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Pressure BioSciences' BaroFold Platform Expected to Revolutionize Biopharmaceutical Production with Help from New Computational (AI/ML) Technologies

Artificial Intelligence/Machine Learning Also Expected to Significantly Accelerate Advancements in PBIO's Patented, Innovative, and Enabling UltraShear Processing Platform

SOUTH EASTON, MA / ACCESSWIRE / January 4, 2024 /Pressure BioSciences, Inc. (OTCQB:PBIO) ("PBIO" or the "Company"), a leading developer and provider of broadly enabling pressure-based instruments, consumables, and specialty process development and testing services across global industries, including biopharmaceuticals, nutraceuticals, and cosmeceuticals, today announced they are actively pursuing and evaluating multiple artificial intelligence ("AI") and machine learning ("ML") prospective partnerships. The Company expects such collaborations to accelerate the identification and prioritization of exciting commercial product opportunities within key markets for PBIO's patented BaroFold Technology ("BaroFold™") and Ultra Shear Technology™ ("UltraShear™" or "UST™") platforms.

BaroFold (14 issued patents) employs high pressure for the disaggregation and controlled refolding of proteins to their desired native structures to significantly improve the quality and production costs of protein therapeutics. UltraShear (8 issued patents) uses intense shear forces from ultra-high pressure valve discharge to turn oil-based supplements, therapeutics, and other water-insoluble active ingredients into stable, effectively water-soluble, highly bioavailable nanoemulsions.

Protein biopharmaceuticals ("biologics") are a revolutionary new class of drugs with superior specificity, target precision, lower toxicity, reduced side effects, and minimal drug-drug interaction concerns compared to traditional small molecule drugs. Unfortunately, the cost and time associated with biopharmaceutical R&D and manufacturing are significant hurdles.

A major PBIO goal in 2024 is to employ AI/ML tools to address a critical challenge - understanding protein folding kinetics to predict the optimal chemical environment for high-pressure refolding. This groundbreaking approach will greatly streamline biopharmaceutical R&D, resulting in more efficient, efficacious, and cost-effective processes and products.

Alexander Lazarev, Ph.D., PBIO's Chief Science Officer, said: "Inspired by the success of AI-driven protein structure prediction by DeepMind Technologies, Ltd., a Google subsidiary, PBIO is exploring potential partnerships with leading AI/ML organizations. The integration of

AI/ML in optimizing an experimental framework to discern the optimal chemical environment required for high pressure protein refolding processes has the potential to revolutionize biopharmaceutical manufacturing by improving efficiency, reducing costs, and enhancing the overall quality of biopharmaceutical products."

Dr. Lazarev continued: "We believe that AI/ML bioinformatics tools have reached the level of maturity to be useful in our service offerings. A partnership with an AI/ML tools organization could leverage their expertise in machine learning and our intellectual property and know-how on high-pressure protein refolding to make our BaroFold service offerings considerably more valuable and effective."

Jeffrey N. Peterson, PBIO Board Chairman, commented: "As powerful as the UltraShear Technology platform already is for the manufacture of long-term stable, highly bioavailable nanoemulsions, we believe that AI/ML tools offer the potential to profoundly accelerate advancements with our patented UltraShear platform, resulting in overall quality and performance increases across multiple industries, with concomitant decreases in manufacturing costs and time-to-market."

Richard T. Schumacher, President and CEO of PBIO, summarized: "We have three unique technology platforms that have been shown to be powerful, effective, and enabling via hundreds of peer-reviewed scientific publications. Our customers include some of the top protein laboratories in the world. We have 43 issued and over 20 pending patents. As solid as our technology foundation currently is, we believe the partnerships we are exploring with AI/ML organizations have the potential to revolutionize the market sectors we are in, resulting in strong commercial success in 2024 and beyond."

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:
http://www.pressurebiosciences.com
Please visit us on Facebook, LinkedIn, and Twitter.

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