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Scientists in Korea explore use of COVID-19 variant vaccine against other coronaviruses

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Global consortium expands research to develop a broadly protective coronavirus vaccine



An international consortium of researchers developing a vaccine against troublesome COVID-19 variants will receive additional CEPI funding to investigate whether it could also protect against other deadly coronaviruses.

Scientists at the International Vaccine Institute (IVI), an international organisation headquartered in South Korea, will lead the new work testing whether a messenger RNA (mRNA) vaccine candidate that has already undergone early assessment supported by Norway-based Coalition for Epidemic Preparedness Innovations (CEPI) and others against Omicron, Delta, and Alpha variants could be modified to also successfully protect against a broader array of viruses related to COVID-19.

In recognition of another potential serious coronavirus outbreak, the IVI-led team have expanded the design of their COVID-19 variant vaccine so that it also contains mRNA molecules encoding for the spike protein of several other known high-risk coronaviruses or modified coronavirus constructs.

Researchers have hypothesised that presenting spike proteins (known as immunogens) of multiple high-risk coronaviruses to the human body could induce high levels of broadly protective antibodies (a form of immune response). Preclinical data of such a vaccine design approach suggest that immune responses can be induced to neutralise several coronaviruses including those found in pangolins and bats. The vaccine then could potentially provide protection against current and emerging COVID-19 variants as well as novel or as-of-yet undiscovered related SARS coronavirus with potential transmission from animal hosts to humans.

CEPI will top up its investment in the vaccine, initially made in 2022, to support the expansion of the project through preclinical to Phase II clinical trials. CEPI will altogether invest up to $23.9 million in the vaccine candidate.

French-Thai vaccine manufacturing group BioNet and universities from US (University of Pennsylvania, University of North Carolina, University of California Davis) and Thailand (Chulalongkorn University) are joining forces with IVI to further the research.