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Ceapro Inc. Provides Update on Development of an Inhalable Therapeutic for COVID-19

– First milestone successfully achieved in early stages of the ongoing research project with McMaster University

– Confirmed capability of PGX Technology to optimize and standardize the size and morphology of yeast beta-glucan (PGX-YBG) suitable for lung inhalation

– In-vitro study with human cell lines demonstrated that PGX-YBG obtained from different sources exhibited significant stimulatory effect on human immune response

EDMONTON, Alberta, Aug. 18, 2020 (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 provided an update on its ongoing collaboration with McMaster University to develop an inhalable therapeutic for COVID-19.

The project, entitled "*PGX-processed yeast beta-glucans as an inhalable immunomodulating therapeutic for COVID-19 patients,*" jointly funded by Mitacs and Ceapro, is under the leadership of Dr. Kjetil Ask, a pulmonary fibrosis expert, and Dr. Todd Hoare respectively from departments of Medicine and Chemical Engineering at McMaster University.

To assess the potential of PGX-processed yeast beta-glucan (PGX-YBG) in practical application for COVID-19, the project was designed with four aims or milestones. The first milestone was to optimize the size and morphology of the best PGX-YBG for immunomodulation while the second milestone was to examine tolerability and safety of inhaled PGX-YBG in naïve animal models. The first milestone of the project was fully achieved, and the second milestone is near completion.

In order to derive the best and most suitable PGX-YBG product, the PGX Research and Development (R&D) Team at Ceapro worked very diligently to source, fractionate, and modify the PGX demo unit to process yeast beta glucan obtained from various sources. Surface area, surface morphology and particle size distribution measurements conducted by Ceapro and the research team at McMaster confirmed that, unlike the yeast beta-glucan currently available on the market, the PGX-processed YBG particles consistently generated from the retained raw material are small enough for effective inhalation.

"We are excited that we have been able to fabricate particles that have the targeted properties for inhalation, enabling the effective delivery of the particles to patients' lungs pending the safety and efficacy animal trials now underway. As this project continues, our

confidence in the potential of Ceapro's materials to treat late-stage COVID-19 patients and make a real-time impact on preserving lives during the pandemic continues to build," reported Dr. Todd Hoare.

Dr. Kjetil Ask added, "If this size optimized PGX-YBG passes the tolerability, safety and therapeutic animal tests that we have already initiated, this material could quite quickly contribute as an immune modulator and anti-fibrotic treatment option for the most severe COVID-19 patients. Additionally, and equally exciting, the possibility of using PGX-YBG as an inhalable carrier of other drugs, would potentially allow the direct delivery of additional treatment options and increase their bioavailability in the lung, while reducing potential side effects."

In parallel to the animal studies conducted at McMaster University, Ceapro also outsourced an *in-vitro* study to assess the immune response of the PGX-YBG on human receptors. The activity of PGX-YBG was tested on two human Dectin isotypes (Dectin-1a and Dectin-1b) involved in the modulation of the innate human immune response. The conclusion of this *in-vitro* study was that PGX-YBG exhibited significant stimulatory effect on human Dectin-1a and Dectin-1b receptors. Due to the results seen in the *in-vitro* study, the Company expects that PGX-YBG will stimulate the human immune response once inhaled into the lungs and potentially prevent reactions like the cytokine storm. The results demonstrated in the *in-vitro* study were also consistent with results seen in the preliminary biological study where PGX-YBG was found to modulate the immune system without causing the undesirable side-effects associated with other yeast beta-glucan.

"We are very proud of the work that has been conducted so far and believe we are well-positioned to offer an additional tool in the fight against COVID-19, which is having devastating effects worldwide. With the expected completion of the third and fourth goals related to tolerability, safety and efficacy studies with both naïve and pre-clinical animal models as early as mid-October, our teams are positioning us to be ahead of schedule. Hoping for favorable pre-clinical results, preparations of a Phase 1/2 clinical trial protocol will be commenced immediately and planned to be submitted to Health Authorities during Q4 2020. Given that yeast beta-glucan is already approved as a pharmaceutical additive, we expect to quickly develop PGX-YBG as a fast-acting inhalable stand-alone therapeutic and/or delivery system to treat severe inflammation observed in COVID-19 patients and other fibrotic end-point disease in the lung," commented Gilles Gagnon, M.Sc., MBA, President and CEO of Ceapro. "We look forward to providing continued updates as we progress through the next milestones of this study."

About *Pressurized Gas eXpanded Liquid Technology (PGX)*

Ceapro's patented Pressurized Gas eXpanded (PGX) 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 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 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 Engineering 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.

About Mitacs

Mitacs is a national, not-for-profit organization that has designed and delivered research and training programs in Canada for 20 years. Working with over 100 post-secondary institutions, 6,000 companies, and both federal and provincial governments, Mitacs builds partnerships that support industrial and social innovation in Canada.

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 atwww.ceapro.com.

For more information contact:

Jenene Thomas
JTC Team, LLC
Investor Relations and Corporate Communications Advisor
T (US): +1 (833) 475-8247
E: czo@jtcir.com

Issuer:

Gilles R. Gagnon, M.Sc., MBA
President & CEO
T: 780-421-4555

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Source: Ceapro Inc.