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Pressure BioSciences' Celebrates Second Groundbreaking Article Published This Month on its Transformative, Patented UltraShear Technology Processing Platform

Beyond Formidable Enhancements for the Food and Beverage Industry, UST Offers Promising Applications in Drug Delivery, Cosmetics, Biotechnology, Agriculture, and Advanced Nanomaterials

SOUTH EASTON, MA / ACCESSWIRE / December 21, 2023 /Pressure BioSciences, Inc. (OTCQB:PBIO) ("PBIO" or the "Company"), a pioneer in the development and distribution of broadly enabling pressure-based instruments, consumables, and specialty process development and testing services across global industries, including food and beverage, health and wellness, nutraceuticals, cosmetics, biotherapeutics, and more, today announced the publication of a powerful visionary article in the respected industry trade magazine "Food Technology" published by the Institute of Food Technologists ("IFT").

IFT is the world's largest professional scientific non-profit organization dedicated to food and related fields, boasting a global membership exceeding 17,000 individuals. The article, entitled "UltraShear: A Transformative Technology", highlights the significant advancements in the Company's Ultra Shear Technology™ (UltraShear™ or UST™) platform for producing safer and healthier clean label (synthetic additive free) beverages and emulsions with greatly elongated room temperature stability. UST and its advancements are the result of a collaborative effort between PBIO and food scientists from The Ohio State University ("Ohio State").

Commenting on the article and recent UST achievements, Dr. Edmund Y. Ting, inventor of UST and PBIO's Senior Vice President of Engineering, stated, "We are thrilled to share this groundbreaking technology through this insightful article in *Food Technology*. The article highlights our commitment to advancing technology and providing innovative, potentially commercially-viable solutions for the food and beverage industry."

Dr. Ting continued: "UST is a novel, patented and versatile approach to ultrahigh pressure homogenization. This method maximizes shear force intensity, resulting in improved quality, consistency, nutrition, shelf-life, and manufacturability. The advantages of UST are manifested across clean label foods, beverages, and nutritional products, paving the way for applications in other sectors where robust disruptive capabilities are crucial for nanoemulsion droplet-size-related stability, activity, and other defining characteristics."

Key Highlights from the Publication:

- **UST as a Game-Changer:** Ultra Shear Technology, a patented hybrid nonthermal-thermal liquid food processing method, has emerged as an industrially-attractive solution for producing clean-label foods with a superior room temperature stability and safety profile. Work to date showcases UST's potential to address consumer demands for safer, healthier, and additive-free products.
- **Innovative UST Features:** The article outlines the unique features of UST, including its innovative, self-clearing shear valve design, fluidic isolator concept, and the use of inert ceramic materials. These innovations contribute to efficient processing, product quality preservation, and enhanced food safety.
- **Versatile Applications:** UST versatile applications suitability includes preservation, stable dispersions of plant proteins, and the formulation of food-grade nanoemulsions with superior nutritional and sensory characteristics, and stability. Research results highlight its potential for pasteurization, sterilization, and the production of stable plant protein-blended beverages *without synthetic stabilizers*.
- **Future Prospects:** UST is positioned as a technology with promising applications beyond the food and beverage industry, with enabling potential in drug delivery, nutraceuticals, cosmetics, biotechnology, agriculture, and advanced nanomaterials manufacturing.

Mr. Richard T. Schumacher, President and CEO of PBIO, concluded: "This exciting article is a pivotal resource for food & beverage companies of all sizes, delving into the potential for the Company's UST platform to revolutionize the production of clean label beverages, sauces, emulsions, and other liquid foods and beverages. With a demand from health-conscious consumers for safer and healthier processed foods, we will continue to focus UST applications in the liquid food manufacturing industry, as well as in cosmeceuticals and nutraceuticals. These industries include multinational companies of great commercial potential. We are currently in active discussions with a handful of such companies and anticipate announcing commercial relationships with several well-known and some lesser-known but up-and-coming brands in 2024."

Initial funding for this study was provided by the U.S. Department of Agriculture - National Institute of Food and Agriculture (USDA NIFA) for which PBIO and The Ohio State University are greatly appreciative.

About Pressure BioSciences, Inc.
Pressure BioSciences, Inc. (OTCQB: PBIO) is a global leader in providing innovative, broadly enabling, high pressure-based solutions for a range of industries, including biotechnology, pharmaceutical, nutraceutical, cosmeceutical, and agrochemical, as well as food and beverage manufacturing. Our products utilizeboth constant and alternating pressure. Our patented enabling technology platform, Pressure Cycling Technology (PCT), utilizes alternating cycles of pressure to control bio-molecular interactions (such as cell lysis and biomolecule extraction) safely and reproducibly. PCT-based products are beginning to be widely used for biomarker and target discovery, drug design and development, biotherapeutics characterization and quality control, soil & plant biology, forensics, and counter-bioterrorism applications. We have recently expanded our market opportunities with the acquisition of the BaroFold™ patented technology platform, allowing us to enter the bio-pharma contract services and GMP manufacturing equipment sector. We have also developed the scalable and high-efficiency pressure-based UltraShear Technology™ (UltraShear™) platform, which allows for the creation of stable nanoemulsions of otherwise

immiscible fluids. It also allows for the preparation of higher quality, homogenized, extended shelf-life or room temperature-stable low-acid liquid foods that cannot be effectively preserved using existing non-thermal technologies. Our commitment to innovation and cutting-edge technology has established PBIO as a leader in the high-pressure industry, providing unique and effective solutions to our customers.

Forward Looking Statements
This press release contains forward-looking statements. These statements relate to future events or our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our or our industry's actual results, levels of activity, performance, or achievements to be materially different from any future results, levels of activity, performance or achievements expressed, implied, or inferred by these forward-looking statements. In some cases, youcan identify forward-looking statements by terminology such as "may," "will," "should,""could,""would," "expects," "plans," "intends," "anticipates," "believes," estimates," "predicts," "projects," "potential" or "continue" or the negative of such terms and other comparable terminology. These statements are only predictions based on our current expectations and projections about future events. You should not placeundue reliance on these statements. In evaluating these statements, you should specifically consider various factors. Actual events or results may differ materially. These and other factors may cause our actual results to differ materially fromany forward-looking statement. 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, 2022, 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:
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