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Serum Institute of India and CEPI supercharge pandemic response preparedness targeting H5N1

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Collaboration to use SII's baculovirus platform to target H5N1 bird flu as a prototype for a potential Disease X

Norway-based Coalition for Epidemic Preparedness Innovations (CEPI) is collaborating with Pune-based Serum Institute of India (SII), part of Cyrus Poonawalla Group, to boost pandemic response preparedness using a baculovirus vaccine platform to target H5N1 bird flu as a prototype for a potential Disease X—an as-yet-unknown pathogen with pandemic potential.

Supported by CEPI funding of up to $16.4 million, SII will use its validated baculovirus-based platform to produce and compare two H5 antigens for a recombinant protein vaccine: a wild-type and an AI-optimised, broad-spectrum H5 antigen designed by scientists at Houston Methodist Research Institute. The broad-spectrum approach is designed to elicit immune responses across multiple strains of H5 viruses, rather than just one, making it particularly suited for use in unpredictable outbreak situations.

The collaboration will ultimately pressure-test the baculovirus platform's ability to quickly produce new antigens against H5 viruses, simulating a fast response to a future pandemic threat. The work will also serve as proof of concept for using AI to design vaccine antigens capable of inducing broadly protective immunity. Antigens are proteins that trigger an immune response and are a critical part of an effective vaccine.

Adar Poonawalla, CEO, Serum Institute of India, said, "Our validated baculovirus platform gives us the ability to rapidly develop and produce vaccines for emerging threats. This project will test that readiness in real terms, reinforcing our commitment to pandemic preparedness. The learnings will not only support faster response times but also ensure that effective vaccines can reach vulnerable populations without delay."