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OHIO STATE INNOVATION FOUNDATION EXCLUSIVELY LICENSES COVID-19 VACCINE TECHNOLOGY TO BIOLOGICAL E. LIMITED

OSIF Licenses SARS-CoV-2 Vaccine Candidates Using Live Attenuated Measles Virus Vector Exclusively to BE

Hyderabad (India), December 8, 2020: Biological E. Limited (BE), a Hyderabad-based vaccine & pharmaceutical company, and the Ohio State Innovation Foundation (OSIF), USA, today announced the execution of an exclusive license agreement for a COVID-19 vaccine technology. OSIF has licensed novel live attenuated measles virus vectored vaccine candidates against SARS-CoV-2, which were developed by the Ohio State University College of Veterinary Medicine, exclusively to Biological E. Limited (BE).

BE will be responsible for the evaluation and further development, including the commercialization of the vaccine candidate(s).

There is an urgent need to protect the global population with SARS-CoV-2 vaccines that are safe and efficacious, can be manufactured with efficient, scalable processes and have reasonable costs to store and distribute. The licensed intellectual assets were developed in the laboratories of Jianrong Li, DVM, PhD, and Stefan Niewiesk, DVM, PhD, as a response to the global pandemic. The vaccine candidates are live attenuated recombinant viral vectored vaccines based on measles vaccine strains.

"Translating this vaccine platform into the hands of a global vaccine company for further evaluation and development is a critical step and we are excited that Biological E has taken on this role," said Dr. Patrick Green, Associate Dean for Research and Graduate Studies, Ohio State University College of Veterinary Medicine.

The Ohio State University College of Veterinary Medicine (CVM) team's approach utilizes the SARS-CoV-2 spike (S) protein as a target protein for SARS-CoV-2 vaccine candidates, generating a series of attenuated recombinant measles viruses (rMeVs) expressing SARS-CoV-2 antigens. All resultant rMeVs, the basis for the vaccine candidates, grow to high virus titer in Vero cells, a WHO-approved cell line for vaccine production. They were also shown to express the

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recombinant S antigens, a critical step in developing a SARS-CoV-2 vaccine. The rMeV-based SARs-CoV-2 vaccine candidates have proceeded through proof-of-concept trials in multiple animal models – demonstrating successful production of SARS-CoV-2 antibodies.

"BE has been working to develop a safe and effective vaccine for the COVID-19. BE is very happy to help further this innovation and expand that effort," said Ms. Mahima Datla, Managing Director, Biological. E. Limited.

"With this licensing transaction, we have expanded the repertoire of the candidate vaccine(s) that we are evaluating, both in terms of the antigen and the platform technology," said Mr. Narender Dev Mantena, Director, BioE Holdings Inc., who heads BE's novel vaccine initiative.

ABOUT COLLEGE OF VETERINARY MEDICINE (CVM), OHIO STATE UNIVERSITY

Founded in 1885, The Ohio State University College of Veterinary Medicine is ranked fourth in the nation by U.S. News & World Report. The College is home to Ohio State's Center for Retrovirus Research comprised of internationally recognized leaders in the field who work to facilitate interdisciplinary investigations for prevention and treatment of retrovirus diseases of humans and animals. In addition, the College's Infectious Disease Signature Program is an integral part of the Ohio State University Infectious Disease Institute, focused on controlling the spread and severity of infectious diseases through the creation and dissemination of knowledge, practices and solutions. Multidisciplinary active networks in high impact programmatic areas implement this mission. The college includes degree programs in Veterinary Medicine, Comparative Biomedical Sciences and a unique Master's degree in Veterinary Public Health, in partnership with the College of Public Health and operates a large referral Veterinary Health System. Learn more at vet.osu.edu.

ABOUT OHIO STATE INNOVATION FOUNDATION (OSIF)

The Ohio State Innovation Foundation, is a 501(c)(3) organization formed by The Ohio State University in 2012 to hold, manage and facilitate commercialization of the university's intellectual property.

ABOUT BIOLOGICAL E. LIMITED

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Biological E. Limited (BE), a Hyderabad-based Pharmaceuticals & Biologics Company founded in 1953, is the first private sector biological products company in India and the first pharmaceutical company in Southern India. BE develops, manufactures and supplies vaccines and therapeutics. BE supplies its vaccines to over 100 countries and its therapeutic products are sold in India and the USA. BE currently has 8 WHO-pregualified vaccines in its portfolio.

In recent years, BE has embarked on new initiatives for organisational expansion such as developing generic injectable products for the regulated markets, exploring synthetic biology and metabolic engineering as a means to manufacture APIs sustainably and developing novel vaccines for the global market.

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