage by two independent investment research firms: Zacks Investment Research and TriPoint Global Research.
- A collaboration with the Lawrence Berkeley National Laboratory (LBNL) to study microbes in oil spills. In August 2010, LBNL scientists reported on the discovery of a new type of oil-eating bacteria and the potential for natural microbial clean-up of oil spills. LBNL scientists use the PCT System as their sample preparation method of choice.
- A front page story on the benefits of PCT in Genetic Engineering and Biotechnology News (GEN), the most widely read biotechnology publication in the world.
- A special supplement of Expert Review of Proteomics focused entirely on the May 21<sup>st</sup> symposium at Harvard Medical School on *Applications of Ultra-high Pressure in Biotechnology*. The symposium, co-hosted by several Harvard groups, included presentations on the advantages of PCT by 14 scientists from prestigious laboratories in North America.
- The addition of two distinguished members to our Board of Directors, Mr. Alan Goldberg and Mr. Greg Freitag."

Richard T. Schumacher, President and CEO of Pressure BioSciences, Inc. said: "We continue to leverage the majority of internal efforts on driving the installed base of PCT Systems and increasing consumables usage. Our focus remains in the area of sample preparation for mass spectrometry and forensics, where we have had the most success in closing accounts over the past year, where we believe the advantages of PCT are clear, and where we believe the benefits of PCT exceed those of competitive methods."

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**Recent Third Party Publications Featuring Pressure Cycling Technology (PCT)**

Journal of Cancer 2010, 1

## Elevated Pressure Improves the Rate of Formalin Penetration while Preserving Tissue Morphology

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### Abstract

Formaldehyde fixation and paraffin-embedding remains the most widely used technique for processing cancer tissue specimens for pathologic examination, the study of tissue morphology, and archival preservation. However, formaldehyde penetration and fixation is a slow process, requiring a minimum of 15 hr for routine processing of pathology samples. Routinely fixed samples often have a well-fixed outer rim, with a poorly fixed inner core of tissue. In this study, we show that the application of elevated pressure up to 15,000 psi improves the rate of formaldehyde fixation by approximately 5 to 7-fold while preserving the tissue morphology of porcine liver. The tissue also exhibited much more uniform formaldehyde penetration after 30-60 min incubation under elevated pressure than samples fixed for the same length of time at atmospheric pressure.

### Discussion

Formalin-fixed, paraffin-embedded tissue is frequently used to preserve specimens for pathological examination due to the high quality of the resulting tissue blocks, its low cost and ease of archival storage [2]. However, the slow rate of passive formaldehyde diffusion necessitates longer tissue processing times of up to 18 hr for routine biopsy samples. In this study, we demonstrate that the addition of elevated pressure to a standard formaldehyde-fixation protocol increases the rate of diffusion of 10% neutral buffered formalin. The apparent formaldehyde diffusion coefficient,  $K$ , increased by 5-fold for tissue incubated with pressure pulsing ( $\Delta$  5,000 psi), and 7-fold at 42°C, and 15,000 psi. Tissue morphology and cellular structure were well preserved for samples fixed at elevated pressure for as little as 15 min, and were comparable to tissue fixed at atmospheric pressure for 4 or more hours. In contrast, tissue incubated in formaldehyde at ambient pressure for short periods of time appeared to be in poorer condition, most likely due to the poor penetration of formaldehyde. These studies show that the addition of elevated pressure to conventional formaldehyde fixation improves the diffusion of formaldehyde throughout the tissue. It is possible that elevated pressure can be applied to all steps of histology to reduce total tissue processing time and expedite pathology results.

A complete copy of this paper will soon be available on Pressure BioSciences, Inc. website.

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**About Pressure BioSciences, Inc.**

Pressure BioSciences, Inc. (PBI) is a NASDAQ Capital Markets listed publicly traded company focused on the development and sale of instrumentation and consumables based on a novel, enabling technology called Pressure Cycling Technology (PCT). PCT uses cycles of hydrostatic pressure between ambient and ultra-high levels (up to 35,000 psi and greater) to control bio-molecular interactions. PBI currently holds 14 US and 10 foreign patents covering multiple applications of PCT in the life sciences field, including genomic and proteomic sample preparation, pathogen inactivation, the control of chemical reactions, immunodiagnosics, and protein purification. PBI currently focuses its efforts on the development and sale of PCT-enhanced enzymatic digestion products designed specifically for the mass spectrometry marketplace, as well as sample preparation products for biomarker discovery, soil and plant biology, forensics, histology, and counter-bioterror applications.

**Forward Looking Statements**

Statements contained in this press release regarding the Company's intentions, hopes, beliefs, expectations, or predictions of the future are "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward looking statements include statements that additional expenditures for marketing, sales, and PCT applications development in 2010 versus 2009 will help increase both PCT System and consumables usage; that some of these expenditures will be returned to PBI through the "Therapeutic Discovery Grant" Award; that LBNL scientists use the PCT System as their sample preparation method of choice; that PBI has had the most success in closing accounts in the area of mass spectrometry and forensics sample preparation; that the use of the PCT System for the mass spectrometry and forensics sample preparation areas have clear advantages and benefits over other sample preparation methods; that the Company will finalize a co-marketing/co-development agreement soon; and that the Company will close on a financing transaction in the near future. These statements are based upon the Company's current expectations, forecasts, and assumptions that are subject to risks, uncertainties, and other factors that could cause actual outcomes and results to differ materially from those indicated by these forward-looking statements. These risks, uncertainties, and other factors include, but are not limited to: the Company's financial results for the quarter and nine months ended September 30, 2010 may not necessarily be indicative of future results as future revenues may not meet expectations due to the possible failure of the Company's products to achieve commercial acceptance, changes in customer's needs and technological innovations, and expenses that may be higher than anticipated due to unforeseen costs or cost increases; the risk that the Company may be unable to improve total revenue, PCT consumables revenue, and the number of PCT Systems installations because potential customers may not believe that the PCT System will provide any significant advantages over other sample preparation systems; that due to unexpected costs or increases in costs, the Company will need additional capital sooner than anticipated; possible difficulties or delays in the implementation of the Company's strategies that may adversely affect the Company's continued commercialization of PCT; changes in customer's needs and technological innovations; and the Company's sales force may not be successful in selling the Company's PCT product line because scientists may not perceive the advantages of PCT over other sample preparation methods. Further, the Company expects that it will need additional capital to fund its continuing operations beyond the first quarter of 2011. Additional risks and uncertainties that could cause actual results to differ materially from those indicated by these forward-looking statements are discussed under the heading "Risk Factors" in the Company's Annual Report on Form 10-K for the year ended December 31, 2009, and other reports filed by the Company from time to time with the SEC. The Company undertakes no obligation to update any of the information included in this release, except as otherwise required by law.

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<http://www.pressurebiosciences.com>

For social media release with interactive features, please cut and paste this Link into your browser:

<http://pressurebio.irnewsroom.com/social-media-releases/item/40-pressure-biosciences-press-release-11-16-10>

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**Dr. Olivia Mason**  
(Lawrence Berkeley National Laboratory)

**Mr. Richard T. Schumacher**  
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**Watch for**

**New, Cutting-edge PCT-based  
Products for Mitochondria Isolation  
To be Released in December  
at**

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