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Merck KGaA, Darmstadt, Germany Announces its Support of Jenner Institute Reaching First Milestone in Covid-19 Vaccine Manufacturing

- Recently developed manufacturing platform allows large-scale manufacturing
- Joint team reduced process development time to two months from a year – a critical step to manufacturing Covid-19 vaccine at scale
- "We have brought the future of vaccine manufacturing to the present," says Udit Batra, CEO, Life Science business of Merck KGaA, Darmstadt, Germany

Darmstadt, Germany, April 14, 2020 – Merck KGaA, Darmstadt, Germany, a leading science and technology company, and <u>The Jenner Institute</u> today announced that The Jenner Institute has laid the foundation for large-scale production of its Covid-19 vaccine candidate, ChAdOx1 nCoV-19.

With patients enrolled for clinical trials for this vaccine, rapid development of the large-scale manufacturing process is a critical step in quickly and safely delivering it from the lab to patients.

"We have brought the future of vaccine manufacturing to the present," said Udit Batra, member of the Executive Board, and CEO, Life Science business of Merck KGaA, Darmstadt, Germany. "This is an important step in treating Covid-19 and other diseases that impact global public health. This work marks a milestone in the





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vaccine manufacturing development journey, as clinical testing continues to advance."

Tapping into the previous work by the Life Science business of Merck KGaA, Darmstadt, Germany provided a solid head start for plans to scale-up the manufacture of Jenner's Covid-19 vaccine candidate. Developing the manufacturing process itself would take at least six months to a year, but in just two months' time, the Life Science business of Merck KGaA, Darmstadt, Germany supported the Jenner team and their collaborators to evaluate the existing manufacturing platform for use with the new vaccine candidate, and improved critical process steps.

Over the last two years, the collaboration between the Life Science business of Merck KGaA, Darmstadt, Germany and The Jenner Institute has led to the development of a rapid, scalable platform following good manufacturing practices and using disposable technologies for the Institute's adenovirus platform. While the initial work was developed with a rabies vaccine candidate, the platform was then validated with different adenovirus constructs aiming at accelerating future vaccine development and manufacturing. Speed is a major challenge when facing a new outbreak such as this unprecedented COVID-19 pandemic. The organizations first announced their partnership to develop more robust and scalable vaccine manufacturing processes in April 2018.

"In an unprecedented time period, The Jenner Institute's team was able to develop the 10-liter manufacturing scale process based on the previously generated platform with the Life Science business of Merck KGaA, Darmstadt, Germany, preparing us for the next round of scale-up efforts," said Dr. Sandy Douglas, vaccine manufacturing scale-up project lead at The Jenner Institute. "Industry collaborations, such as this one, showcase the value that these efforts have in accelerating our response to outbreaks and pandemics and quickly delivering lifesaving vaccines to benefit the global population."

About the Jenner Institute

The Jenner Institute was founded in November 2005 to develop innovative vaccines against major global diseases. Uniquely it focuses both on diseases of humans and livestock and tests new vaccine approaches in parallel in different species. A major theme is translational research involving the rapid early-stage development and assessment of new vaccines in clinical trials.

The Institute comprises the research activities of more than 30 <u>Jenner Investigators</u> who head leading research groups spanning human and veterinary vaccine research and development. Together the



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Institute Investigators comprise one of the largest non-profit sector research and development activities in vaccinology.

Jenner Institute Investigators, through the support of many funders, are developing new vaccine candidates against major global infectious diseases. New vaccines against malaria, tuberculosis and HIV are currently in field trials in the developing world. Research is also underway on livestock vaccines against foot and mouth disease, avian influenza, bovine tuberculosis and other major causes of economic loss.

The Institute is a partnership between the <u>University of Oxford</u> and <u>The Pirbright Institute</u> and is the successor to the former Edward Jenner Institute for Vaccine Research. The Institute is supported by the <u>Jenner Vaccine Foundation</u>, a UK registered charity and advised by the <u>Jenner Institute Scientific Advisory Board</u>.

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About Merck KGaA, Darmstadt, Germany

Merck KGaA, Darmstadt, Germany, a leading science and technology company, operates across healthcare, life science and performance materials. Around 57,000 employees work to make a positive difference to millions of people's lives every day by creating more joyful and sustainable ways to live. From advancing gene editing technologies and discovering unique ways to treat the most challenging diseases to enabling the intelligence of devices − the company is everywhere. In 2019, Merck KGaA, Darmstadt, Germany generated sales of €16.2 billion in 66 countries.

The company holds the global rights to the name and trademark "Merck" internationally. The only exceptions are the United States and Canada, where the business sectors of Merck KGaA, Darmstadt, Germany operate as EMD Serono in healthcare, MilliporeSigma in life science, and EMD Performance Materials. Since its founding 1668, scientific exploration and responsible entrepreneurship have been key to the company's technological and scientific advances. To this day, the founding family remains the majority owner of the publicly listed company.