

## Pressure BioSciences, Inc. Reports Strong Q4 and FY2009 Financial Results, Citing Record Revenue, Significant Increase in PCT System Installations, and Continued Reduction in Cash Burn

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South Easton, MA, March 31, 2010 -- Pressure BioSciences, Inc. (NASDAQ: PBI) ("PBI" or the "Company") today announced strong financial results for the 2009 fourth quarter and fiscal year.

Total revenue for the fiscal year ending December 31, 2009 was \$1,244,910 compared to \$852,263 for the 2008 fiscal year, a 46% increase. Revenue from the sale of PCT products and services was \$831,602 for FY2009 compared to \$655,252 for FY2008, a 27% increase. During 2009, the Company installed fifty-four Barocycler instruments, as compared to forty-one during 2008, a 32% increase. Forty-seven of the fifty-four were domestic installations and seven were international sales, compared to twenty-six and fifteen for 2008, respectively.

Operating loss for FY2009 was \$3,196,568 compared to \$4,966,399 for 2008, a decrease of \$1,769,831 or 36%. This decrease in operating loss was primarily related to the Company's 2008 cost containment initiatives and strong revenue in FY2009. The Company expects PCT products and services revenue, number of installations, and operating loss to continue to improve in FY2010, as compared to FY2009.

Loss per common share – basic and diluted – was \$1.42 for 2009 compared to \$2.24 for 2008.

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### PBI Presents a Poster at the 2010 Biothreat Agent Workshop (BTAW)

*Multiplex Biomolecule Extraction Using the Pressure Cycling Technology (PCT) Sample Preparation System (PCT SPS)*

Title is Hyperlinked to Full Posters

Scientists from Thermo Fisher Scientific, The Institute for Research in Immunology and Cancer at the Université de Montréal, and The University of California at Davis Presented Posters at the 2010 Association of Biomolecular Resource Facilities (ABRF)

### The Effect of Pressure Cycling on Proteolytic Cleavage Efficiency, Reaction Time and Protein Sequence Coverage

Roger Biringer<sup>1</sup>, Eric Bonnell<sup>2</sup>, Julian Saba<sup>1</sup>,  
Andreas Huhmer<sup>1</sup>, Pierre Thibault<sup>2</sup>

<sup>1</sup>Thermo Fisher Scientific, San Jose, CA

<sup>2</sup>Institute for Research in Immunology and Cancer, Université de Montréal, Montréal, Canada

### A Comparative Study of In-gel Digestions Using Microwave and Pressure Accelerated Technologies

Rudy Alvarado, Diana Tran, Bonnie Ching and  
Brett S. Phinney

University of California Davis

Titles are Hyperlinked to Full Posters

### CALENDAR OF PBI EVENTS

<u><a href="#">EPR 2010</a></u>	<u><a href="#">US ARMY JPEO-CBD SAMPLE PREP 2010</a></u>	<u><a href="#">58<sup>TH</sup> ASMS CONFERENCE ON MASS SPECTROMETRY</a></u>
San Juan, PR	Baltimore, MD	Salt Lake City, UT
May 2-6, 2010	May 6-7, 2010	May 23-23, 2010

Keep May 21, 2010 Open for the Boston Symposium on Applications of Ultra-High Pressure in Biotechnology Watch for Information!

## Pressure BioSciences, Inc. Reports Strong Q4 and FY2009 Financial Results: Cont. from Page 1

Total revenue for the 2009 fourth quarter was \$350,340 compared to \$334,041 for the comparable period in 2008. Revenue from the sale of PCT products and services was \$245,674 for the three months ended December 31, 2009 compared to \$233,256 for the same period in 2008. During the 2009 fourth quarter, the Company completed the installation of twelve Barocycler instruments, compared to ten during the same period of 2008. Operating loss for the fourth quarter of 2009 was \$777,144 compared to \$900,100 for the same period in 2008. After the exclusion of non-cash charges, cash burn for the 2009 fourth quarter was approximately \$622,000, compared to approximately \$800,000 for the fourth quarter of 2008, a decrease of 22%.

Joseph L. Damasio, Jr., Corporate Controller, commented: "We reported a 46% increase in revenue and a 32% increase in the number of PCT Sample Preparation System installations in FY2009, compared to FY2008. Significantly, we achieved these results while reducing our total operating loss in FY2009 by approximately 36%, compared to FY2008."

Mr. Damasio continued: "Our FY2009 operating loss of \$3,196,568 included non-cash depreciation/amortization expenses of approximately \$204,000, stock issued to vendors valued at \$27,000, and stock-based compensation of approximately \$429,000. Excluding these non-cash charges, cash burn for FY2009 averaged approximately \$635,000 per quarter, compared to an average of approximately \$1,065,000 per quarter in FY2008, representing a decrease of about 40% in cash used in operating activities between the two periods."

Richard T. Schumacher, President and CEO of Pressure BioSciences, Inc. said: "We are very pleased with the results of the 2009 fiscal year. We disclosed and openly discussed our clear financial goals at the beginning of the year. These included: significant increases in total revenue and PCT products and services revenue; significant increases in PCT Sample Preparation System installations; completion of a private placement that would adequately fund the company into 2010; and a significant reduction in cash burn to under \$650,000 per quarter. In the midst of very difficult economic times, with half the staff in 2009 that we had in 2008, and with very limited resources, we successfully met these goals."

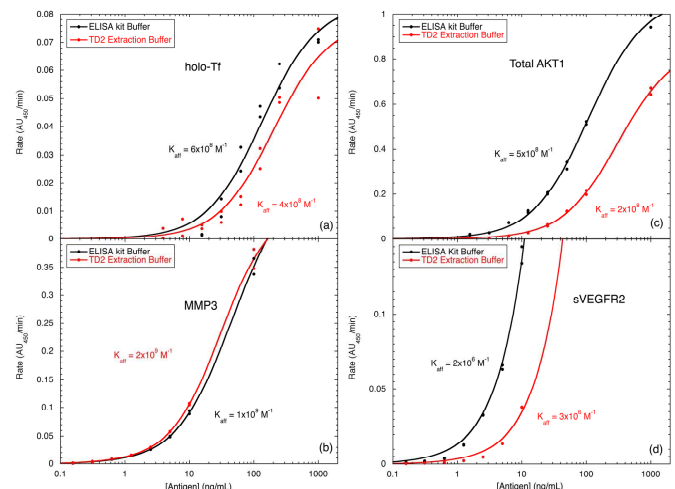
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## ProteoSolve-TD2 PrEp: Enzyme-Linked Immunosorbant Assays (ELISA) Conducted on Proteins Recovered from Ovarian Tumors Using ProteoSolve-TD2 and Pressure Cycling Technology (PCT)

### Introduction

Integral membrane proteins play key biological roles in cell signaling, [1-5] membrane transport, [6-7] as well as pathogen invasion [8-10]. However, clinical exploration of integral membrane proteins has been limited by our ability to recover these proteins in a form suitable for immunoaffinity quantification by ELISA. As such, quantitative clinical assays for this critical class of proteins (e.g., immunosorbant assays) remain elusive, and are generally limited to monitoring serum-soluble extracellular fragments [11-12], or indirect measurement of their mRNAs [13-14].

Here we describe the use of pressure cycling technology (PCT) in combination with PBI's ProteoSolve-TD2 Kit for recovery of both cytosolic and integral membrane proteins from solid ovarian tumors. The ProteoSolve-TD2 buffer system is compatible with downstream immunosorbant assays. This solution allows direct adaptation of commercial ELISA kits developed for measuring serum-soluble membrane protein fragments for the measurement of their integral membrane protein counterparts.



### ELISA Results

Figure 1 shows that the ProteoSolve-TD2 buffer system (diluted 1:10 into TDiluent) has negligible effect on the performance of a wide range of ELISAs. Several commercial sandwich ELISA kits—(a) transferrin [Tf], (b) matrix metalloprotease 3 [MMP3], (c) RAC serine/threonine-protein kinases [AKT1], and (d) soluble vascular endothelial growth factor receptor 2 [sVEGFR2]—were used to quantify the effect of the TD2 extraction buffer on subsequent immunoaffinity work. In each case one vial of antigen standards was reconstituted as prescribed in the manufacturer's instructions and a second vial was reconstituted using ProteoSolve-TD2 buffer diluted 1:10 by volume in TDiluent (pH 7.5). The small differences in affinity constants between these buffers appear to lie within the experimental error of the serial dilutions and the curve fitting. Furthermore, there was no consistent trend with  $K_{aff}$  being either slightly higher or lower, depending on the assay, and generally within the expected preparation variation of the standards. ProteoSolve-TD2 buffer was used as supplied (not optimized) for each assay.

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Mr. Schumacher continued: "In addition to meeting these clear financial goals, we achieved a number of other successes as well. Among these were: a significant increase in the number of third party PCT publications and presentations; the release of the much anticipated PCT MicroTube Adapter Kit; the release of additional PCT-dependent ProteoSolve kits; and measurable progress by independent laboratories in the generation of data and the development of methods for the use of PCT in the preparation of samples for forensic, mass spectrometry, organelle isolation, biotherapeutic development and quality control, agriculture, anti-bioterror, and biomarker discovery applications. We believe the progress made in these areas sets us up very well for 2010 and beyond."

Mr. Schumacher concluded: "We continue to work towards finding a strategic marketing, sales, and distribution partner for those applications where we believe PCT has significant advantages over competitive sample preparation methods. Discussions with several companies are on-going. We continue to believe that we will find at least one, if not more than one, strategic partner in 2010."

### 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 regarding the expected continued improvement in total revenue and PCT products and services revenue, in number of PCT System installations, and in the Company's operating expenses and operating loss during 2010; the implication that the Company will maintain its current level of cash burn during 2010; that interest in PCT will continue to grow; the anticipated advantages and benefits of the Company's products and technology; expected progress in the use of PCT for the preparation of samples for forensic, mass spectrometry, organelle isolation, biotherapeutic development and quality control, agriculture, anti-bioterror, and biomarker discovery applications during 2010; that the Company will reach a marketing/sales/distribution agreement with one or more strategic partners in 2010; and the release of PCT-dependent kits for the sample preparation market. 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 year ended December 31, 2009 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 and PCT products and services revenue, the number of PCT Systems installations, and its operating loss due to unexpected costs or increases in costs and therefore 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; that other scientists may not be able to corroborate the data generated by third party labs in the development of protocols for the use of PCT for the preparation of samples for forensic, mass spectrometry, organelle isolation, biotherapeutic development and quality control, agriculture, anti-bioterror, and biomarker discovery; 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.

## ProteoSolve-TD2 PrEp: Enzyme-Linked Immunosorbant Assays (ELISA) Conducted on Proteins Recovered from Ovarian Tumors Using ProteoSolve-TD2 and Pressure Cycling Technology (PCT) Cont. from Page 2

Western Blots (not shown) indicated that each of the target proteins was recovered nearly quantitatively from the tumor samples. Therefore, it was possible to determine the tissue titers of each of these proteins directly by ELISA (see Table).

Biomarker	Conc. In Extract (ng/mL)	Conc. In Tumor (ng/g)
Holo-Tf	80± 40 x 10 <sup>3</sup>	5 ±3 x 10 <sup>6</sup>
MMP3	≈1	≈7
AKT1	40	20 x 10 <sup>3</sup>
VEGF R2 / sVEGF R2	0.2	1 ± 0.1

Transferrin (Tf) is a convenient surrogate marker for the blood/serum content of the fresh frozen tumor sample, which was determined to be 15% using the reported serum transferrin concentration value [15]. Most importantly, the assay for soluble vascular endothelial growth factor receptor 2 (sVEGFR2) was used directly to quantify the tissue titer of the VEGF receptor 2, an integral membrane protein, to be 1±0.1 ng/g of tumor tissue. This value is twice as high as the highest values expected for sVEGFR2 in the 15% blood contamination of the tissue sample [16].

### PCT Sample Preparation

Cryogenically-ground, fresh-frozen, tumor samples (200mg) were processed as described in the ProteoSolve-TD2 User's Manual in 1.3 mL of ProteoSolve-TD2 buffer, including treatment with micrococcal nuclease, clarification by centrifugation and where serially-diluted into TDiluent to get into the working range for each assay. A minimum dilution of 1:10 was used as the most concentrated sample. The diluted samples were applied directly to each of the commercial ELISA kits: holo-Tf (Bethyl Labs), MMP3 and sVEGFR2 (R&D Systems), and total AKT1 (Cell Signaling). All kits used a secondary antibody conjugated to horse radish peroxidase. The ELISAs were conducted according to the corresponding kit instructions.

### Discussion

ProteoSolve-TD2 and PCT provide a simple and easy to use method for the extraction of proteins, including integral membrane proteins, prior to immunoaffinity techniques. When diluted 1:10 by volume in TDiluent, ProteoSolve-TD2 extracts may be used directly in ELISA assays with little or no change in their sensitivity (either affinity or avidity). Because membrane proteins are extracted together with normal cytosolic proteins and remain soluble in the ProteoSolve buffers, immunoassays designed for serum-soluble membrane proteins can be readily adapted to measure the titers of their integral membrane protein counterparts.

### References

Available with the Full Protocol on the PBI Website