PBI Pressure BioSciences Inc.

PCT NEWS

NASDAQ: PBIO

Discovery Starts With Sample Preparation™

Volume 5, Issue 3 **March 2011**

Advantages of Pressure BioSciences' Novel Shredder System for Initial Sample Processing Presented March 20-23rd at the US HUPO Annual Meeting

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South Easton, MA, March 21, 2010 – Pressure BioSciences, Inc. (NASDAQ: PBIO) ("PBI" and the "Company") today announced that data supporting multiple advantages of PBI's recently released, novel Shredder System for initial sample processing will be presented this week at the US HUPO annual meeting. The data were generated by academic and biotechnology scientists working in collaboration with researchers at PBI.

Dr. Vera Gross, a Senior Scientist at PBI, will present the study. Collaborators included researchers from the Harvard Catalyst LITT (Harvard CTSC), the Brigham and Women's Hospital (Harvard University), Target Discovery, Inc. (Palo Alto, CA), and scientists from PBI. The presentation is entitled: "Low Energy Mechanical Shredding: a New Approach for a Wide Range of Sample Preparation Needs."

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CALENDAR OF PBI EVENTS

CAMBRIDGE BIOTECH DAY	MASSEP "ADVANCES IN SEPARATION SCIENCE AND MASS SPECTROMETRY"	BIORESEARCH PRODUCT FAIRE UNIVERSITY OF PENNSYLVANIA
MARCH 31, 2011	MAY 11, 2011	MAY 19, 2011
CAMBRIDGE, MA	BOSTON, MA	PHILADELPHIA, PA

Seminar and Poster Presented by Ms. Deepthi Nori and Dr. Bruce R. McCord at the American Academy of Forensic Sciences 63rd Annual Scientific Meeting, Chicago, IL February 21-26, 2011

Application of Pressure Cycling Technology (PCT) in Differential Extraction

Deepthi Nori*, MFS; Dr. Bruce R. McCord, PhD
International Forensic Research Institute, Department of Chemistry and Biochemistry
Florida International University, Miami, FL USA

ABSTRACT

The current study involves the development of a pressure-based lysis method for the differential extraction of DNA from sperm and epithelial cells in sexual assault casework. Our initial studies indicate the potential of PCT application in generating male DNA profile by selectively lysing sperm cells from mixtures.

INTRODUCTION

Conventional differential extraction methods used for the separation of DNA from sperm cells and epithelial cells are time consuming and require special expertise. These methods rely on selectively digesting epithelial cells, removing them and isolating individual sperm. Unfortunately female cells can overwhelm the process. A better more automated method is needed.

Barocycler® NEP2320, a commercially available instrument from Pressure BioSciences Inc., is equipped with a hydrostatic pressure chamber that can generate alternating cycles of ambient and high pressures up to 45000 psi capable of lysing cells and cellular structures.

Our goal is to utilize the Pressure Cycling Technology Sample Preparation System (PCT-SPS) to selectively lyse sperm cells while keeping epithelial cells intact when analyzing sexual assault evidence.

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Dr. Gross commented: "Life science research studies (e.g., cancer, heart disease, stroke, infectious diseases) require a wide variety of samples to be broken apart ("disrupted") in order to extract important bio-molecules from the sample for analysis, such as DNA, RNA, proteins, and lipids. To this end, as evidence of the versatility of the novel PBI Shredder System, we processed a diverse range of sample types, including lung, muscle, leaves, seeds, rice, worms, human ovarian tumor tissue, and ticks. In all cases, the PBI Shredder System efficiently disrupted the samples and the bio-molecules released were of excellent quality and yield."

Dr. Alexander Lazarev, VP of R&D at PBI, and a collaborator in the study, said: "Although the PBI Shredder System is powerful enough to break apart tough samples like muscle, seeds, and ticks, it is also gentle enough to extract intact and functional mitochondria from different tissue types. We believe this is important, because defects in mitochondria have been implicated in a number of diseases and disorders, including stroke, Alzheimer's dementia, and Type II diabetes. Importantly, certain samples that were initially disrupted by the PBI Shredder System were further processed in our patented, powerful pressure cycling technology ("PCT") sample preparation system, resulting in increased yield from the samples."

Dr. Nate Lawrence, VP of Marketing at PBI, commented: "We believe there are approximately 500,000 scientists worldwide routinely extracting bio-molecules from a diverse range of biological samples using a variety of extraction methods. Some methods are labor-intensive, time consuming, and expensive; others engender safety and quality concerns; and still others lack the versatility required for today's cutting-edge research laboratory. Based in part on the results of this study, we believe that the PBI Shredder System offers many of these researchers greater safety, flexibility, quality, and speed than the methods they are currently using. We further believe that a large number of these scientists can benefit greatly if they use the PBI Shredder System as a pre-processing step to PCT-based sample preparation."

US HUPO, or the US Human Proteomic Organization, engages in scientific and educational activities to encourage the use of proteomics (study of proteins) technologies and to disseminate knowledge pertaining to the human proteome and that of model organisms. The annual meeting is one of the more important meetings held each year focusing on proteins; hundreds of scientists from throughout the world are expected to attend. The meeting was held in Raleigh, NC from March 20-23, 2011.

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Application of Pressure Cycling Technology (PCT) in Differential Extraction : Continued from Page 1

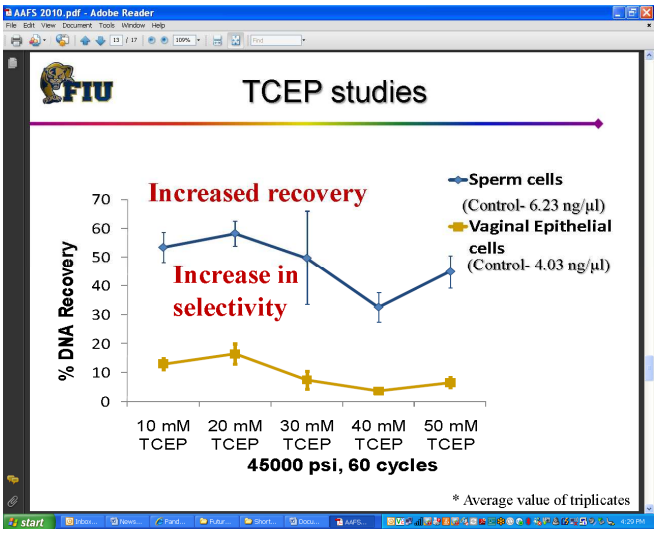

Figure 4. Effect of pressure cycling technology on cells treated with Tris (2-carboxyethyl) phosphine (TCEP), a reducing agent

CONCLUSION

- Pressure Cycling Technology (PCT) has been shown to have potential application in differential extraction.
- The high selectivity and improved recovery with the reducing agent Tris (2-carboxyethyl) phosphine (TCEP) indicates the potential for highly selective detection of sperm cells.
- Further studies will need to be done to maximize the relative amount of DNA recovered from mixtures and dried stains.

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About Pressure BioSciences, Inc.

Pressure BioSciences, Inc. (PBI) is a publicly traded company focused on the development of 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 and enzymatic reactions, immunodiagnostics, and protein purification. PBI currently focuses its efforts in 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 PBI'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. Such forward looking statements include statements regarding the advantages of the PBI Shredder System for initial sample processing; that the presentation at US HUPO will highlight the advantages of the Shredder System; the advantages of Shredder-disrupted samples followed by PCT compared to current extraction methods; the versatility of the Shredder System in disrupting a wide range of biological samples; the efficiency of the Shredder and its ability to release bio-molecules of high quality and yield; and that there are approximately 500,000 scientists worldwide who routinely extract bio-molecules, and who can benefit greatly if they use the PBI Shredder as a pre-processing step to PCT. These statements are based upon PBI'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: possible difficulties, delays and costs in the implementation of PBI's strategies that may adversely affect the commercialization of the Shredder System, PCT, and PCT-dependent products; changes in customer needs and technological innovations; other scientists may not achieve the same results reported at US HUPO; PBI's sales force may not successfully sell the Shredder and PCT product lines because scientists may not perceive the advantages of either or both; and the Company will require additional working capital to fund its operations beyond the first quarter of 2011, and there can be no assurance that the Company will be successful in obtaining such financing on acceptable terms, if at all. 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 PBI's Annual Report on Form 10-K for the year ended December 31, 2009, and other reports filed by PBI from time to time with the SEC. PBI undertakes no obligation to update any of the information included in this release, except as otherwise required by law.