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Pressure BioSciences UST-Enabled Nanoemulsions Soar Past One Year Stability Goal; Results Open Explosive Growth Potential for Water-Soluble CBD-Infused Beverages Worldwide

UST Nanoemulsions of CBD Deliver High Water-Solubility and Over One Year Storage Stability with No Degradation; UST Platform Primed to Revolutionize Food & Beverage, Biotherapeutic, Nutraceutical, and Agrochem Products

SOUTH EASTON, MA / ACCESSWIRE / July 13, 2021 /Pressure BioSciences, Inc. (OTCQB:PPIO) ("PBI" or the "Company"), a leader in the development and sale of broadly enabling, pressure-based instruments, consumables, and innovative services to the worldwide biotechnology, biotherapeutics, cosmetics, nutraceuticals, agrochemical, and food & beverage industries, today announced that processing hemp-derived cannabidiol ("CBD") with its Ultra Shear Technology™ ("UST™") platform produces high quality water-soluble nanoemulsions of CBD oil in water with the critically important benefit of scientifically proven long-term stability. Specifically, the Company reported breakthrough results in which its UST processing platform produced the consistent and extremely fine nano-dispersions of CBD oil in water that are required to achieve product stability in excess of twelve months, under both cold and room temperature storage conditions, even with multiple freeze-thaw cycles, without any visible or measurable deterioration of the nanoemulsified product.

CBD is a non-psychoactive, oil-soluble compound extracted from the cannabis plant, and is typically marketed in a plant oil solution. CBD has been widely reported to offer numerous health benefits from stress and anxiety relief, to [Schizophrenia](#), decreased [seizures](#), muscle, [joint](#), [cancer](#) and other pain, and reduced inflammation. Because CBD is oil-based, its ingestion or topical application typically results in poor absorption in water-based living systems, like humans. For example, the World Health Organization estimated CBD bioavailability from oral delivery of oil-based formulations was just [6%](#). That means most ingested CBD is wasted, passing through the body without being absorbed. Consequently, there is enormous interest in the development of truly [water-soluble CBD](#), to achieve efficient dosing delivery, absorption, and bioavailability from foods and beverages.

ProVerde Laboratories is one of the most advanced analytical testing service laboratories in the country offering testing of cannabis-derived materials, including cannabinoid profiling and particle size characterization. Dr. Christopher Hudalla, President and Chief Scientific Officer of ProVerde Labs provided powerful perspective: "We test hundreds of cannabis products on a regular basis, and the overwhelming diversity of so-called water-soluble products that we test consistently suffer from poor particle uniformity and a lack of long-term stability. This often results in cannabinoid degradation, phase separation, coalescence and

or sediment formation. The introduction of a new technology platform that can consistently produce the necessary ultra-low droplet size nanoemulsions required to deliver reliable shelf life of over one year, including resistance to freeze-thaw challenges, will be a pivotal inflection point and an explosive growth opportunity in the CBD and cannabis-derived products industry."

Mr. John Westlake, Founder and President of Canopy CBD Farms, LLC., further confirmed: "Scientific data strongly supports the critical need for hemp-derived CBD oil to be processed into water-soluble nanoemulsions to achieve the highest levels of absorption and bioavailability with optimal dosing safety and overall product cost efficiency for manufacturers and consumers. For commercial success, these CBD nanoemulsions must also be long-term stable, to help ensure that the CBD-containing product has the best opportunity to achieve its promise after months in distribution and shelf storage. In my many years in the cannabis market, this is the first time I have observed such an accomplishment: a high quality nanoemulsion of CBD oil in water with over one year of real time, rock-solid, cold and room temperature stability, even following multiple freeze-thaw cycles. These results are highly impressive."

Mr. Gary B. Smejkal, Senior Research Scientist at PBI, explained the Company's breakthrough: "Achieving long-term stability of nanoemulsions requires production processes that attain consistent, extremely low oil droplet sizes in water. Our unique formulations and patented UST processing platform use unprecedentedly high pressures to achieve repeated cycles of extreme shearing forces at controlled temperatures and flow rates, which we believe deliver the highest quality and most long-term stable CBD nanoemulsions available in the world today."

Mr. John B. Hollister, Director of Sales and Marketing at PBI, expanded on the opportunity: "CBD-containing nanoemulsions created by our innovative and proprietary UST processing platform have the potential to revolutionize the rapidly growing cannabis market, not just in food and beverage, but in multiple other areas as well, including biotherapeutics, nutraceuticals, agrochem, and cosmetics. From truly clear, water-soluble infusions in beverages that are cold and room temperature long-term stable, to predictable dosing with much faster onset of action than other edible forms, we believe the benefits and appeal for consumers will be tremendous. We are excited to have achieved this historic milestone of surpassing one-year of real time cold and room temperature stability and look forward to the impending commercial release of our initial UST-based nanoemulsion system by or before the end of 2021."

With a projected compounded annual growth rate ([CAGR](#)) of [21.2% from 2021 to 2028](#), the global CBD market is expected to grow from USD \$2.8B in 2020 to USD \$13B in 2028.

About Pressure BioSciences, Inc.

Pressure BioSciences, Inc. (OTCQB:PBIO) is a leader in the development and sale of innovative, broadly enabling, pressure-based solutions for the worldwide life sciences and other industries. 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 control bio-molecular interactions safely and reproducibly (e.g., cell lysis, biomolecule extraction). Our primary focus is the

development of PCT-based products for biomarker and target discovery, drug design and development, biotherapeutics characterization and quality control, soil & plant biology, forensics, and counter-bioterror applications. Additionally, major new market opportunities have emerged in the use of our pressure-based technologies in the following areas: (1) the use of our recently acquired, patented technology from BaroFold, Inc. (the "BaroFold" technology) to allow entry into the bio-pharma contract services sector, and (2) the use of our recently-patented, scalable, high-efficiency, pressure-based Ultra Shear Technology ("UST") platform to (i) create stable nanoemulsions of otherwise immiscible fluids (e.g., oils and water) and to (ii) prepare higher quality, homogenized, extended shelf-life or room temperature stable low-acid liquid foods that cannot be effectively preserved using existing non-thermal technologies.

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, you can 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 place undue 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 from any 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, 2020, 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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