

## CEPI awards US\$ 34M contract to CureVac to advance *The RNA Printer*<sup>™</sup>—a disruptive, transportable mRNA vaccine manufacturing platform that can rapidly combat multiple diseases

Oslo, 27 February 2019—The Coalition for Epidemic Preparedness Innovations (CEPI) and CureVac AG, a biopharmaceutical company pioneering the field of mRNA-based vaccines, have announced a partnership agreement worth up to US\$ 34 million for the ongoing development of *The RNA Printer*<sup>™</sup> prototype—a transportable, down-scaled, automated messenger RNA (mRNA) printing facility. This innovative platform will provide a rapid supply of lipid-nanoparticle (LNP)-formulated mRNA vaccine candidates that can target known pathogens (including Lassa Fever, Yellow Fever, and Rabies) and prepare for rapid response to new and previously unknown pathogens (referred to by WHO as “Disease X”).

Under the terms of the three-year partnership agreement, CureVac will use its mRNA platform to undertake preclinical development of vaccine candidates against Lassa Fever (which is listed on the WHO’s R&D blueprint for priority diseases), Rabies, and Yellow fever. Following successful preclinical tests for the three named indications, two of the vaccine candidates will undergo phase 1 clinical trials in humans.

### **How LNP-formulated mRNA vaccines work**

The genetic blueprint for an organism is contained within its DNA. The genetic code stored inside DNA provides specific instructions for the fabrication of proteins.

A molecule—known as mRNA—transports genetic information from the DNA to the cell machinery responsible for protein production.

Traditional vaccine approaches administer live or inactivated pathogens to generate an immune response. However, the LNP mRNA vaccine candidate delivers mRNA into a cell, instructing it to produce a specific protein or antigen (ie, a foreign substance that induces an immune response). To prevent degradation of the mRNA and improve vaccine effectiveness, the mRNA is also encapsulated in a protective shell of lipid nanoparticles.

### **The *The RNA Printer*<sup>™</sup> manufacturing facility**

*The RNA Printer*<sup>™</sup> is capable of producing several grams of LNP-formulated mRNA (enough to produce more than a hundred thousand doses), within just a few weeks. This platform can also produce mRNA vaccine candidates against multiple pathogens using the same technology, saving time and reducing costs compared with other vaccine platforms.

“CureVac’s vaccine platform could be a game-changer, radically improving our ability to respond to the emergence of Disease X”, said Richard Hatchett, CEO of CEPI. “Disease X could

emerge suddenly and have deadly consequences—we've seen this happen with Ebola, MERS coronavirus, Zika, and countless other diseases. That's why we're striving to develop rapid-response vaccine platforms—like CureVac's mRNA technology—to defend against these unknown pathogens. CEPI has now established partnership agreements totaling more than \$50 million in three such platforms”.

“CureVac's mRNA technology can be designed to encode for many proteins or antigens, offering rich potential for the development of vaccines to protect against deadly pathogens,” said Daniel Menichella, CEO of CureVac. “We are excited to be working with CEPI to unlock *The RNA Printer™*'s potential for rapid onsite delivery to outbreak regions, as well as in hospital pharmacy settings for personalised medicine production.”

The project is scheduled to begin in March, 2019.

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#### About vaccine platform technology

The term “vaccine platform technology” broadly refers to a system that uses the same basic components as a backbone, but can be adapted for use against different pathogens by inserting new sequences.

#### About *The RNA Printer™*

*The RNA Printer™* is a prototype for a transportable, down-scaled, automated, local mRNA printing facility. It is capable of producing several grams of LNP-formulated mRNA (ie, more than a hundred thousand doses), within a just few weeks. *The RNA Printer™* is intended for both the hospital pharmacy setting catering to production of personalised medicines and fast, onsite delivery to outbreak regions.

The CureVac-CEPI project is also in collaboration with several renowned international organisations including the University of Wisconsin-Madison, VisMederi, Institute of Tropical Medicine/Tubingen, and an additional technology and engineering partner.

#### About CEPI

CEPI is an innovative partnership between public, private, philanthropic, and civil organisations launched in Davos in 2017 to develop vaccines to stop future epidemics. CEPI has received multi-year funding from Norway, Germany, Japan, Canada, Australia, and the Bill & Melinda Gates Foundation, and Wellcome. CEPI has also received single-year investments from the Government of Belgium and the United Kingdom. The European Commission foresees substantial financial contributions to support relevant projects through EC mechanisms. CEPI has reached over US\$ 750 million of its \$1 billion funding target. Since its launch in January 2017, CEPI has announced three calls for proposals. The first call was for candidate vaccines against Lassa virus, Middle East Respiratory Syndrome coronavirus (MERS-CoV), and Nipah virus. The second call was for the development of platforms that can be used for rapid vaccine development against unknown pathogens. The third call is for candidate vaccines against Rift Valley fever and Chikungunya viruses. To date, CEPI has committed to investing over \$350 million in 12 vaccine candidates (five against Lassa virus, four against MERS-CoV, three against Nipah virus) and three vaccine platforms to develop vaccines against Disease X.

Learn more at [CEPI.net](http://CEPI.net). Follow us at [@CEPIvaccines](https://twitter.com/CEPIvaccines).

#### About CureVac

CureVac is a leading company in the field of messenger RNA (mRNA) technology with more than 19 years' expertise in handling and optimising this versatile molecule for medical

purposes. The principle of CureVac's proprietary technology is the use of mRNA as a data carrier to instruct the human body to produce its own proteins capable of fighting a wide range of diseases. The company applies its technologies for the development of cancer therapies, prophylactic vaccines and molecular therapies.

To date, CureVac has received approximately \$420 million (€400 million) in equity investments including significant investments from SAP founder Dietmar Hopp's Dievini and the Bill & Melinda Gates Foundation. CureVac has also entered into collaborations with multinational corporations and organisations, including Boehringer Ingelheim, Eli Lilly & Co, CRISPR Therapeutics, Arcturus Therapeutics, Acuitas, and the Bill & Melinda Gates Foundation.

For more information, please visit [www.curevac.com](http://www.curevac.com) or follow us on Twitter at [@CureVacAG](https://twitter.com/CureVacAG).

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