



Aeterna Zentaris Announces Evaluation and Potential Development of an Oral Prophylactic Bacterial Vaccine Against COVID-19 Through Exclusive Option Agreement with Julius-Maximilians-University Wuerzburg

- *Company secures next step to continue to build-out pipeline of assets*
- *University researchers developed a proprietary and orally active bacterial vaccine platform technology currently undergoing pre-clinical studies for the prevention of coronavirus diseases, including COVID-19*
- *Aeterna Zentaris to evaluate the University's coronavirus vaccine platform technology including COVID-19 under an exclusive option agreement*

CHARLESTON, S.C., February 2, 2021 -- [Aeterna Zentaris Inc.](#) (NASDAQ: AEZS) (TSX: AEZS), through its wholly-owned subsidiary Aeterna Zentaris GmbH, ("Aeterna" or the "Company"), a specialty biopharmaceutical company commercializing and developing therapeutics and diagnostic tests, today announced that the Company has entered into an exclusive option agreement to evaluate a preclinical potential COVID-19 vaccine developed at the Julius-Maximilians-University Wuerzburg (the "University"), one of Germany's leading research and teaching universities. The vaccine technology developed at the University uses a typhoid fever vaccine as a carrier strain and has the potential to be an orally active COVID-19 (SARS-CoV-2) live-attenuated bacterial vaccine.

Under the option agreement entered into with the University, Aeterna has the right to negotiate an exclusive worldwide license to develop this technology for the prevention of coronavirus diseases, including COVID-19. A scientific advice meeting with the German authorities at Paul-Ehrlich Institute has been scheduled by the University to discuss a roadmap towards initiating a first-in-human clinical trial. Aeterna believes that, if it is determined that there is sufficient data to advance into human clinical trials, the development program for this particular COVID-19 vaccine is expected to be abbreviated because extensive clinical safety data is already available for the underlying vaccine strain, *Salmonella* Typhi Ty21a. Aeterna expects to make a decision whether to exercise its option to negotiate a license for that technology by mid 2021.

"While vaccines for COVID-19 have been developed, we believe there is opportunity for improvement. That includes the potential to develop a more cost-effective oral alternative with less onerous storage requirements than the currently approved COVID-19 vaccines," commented [Dr. Klaus Paulini](#), Chief Executive Officer of Aeterna Zentaris. "We are optimistic that results from further studies of this new vaccination approach may offer a much needed, safe and effective immunization alternative against COVID-19. Aeterna will contribute its expertise and experience in preclinical development and GMP-compliant manufacturing to the project."

Prof. Thomas Rudel of the University added: “Our new vaccine technology based on the live-attenuated *Salmonella* Typhi Ty21a strain modified to present two viral antigens, opens the opportunity for a new oral vaccination strategy which may have the potential to prevent people from infection with SARS-CoV-2. In addition, the use of dual antigens in one vaccine strain, may lower the likelihood of evolution of resistant viral mutants. We believe that a positive decision by Aeterna Zentaris to license this technology will start a fruitful collaboration with Aeterna, with the aim to begin the clinical development as soon as possible.”

About the University’s Potential COVID-19 Vaccine

The technology underlying the new vaccine approach is based on the bacterium *Salmonella* Typhi Ty21a which has been engineered to express and secrete two coronavirus antigens fused to an immunological adjuvant peptide. The plasmid-maintenance system is free of antibiotic resistance genes. The specific bacterial vector strain enables oral application and release of the proteins into the gut system which will consequently via M-cells stimulate mucosal and systemic immunity.

The *Salmonella* Typhi Ty21a carrier strain has been safely used worldwide in more than 150 million administered doses. Some of those existing vaccine products have been shown to be stable at fridge temperature of 2°C to 8°C. While the use and characteristics of the University’s COVID-19 vaccine candidate remain to be demonstrated through further preclinical and clinical studies, the goal is to develop an oral dosage form COVID-19 vaccine that can be stored in a common fridge or at room temperature.

About COVID-19

COVID-19 is the disease caused by a new coronavirus called SARS-CoV-2, and was first reported in December 2019 in Wuhan, Hubei province, China. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness.

Globally over 102 million cases and over 2.2 million deaths are reported since the start of the pandemic. Currently, there are no definite approved therapies endorsed by the World Health Organization for COVID-19, focusing only on supportive care and preventive immunization.

About Aeterna Zentaris Inc.

Aeterna Zentaris Inc. is a specialty biopharmaceutical company commercializing and developing therapeutics and diagnostic tests. The Company’s lead product, macimorelin, is the first and only U.S. FDA and European Commission approved oral test indicated for the diagnosis of adult growth hormone deficiency (AGHD). Macimorelin is currently marketed in the United States under the tradename Macrilen™ through a license agreement with Novo Nordisk where Aeterna receives royalties on net sales. According to a commercialization and supply agreement, MegaPharm Ltd. will seek regulatory approval and then commercialize macimorelin in Israel and the Palestinian Authority. Additionally, upon receipt of pricing and reimbursement approvals, Aeterna expects that macimorelin will be marketed in Europe and the United Kingdom through a recently established license agreement with

Consilient Health Ltd. and Aeterna will receive royalties on net sales and other potential payments.

Aeterna is also leveraging the clinical success and compelling safety profile of macimorelin to develop it for the diagnosis of childhood-onset growth hormone deficiency (CGHD), an area of significant unmet need.

Aeterna is actively pursuing business development opportunities for the commercialization of macimorelin in Asia and the rest of the world, in addition to other non-strategic assets to monetize their value. For more information, please visit www.zentaris.com and connect with the Company on [Twitter](#), [LinkedIn](#) and [Facebook](#).

Forward-Looking Statements

This press release contains forward-looking statements (as defined by applicable securities legislation) made pursuant to the safe-harbor provision of the U.S. Securities Litigation Reform Act of 1995, which reflect our current expectations regarding future events. Forward-looking statements include those relating the potential of the University's coronavirus vaccine platform technology (and any vaccine candidates using that technology) to be effective as a vaccine against COVID-19 (SARS-CoV-2) or any other coronavirus disease (or to offer an alternative to other approved vaccines against COVID-19, the ability to obtain approval to commence any clinical trial or the timeline to develop any potential vaccine, the characteristics of any potential vaccine (including cost, storage temperatures and oral availability) and the ability of the Company to negotiate a mutually agreeable license agreement with the University, those relating to the Company obtaining approval of macimorelin for CGHD, the Company's ability to secure marketing partners for macimorelin in other key markets, the timing of the commencement of the CGHD Study P02, and may include, but are not limited to statements preceded by, followed by, or that include the words "will," "expects," "believes," "intends," "would," "could," "may," "anticipates," "potential" and similar terms that relate to future events, performance, or our results. Forward-looking statements involve known and unknown risks and uncertainties, including those discussed in this press release and in our Annual Report on Form 20-F, under the caption "Key Information - Risk Factors" filed with the relevant Canadian securities regulatory authorities in lieu of an annual information form and with the U.S. Securities and Exchange Commission. Known and unknown risks and uncertainties could cause our actual results to differ materially from those in forward-looking statements. Such risks and uncertainties include, among others, that the University's coronavirus vaccine platform technology (and any vaccine candidates using that technology) has never been tested in humans and so further pre-clinical or clinical studies of that technology and any vaccine developed using that technology may not be effective as a vaccine against COVID-19 (SARS-CoV-2) or any other coronavirus disease, that such technology or vaccines may not receive the necessary approvals to be studied in human clinical trials, that the timeline to develop a vaccine may be longer than expected, that such technology or vaccines may not be capable of being used orally, may not have the same characteristics (including storage temperatures) as vaccines previously approved using the Salmonella Typhi Ty21a carrier strain, any such vaccine developed using the University's technology may not lower the evolution of resistant viral mutants or may not be competitive with vaccines developed by third parties against COVID-19, and that the Company may not be successful in negotiating a license to such technology from the University if the Company elects to exercise its option to negotiate, our ability to raise capital and obtain financing to continue our currently planned operations, our ability to continue to list our Common Shares on the NASDAQ, our now heavy dependence on the success of Macrilen™ (macimorelin) and related out-licensing arrangements and the continued availability of funds and

resources to successfully commercialize the product, including our heavy reliance on the success of the License Agreement with Novo Nordisk, the global instability due to the global pandemic of COVID-19, and its unknown potential effect on our planned operations, including studies, our ability to enter into out-licensing, development, manufacturing, marketing and distribution agreements with other pharmaceutical companies and keep such agreements in effect, our reliance on third parties for the manufacturing and commercialization of Macrilen™ (macimorelin), potential disputes with third parties, leading to delays in or termination of the manufacturing, development, out-licensing or commercialization of our product candidates, or resulting in significant litigation or arbitration, uncertainties related to the regulatory process, unforeseen global instability, including the instability due to the global pandemic of the novel coronavirus, our ability to efficiently commercialize or out-license Macrilen™ (macimorelin), our reliance on the success of the pediatric clinical trial in the European Union (“EU”) and U.S. for Macrilen™ (macimorelin), the degree of market acceptance of Macrilen™ (macimorelin), our ability to obtain necessary approvals from the relevant regulatory authorities to enable us to use the desired brand names for our product, our ability to successfully negotiate pricing and reimbursement in key markets in the EU for macimorelin, any evaluation of potential strategic alternatives to maximize potential future growth and shareholder value may not result in any such alternative being pursued, and even if pursued, may not result in the anticipated benefits, our ability to take advantage of business opportunities in the pharmaceutical industry, our ability to protect our intellectual property, and the potential of liability arising from shareholder lawsuits and general changes in economic conditions. Investors should consult our quarterly and annual filings with the Canadian and U.S. securities commissions for additional information on risks and uncertainties. Given these uncertainties and risk factors, readers are cautioned not to place undue reliance on these forward-looking statements. We disclaim any obligation to update any such factors or to publicly announce any revisions to any of the forward-looking statements contained herein to reflect future results, events or developments, unless required to do so by a governmental authority or applicable law.

Investor Contact:

Jenene Thomas
JTC Team
T (US): +1 (833) 475-8247
E: aezs@jtcir.com