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Australia's Vaxxas advances $4.8 M programme for needle-free thermostable mRNA vaccines

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Vaxxas plans to progress this stage two programme of work from Q1 2025

Vaxxas, an Australia-based clinical-stage biotechnology company commercialising a novel high-density microarray patch (HD-MAP) vaccination platform, has announced that Norway-based Coalition for Epidemic Preparedness Innovations (CEPI) has approved the progression of a $4.8 million (AU$7.2 million) programme to develop heat-stable, dried-formulation mRNA vaccines delivered using Vaxxas' needle-free high-density microarray patch (HD-MAP).

The approval follows promising results from Vaxxas' preclinical work, including expression of a seasonal influenza antigen that demonstrated dose-dependent immunogenicity of mRNA in lipid nanoparticles (LNPs) when delivered by Vaxxas' HD-MAP technology. The studies also showed that, once loaded onto the HD-MAP, the mRNA-LNPs could maintain stability at 2–8°C and 25°C for at least 12 months, and 40°C for at least one month.

Vaxxas will partner with South Korea-based vaccine developer SK bioscience in this next phase of the programme, advancing the company's mRNA vaccine for Japanese Encephalitis Virus (JEV) on Vaxxas' HD-MAP towards a Phase I clinical study.

The work will focus on further optimising mRNA vaccine formulations for assessment by in vitro and in vivo preclinical studies. Vaxxas expects the development work performed with the JEV vaccine candidate to be transferrable across all mRNA vaccine antigens delivered by LNPs, providing a platform approach that can be advanced to human trials.

Currently, mRNA vaccines require expensive and challenging end-to-end, ultra-cold-chain distribution and storage requirements, a significant barrier to vaccine accessibility in low-and middle-income countries and hard-to-reach areas around the world.

This programme is Vaxxas' second collaboration with global vaccine developer SK bioscience. The companies are also working on a programme, funded by global charitable organisation Wellcome, to advance the development of a HD-MAP/Typhoid conjugate vaccine candidate.