



CEPI partners with consortium of Bharat Biotech, University of Sydney and ExcellGene to develop ‘variant-proof’ COVID-19 vaccine

OSLO, Norway/ HYDERABAD, India/ SYDNEY, Australia/ MONTHEY, Switzerland; 10 May 2022:

The Coalition for Epidemic Preparedness Innovations (CEPI) today announces the latest award under its [\\$200m programme](#) to advance the development of vaccines that provide broad protection against SARS-CoV-2 variants and other betacoronaviruses.¹ CEPI will provide funding of up to US\$19.3 million to support the development of a ‘variant-proof’ SARS-CoV-2 vaccine candidate to an international multidisciplinary consortium comprising Bharat Biotech International Ltd (BBIL), India, the University of Sydney, Australia and ExcellGene SA, Switzerland.

CEPI’s funding will support the consortium as it seeks to establish preclinical and clinical proof of concept for an adjuvanted subunit vaccine designed to provide broad protection against all known SARS-CoV-2 variants of concern, as well as future variants of the virus which have not yet emerged. CEPI will fund the researchers to conduct activities including immunogen design, preclinical studies, manufacturing process development and a Phase 1 clinical trial.

In this new vaccine design, modified trimeric spike immunogens will be produced in a robust and scalable process with high purity and yield at low cost, based on a biomanufacturing approach that has provided significant quantities of protein therapeutics to the world. This strategy could also be used to enable rapid development of broadly protective vaccines against other betacoronaviruses, as well as vaccines against Disease X—unknown pathogens with pandemic potential that emerge in the future.

Enabling equitable access

CEPI is committed to the principle of equitable access to the vaccines it funds. Under the terms of the funding agreement, the consortium partners have committed to achieving equitable access to the outputs of this project, in line with CEPI’s [Equitable Access Policy](#).

¹Betacoronaviruses are types of coronavirus that include those that cause Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS), which have been responsible for outbreaks in Asia and the Middle East in recent years, and also SARS-CoV-2, the virus responsible for the ongoing COVID-19 pandemic.

Dr Richard Hatchett, CEO of CEPI said:

“As repeated waves of COVID-19 infection remind us, we will be living alongside the virus for many years to come. The threat of a new variant emerging that might evade the protection of our current vaccines is real, so investing in R&D for variant-proof SARS-CoV-2 vaccines is a global health security imperative. Our partnership with Bharat Biotech, University of Sydney and ExcellGene will advance the development of a vaccine candidate to protect against future variants of COVID-19, potentially contributing to the long-term control of the virus.”

Dr Krishna Ella, Chairman & Managing Director, BBIL said:

“BBIL has successfully commercialized a universal COVID-19 vaccine for adults and children. While current generation of vaccines are safe and effective, against currently known variants, it is imperative that we focus on innovation for multi-epitope vaccines, where a single vaccine can protect against all future variants. Our expertise in product development and innovation, especially with novel adjuvants and platform technologies will add to the strong partnership with CEPI, ExcellGene, and the University of Sydney.”

Prof James Triccas, Sydney Institute for Infectious Diseases, The University of Sydney said:

“We are delighted to partner with CEPI to progress our platform for the development of broadly protective COVID-19 vaccines. Our mission is to deliver safe, affordable and highly effective vaccines to combat existing and future SARS-CoV-2 variants, and our international consortium is well placed to achieve this goal. The University of Sydney will provide a framework for pre-clinical assessment of vaccine candidates, together with access to Australia’s world-class early phase clinical trial community.”

Dr Maria J. Wurm, CEO, ExcellGene said:

“Our technological platform for innovative protein designs was used in the past to identify and manufacture an antigen for an Ebola candidate vaccine, resulting in sterilizing immunity in pre-clinical challenge models. For the current COVID-19 project we are using similar approaches to generate numerous antigen preparations derived from spike protein variants of SARS-CoV-2, focussing eventually on the most promising antigen for vaccine purposes. Obtaining funding and scientific advice from CEPI to further our ongoing collaborations with the University of Sydney and Bharat Biotech is an exciting and most gratifying perspective and will, we hope, contribute towards the science for this and other novel protein-based vaccines.”

Strengthening our defences against coronaviruses

The world has made great advances in vaccine development against COVID-19, but variants of concern will continue to pose a threat to this progress as long as the virus continues to circulate. Vaccines have dramatically altered the course of the COVID-19 pandemic in countries that have access to them, but emerging variants that are more transmissible, more deadly, and/or can evade the protection provided by current vaccines could create significant challenges. Developing novel vaccines that target multiple variants of the SARS-CoV-2 virus and have the potential to generate immunity against all of them is therefore essential for the long-term control of the virus.

As illustrated by COVID-19, coronaviruses have devastating pandemic potential. The emergence of a coronavirus combining the transmissibility of COVID-19 with the lethality of SARS or MERS would be catastrophic, so developing vaccines that provide broad protection against the whole betacoronavirus genus is vital to our global health security. CEPI is working closely with partners to advance work in this area as quickly as possible.

The award announced today is the ninth programme to be funded by CEPI to advance the development of vaccines that provide broad protection against SARS-CoV-2 variants and other betacoronaviruses. This work forms an important part of CEPI’s next [5-year plan](#) which aims to reduce or even eliminate the future risk of pandemics and epidemics.

-ENDS-

Notes to editors

Including today's announcement, CEPI has to date announced funding for nine programmes to advance the development of vaccines that could provide broad protection against SARS-CoV-2 variants and other betacoronaviruses:

- [MigVax Ltd](#) - funding of US\$4.3m to MigVax Ltd to support the initial development of a new orally administered subunit vaccine tablet that could offer broad protection against SARS-CoV-2 variants.
- [University of Saskatchewan's Vaccine and Infectious Disease Organization \(VIDO\)](#) - funding of US\$5m to support the initial development of a new vaccine based on VIDO's novel protein subunit technology that could offer broad protection against SARS-CoV-2 variants.
- [Affinivax](#) - funding of up to \$4.5m to support the initial development of a vaccine candidate based on Affinivax's MAPS platform that could offer broad protection against SARS-CoV-2 variants.
- [SK bioscience](#) - funding of up to US\$50m to support the development of a vaccine candidate based on SK's nanoparticle vaccine platform to elicit immune responses that could protect against variants of both SARS-CoV, SARS-CoV-2, and other **sarbecoviruses**.
- [Translational Health Science and Technology Institute \(THSTI\) and Panacea Biotec](#) - funding of up to US\$12.5m to support the development of multi-epitope, nanoparticle-based vaccine candidates that could provide broad protection against SARS-CoV-2 variants and other Betacoronaviruses.
- [BioNet](#) - funding of up to US\$16.9m to advance the development of a novel mRNA-based vaccine that could offer broad protection against SARS-CoV-2 variants.
- [DIOSynVax](#) - funding of up to US\$42m to support the development of a broadly protective Betacoronavirus vaccine using mRNA platform technology.
- [NEC Corporation](#) - funding of up to US\$4.8m to support the initial development of an AI-designed vaccine based on mRNA technology that protects against a broad range of betacoronaviruses.
- Bharat Biotech/ University of Sydney/ ExcellGene - funding of up to US\$19.3m to support the development of an adjuvanted subunit vaccine designed to provide broad protection against SARS-CoV-2 variants.

In a separate partnership agreement, CEPI is also supporting Bharat Biotech to develop a [Chikungunya vaccine candidate \(BBV87\)](#), in cooperation with the Indian Government's Ind-CEPI initiative. It is currently being assessed in a Phase II/III clinical trial in Costa Rica, as part of a multi-country study led by IVI in partnership with Bharat Biotech. CEPI first partnered with IVI and Bharat Biotech in June 2020, providing up to US \$14.1 million for vaccine manufacturing and clinical development of the BBV87 vaccine candidate.

About CEPI

CEPI is an innovative partnership between public, private, philanthropic, and civil organisations, launched at Davos in 2017, to develop vaccines against future epidemics. Prior to COVID-19, CEPI's work focused on developing vaccines against the Ebola Virus Disease, Lassa virus, Middle East Respiratory Syndrome coronavirus, Nipah virus, Rift Valley Fever virus and Chikungunya virus. It has over 20 vaccine candidates against these pathogens in development. CEPI has also invested in new platform technologies for rapid vaccine development against unknown pathogens (Disease X).

During the COVID-19 pandemic, CEPI initiated multiple programmes to develop vaccines against SARS-CoV-2 and its variants with a focus on speed, scale and access. These programmes leverage the rapid response platforms developed by CEPI's partners prior to the emergence of COVID-19, as well as

new collaborations. The aim is to advance clinical development of a diverse portfolio of safe and effective COVID-19 candidates and to enable fair allocation of these vaccines worldwide through COVAX.

CEPI's 5-year plan lays out a \$3.5 billion roadmap to compress vaccine development timelines to 100 days, develop a broadly protective vaccine against COVID-19 and other betacoronaviruses, and create a "library" of vaccine candidates for use against known and unknown pathogens. The plan is available at <http://www.endpandemics.cepi.net>.

Follow our [news page](#) for the latest updates. Follow us via [@CEPIvaccines](#), [@DrRHatchett](#), and on [LinkedIn](#).

About Bharat Biotech International Ltd

Bharat Biotech has established an excellent track record of innovation with more than 145 global patents, a wide product portfolio of more than 16 vaccines, 4 bio-therapeutics, registrations in more than 123 countries, and the World Health Organization (WHO) Prequalifications. Located in Genome Valley in Hyderabad, India, a hub for the global biotech industry, Bharat Biotech has built a world-class vaccine & bio-therapeutics, research & product development, Bio-Safety Level 3 manufacturing, and vaccine supply and distribution.

Having delivered more than 5 billion doses of vaccines worldwide, Bharat Biotech continues to lead innovation and has developed vaccines for influenza H1N1, Rotavirus, Japanese Encephalitis (JENVAC®), Rabies, Chikungunya, Zika, Cholera, and the world's first tetanus-toxoid conjugated vaccine for Typhoid. Bharat's commitment to global social innovation programs and public-private partnerships resulted in introducing path-breaking WHO pre-qualified vaccines BIOPOLIO®, ROTAVAC®, ROTAVAC 5D®, and Typbar TCV® combatting polio, rotavirus, typhoid infections, respectively.

As a leader of pandemic vaccines, Bharat Biotech has successfully delivered COVAXIN®, India's 1st indigenous vaccine against COVID-19. In November 2021, COVAXIN® has received WHO EUL. The acquisition of Chiron Behring Vaccines has positioned Bharat Biotech as the world's largest rabies vaccine manufacturer with Chirorab® and Indirab®. To learn more about Bharat Biotech, visit www.bharatbiotech.com.

About the University of Sydney

As Australia's first university – founded in 1850 – the University of Sydney has a proud history of global leadership in education and research and inspiring people from all backgrounds to contribute to positive real-world change. We're a world-renowned teaching and research institution – our research combines the expertise and talents of scholars from many disciplines.

[Learn more](#)

About ExcellGene

ExcellGene is a privately-owned company offering high quality research, development and manufacturing services to academia and industry partners. The activities are targeted towards recombinant therapeutics, vaccine and diagnostics. Host cells to generate these are CHOExpress® and HEKExpress® systems that have delivered products for clinical use from bioreactors at scales of 100 to 2500 Liter. The Company, spun off from the Swiss Federal Institute of Technology in Lausanne (EPFL), recently celebrated 20 years. ExcellGene focusses on manufacturing sciences for any protein of interest, including those that are difficult to make and engaged into development of gene therapy products (AAV). The Company pioneered many innovations when using recombinant animal cells in bioreactors and has shared insights and know-how through numerous scientific publications. In the context of SARS-CoV-2, ExcellGene has delivered to interested scientists and institutions milligram to

gram quantities of CHO-produced Spike protein preparations of the Wuhan, Alpha, Beta, Delta and Omicron variants.

See <https://www.excellgene.com/> for further information.

Media contacts

CEPI

Email: press@cepi.net

Phone: +44 7387 055214

Bharat Biotech

Email: enright@enrightpr.com

Phone: +91 984 980 9594

The University of Sydney

Email: media.office@sydney.edu.au

Phone: +61 2 8627 0246

ExcellGene

Email: press@excellgene.com

Phone: +41 24 471 9660