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Pressure BioSciences and Phasex Announce Strategic Collaboration Addressing Broad Markets for Stable, Water-Soluble Nanoemulsions

Companies Will Combine PBI's Recently Patented Ultra Shear Technology with Phasex's Supercritical Fluid Processing Methods to Enable Development of Stable, Water-Soluble Nanoemulsions, Including CBD-Enriched Plant Oil

SOUTH EASTON, MA -- (Marketwired) -- 10/18/17 -- Pressure BioSciences, Inc. (OTCQB: PBIO) ("PBI" and the "Company"), a leader in the development and sale of innovative, broadly enabling, pressure-based solutions for the worldwide life sciences industry, today announced a collaboration with Phasex Corporation, one the world's most experienced supercritical fluid ("SCF")-based toll processors. Since 1981, Phasex has been a leader in the development of cutting-edge, industrially-viable SCF-based separation processes for extracting, purifying, recrystallizing, and fractionating a wide range of polymers, natural extracts, specialty and fine chemicals, and nutraceutical and pharmaceutical preparations. The goal of the collaboration is to combine PBI's recently patented Ultra Shear Technology ("UST") with Phasex's SCF-based processing methods to enable the development of stable, water-soluble nanoemulsions of nutraceuticals, including CBD-enriched plant oil.

Dr. Edmund Ting, Sr. Vice President of Engineering for PBI, said: "Data from scientific studies indicate that nanoemulsions of nutraceuticals and pharmaceuticals may exhibit improved absorption, higher bioavailability, greater stability, and lower levels of stabilizing additives (surfactants) compared to the larger droplet sizes resulting from current emulsion processes. Because of these significant advantages, nanoemulsions are currently the focus of many research efforts worldwide. Unfortunately, even with these increased efforts, scale-up to a cost-effective, industrial level nanoemulsion production process remains a significant challenge."

Dr. Val Krukonis, Founder of Phasex, commented: "We are impressed with the potential of UST as a complimentary technology to SCF extraction. Several customers are currently seeking new methods to turn hydrophobic extracts into stable, water-soluble formulations. UST offers the potential to solve this problem by producing stable nanoemulsions of oil-like products in water. Such formulations could potentially have enormous success in many markets, including inks, industrial lubricants, and cosmetics, as well as in pharmaceuticals and nutraceuticals, such as medically important plant oil extracts."

Mr. Hans Schonemann, President of Phasex, said: "Following discussions with our colleagues at PBI, we believe the UST platform can be scaled to a cost-effective,

commercially-viable level. This would allow production of large quantities of stable, water-soluble nanoemulsions of compounds that were previously water-insoluble, such as CBD from cannabis. Such aqueous nanoemulsions could significantly increase the absorption and bioavailability of CBD and other previously water-insoluble compounds, which we believe would subsequently result in significant increases in their commercial demand."

Mr. Richard T. Schumacher, President and CEO of PBI, said: "We believe the ability to subject liquids to UST following the Phasex SCF extraction and purification process would be a highly sought-after "Value-add" for Phasex customers. Rapidly expanding markets for non-psychoactive extracts of cannabis plant material, for instance, is an example of a potentially high demand application for our combined, synergistic technologies. Oral bioavailability of CBD in aqueous emulsions has been previously demonstrated in several studies. Combining the capabilities and experience of PBI and Phasex could effectuate commercial scale production of such formulations with long shelf stability, which in turn could potentially result in a highly profitable service model for the PBI and Phasex collaboration."

About Ultra Shear Technology

UST utilizes ultra-high pressure-driven fluid dynamic shear forces, combined with controlled temperatures, resulting in a novel homogenization process. Depending on conditions, UST concomitantly disrupts particulate materials, blends immiscible fluids, and may inactivate spoilage and pathogenic organisms such as bacteria, viruses and spores. This process offers a potential pathway to create stable nanoemulsion mixtures of otherwise immiscible fluids (such as oils and water), as well as a potential pathway to homogenized products with improved sensory and other qualities (such as food nutrition). Many oil-based nutraceuticals (including CBD oil from cannabis) may be more medically desirable, and thus commercially successful, in an orally-administered nanoemulsion. Furthermore, many industrial processes (such as inks and lubricants) should benefit from the production of high quality nanoemulsions.

About Supercritical Fluids and Supercritical Fluid Processing

A supercritical fluid is any substance at a temperature and pressure above its "critical point" where distinct liquid and gas phases do not exist. SCFs offer enhanced solubility conditions and are often suitable substitutes for undesirable organic solvents in a range of industrial and laboratory processes. Phasex applies supercritical fluid technology to the development of innovative, industrially-viable separation processes for extracting, purifying, recrystallizing, and fractionating a wide range of polymers, natural extracts, and specialty and fine chemicals. Carbon dioxide and water are the most common solvents used in SCF processing.

About Phasex Corporation

Phasex Corporation, founded in 1981, exploits the attributes of supercritical fluids in the development of superior, organic, solvent-free separation processes. Phasex focuses on applications that will help customers create value-added products. As product and process requirements continue to evolve, Phasex remains committed to developing new applications for SCF technology in order to meet the changing needs of industry as well as ever-increasing regulatory constraints.

About Pressure BioSciences, Inc.

Pressure BioSciences, Inc. ("PBI") (OTCQB: PBIO) develops, markets, and sells proprietary laboratory instrumentation and associated consumables to the estimated $6 billion life

sciences sample preparation market. Our products are based on the unique properties of both constant (i.e., static) and alternating (i.e., pressure cycling technology, or "PCT") hydrostatic pressure. PCT is a patented enabling technology platform that uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels to safely and reproducibly control bio-molecular interactions. Our primary focus is in the development of PCT-based products for biomarker and target discovery, drug development and design, bio-therapeutics characterization, soil & plant biology, forensics, and counter-bioterror applications. Major new focal market opportunities are emerging in the use of our patented, scalable, high-efficiency Ultra Shear Technology ("UST") to create stable nanoemulsions of otherwise immiscible fluids (such as oils and water), and to prepare higher quality, homogenized, extended shelf-life or room temperature stable, low-acid liquid foods that cannot be effectively prepared using existing technologies.

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. 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 risks and uncertainties discussed under the heading "Risk Factors" in the Company's Annual Report on Form 10-K for the year ended December 31, 2016, 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.

For more information about PBI and this press release, please click on the following website link: http://www.pressurebiosciences.com

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Investor Contacts:

Pressure BioSciences, Inc.

Richard T. Schumacher
President & CEO

Nathan P. Lawrence, Ph.D.
VP of Marketing and Sales
(508) 230-1828 (T)

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