May 23, 2023

Ceapro Inc. Presents Encouraging Results from Research Collaboration Study with McMaster University Evaluating PGX-Processed Yeast Beta Glucan for Interstitial Lung Diseases

– Results from the completed Collaborative Health Research Projects (CHRP) study with McMaster University presented at the American Thoracic Society (ATS) International Conference –

– Data demonstrated that PGX-processed yeast beta glucan (PGX-YBG) is respirable and able to safely and reliably reprogram macrophages in the lungs in pre-clinical mouse models –

– Company advancing toward go/no-go milestone for further evaluation of PGX-YBG microparticles in a Phase 1 clinical study as a potential much-needed therapeutic option for a broad spectrum of fibrotic lung diseases –

EDMONTON, Alberta, May 23, 2023 (GLOBE NEWSWIRE) -- **Ceapro Inc. (TSX-V: CZO; OTCQX: CRPOF) ("Ceapro" or the "Company")**, a growth-stage biotechnology company focused on the development and commercialization of active ingredients for healthcare and cosmetic industries, today announced encouraging results from it's completed pre-clinical CHRP study conducted with McMaster University evaluating PGX-processed yeast beta glucan (PGX-YBG) as a potential therapeutic option for individuals suffering from interstitial lung diseases (ILD).

The data were presented by Mrs. Safaa Naiel, Ph.D. candidate, in an oral presentation titled, "*Reprogramming Rogue Macrophages: Yeast Beta-Glucan Microparticles as a Macrophage Modulator for Lung Fibrosis,"* at the American Thoracic Society (ATS) International Conference being held May 19-24, 2023 in Washington, DC. The positive results from the CHRP study, demonstrated PGX-YBG was respirable, and small enough to safely and reliably reprogram macrophages in the lungs of mice, providing confidence in its potential to safely penetrate deep into human lungs when self-administered using a hand-held inhaler.

"We are excited about our progress on formulating PGX-processed yeast beta glucans into inhalable dosage forms as confirmed by industry-standard aerosolization testing strategies, enhancing the translational potential of the technology platform for human clinical use," said Dr. Todd Hoare, Professor in the Department of Chemical Engineering at McMaster University and Canada Research Chair in Engineered Smart Materials and Principal

Investigator for this CHRP project.

ILD damages the tissues between the small air sacs in the lungs (alveoli) and the blood vessels around them. This makes it increasingly difficult to breathe, and progressively harder for the oxygen to move out of the lungs and into the blood and tissues where it is needed. ILD represent a significant unmet medical need and is currently putting a major strain on healthcare systems around the globe. In 2022, a peer-reviewed article published in the journal of *BMC Pulmonary Medicine* reported that, "globally, the median total direct cost for ILD equates to 51% of a country's GDP per capita and has been increasing over time."[1]

One of the most prevalent and lethal ILD is Idiopathic Pulmonary Fibrosis (IPF), an area of significant unmet need. Prior to the pandemic, Ceapro and accomplished researchers from McMaster University teamed up to develop a novel drug formulation for the potential treatment of IPF. For the study, researchers utilized yeast beta glucan (YBG), a fibre found in the cell walls of baker's yeast cells, which is known to stimulate the body's immune system to react to threats and which is used globally as an immune stimulating natural health supplement. Conventional spray dried YBG is not respirable as it is too large to enter the human lung. In contrast, YBG that is processed using Ceapro's patented PGX technology (PGX-YBG) is highly purified, with a much smaller particle size.

Since PGX-YBG can be uniformly "loaded" with a variety of bioactives, it was originally being investigated as a delivery system for inhaled therapeutics. Through the research collaboration, McMaster researchers found that, not only was PGX-YBG a safe and effective carrier that could deliver therapeutic actives, but that it also possesses the ability to reprogram the body's immune system to prevent fibrogenesis (the development of harmful, fibrotic tissue) on its own. This encouraging result makes PGX-YBG a promising novel active with high potential as a new inhalable immune-therapeutic/-prophylactic treatment for a variety of severe ILD including IPF and COVID-19 related lung fibrosis.

"Until now, we have had very limited treatment options for fibrotic lung disease since approved medications can only slow down the progression of the disease. We are very encouraged by the results from this study showing that PGX-YBG has the ability of reprogramming macrophages to prevent fibrogenesis in mice. If these results are replicated in human trials, this treatment approach could profoundly change the landscape of fibrotic lung disease therapeutics," added Dr. Martin Kolb, a respected Pulmonologist and Professor of Medicine at McMaster University.

"Our initial hypothesis was that PGX-YBG particles could be safely delivered into human lungs. These results provide encouraging confirmation of that hypothesis and bolster our confidence for the continued development toward a potential treatment option for IPF," stated Gilles Gagnon, President and CEO of Ceapro. "This evidence, along with the latest *in-vitro* and *in-vivo* data, provides the validation that PGX-YBG holds significant potential as a therapeutic strategy for a broad spectrum of fibrotic end-point lung diseases such as COVID-19 related lung fibrosis and IPF. With these results now in hand, we are evaluating our pre-planned go/no-go decision for advancement of this program into a Phase 1 clinical trial and expect to provide updates in Q3 of this year."

Additional results from these breakthrough findings will be presented at other major conferences, including results on aerosolization testing to be presented by Ph.D. candidate,

Nate Dowdall at The 2023 CSPS/CC-CRS Annual Symposium - The Next Frontiers in Pharmaceutical Sciences to be held on May 24-26, 2023 at the Metropolitan Toronto Convention Centre (MTCC), in an abstract titled, "*Inhalable Yeast Beta-Glucan Microparticles Prepared by Pressurized Gas eXpanded (PGX) Liquid Technology for the Treatment of Fibrotic Lung Diseases*."

About Idiopathic Pulmonary Fibrosis (IPF)

IPF is a progressive disease with a median survival from 2-7 years. While IPF can occur at any age, up to 1 out of every 200 individuals above age 65 have IPF. With an aging population and studies showing an alarming rate (44.9%) of COVID-19 patients developing IPF post infection[2], prevalence and impact of IPF are expected to grow.

About Pressurized Gas eXpanded Liquid Technology (PGX)

Ceapro's patented Pressurized Gas eXpanded (PGX) Technology is a unique and disruptive technology with several key advantages over conventional drying and purification technologies that can be used to process biopolymers into high-value, fine-structured, open-porous polymer structures and novel biocomposites. PGX Technology is ideally suited for processing challenging high-molecular-weight, water-soluble biopolymers. It has the ability to make ultra-light, highly porous polymer structures on a continuous basis, which is not possible using today's conventional technologies. PGX Technology was invented by Dr. Feral Temelli from the Department of Agricultural, Food & Nutritional Science of the University of Alberta (U of A) along with Dr. Bernhard Seifried, now Senior Director of Research and Technology at Ceapro. The license from U of A provides Ceapro with exclusive worldwide rights in all industrial applications.

About McMaster University

McMaster University, one of four Canadian universities listed among the Top 100 universities in the world, is renowned for its innovation in both learning and discovery. It has a student population of 23,000 and more than 175,000 alumni in 140 countries. McMaster University is a globally renowned institution of higher learning and an innovative research community committed to advancing human and societal health and well-being. Our focus on collaboratively exchanging ideas and approaches makes us uniquely positioned to pioneer ground-breaking solutions to real-world problems leading to a Brighter World.

About Ceapro Inc.

Ceapro Inc. is a Canadian biotechnology company involved in the development of proprietary extraction technology and the application of this technology to the production of extracts and "active ingredients" from oats and other renewable plant resources. Ceapro adds further value to its extracts by supporting their use in cosmeceutical, nutraceutical, and therapeutics products for humans and animals. The Company has a broad range of expertise in natural product chemistry, microbiology, biochemistry, immunology and process engineering. These skills merge in the fields of active ingredients, biopharmaceuticals and drug-delivery solutions. For more information on Ceapro, please visit the Company's website at www.ceapro.com.

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[1] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9020025/

[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8983072/

Source: Ceapro Inc.