Vaxxas' high-density microarray patch. Image: Vaxxas

NO MORE TEARS: ACCELERATING NEEDLE-FREE VACCINATION

RNA PRODUCTS

A strategic partnership between The University of Queensland's **BASE Facility**, a TIA-supported facility, and Brisbane biotech company **Vaxxas** is accelerating the development of innovative, needle-free mRNA vaccines.

Together, the teams are working to design and manufacture mRNA vaccine candidates optimised for delivery via Vaxxas' High-Density Microarray Patch (HD-MAP). The HD-MAP, developed with the support of many other NCRIS capabilities including ANFF and Microscopy Australia, offers significant advantages over traditional vaccination, including ease of use, potential self-administration, and reduced dependence on cold-chain infrastructure.

Through this partnership, Vaxxas is gaining access to BASE Facility's advanced mRNA design and manufacturing workflows, formulation development, and analytical characterisation services. These capabilities have helped accelerate Vaxxas' preclinical development timeline, positioning the company to rapidly respond to global health needs.

The collaboration was recently awarded A$3.2 million as a Concept Stage winner of the prestigious US$50 million BARDA Patch Forward Prize. This international award recognises technologies that could transform how mRNA vaccines are delivered for COVID-19, seasonal influenza, and future pandemics.

As Australia's leading provider of research- and preclinical-grade mRNA, BASE Facility plays a critical role in enabling local biotech innovation. Since launching in 2021, BASE Facility has supported academic and industry partners in advancing new mRNA-based vaccines and therapies from early design through to preclinical testing.

The BARDA award recognises both organisations' global leadership in their respective fields and underscores the value of collaborative innovation. BASE Facility and Vaxxas are now exploring further partnerships to progress the HD-MAP and mRNA platform through preclinical and clinical development stages.

This project exemplifies how Australia's research infrastructure, supported by TIA, can catalyse industry partnerships and deliver real-world impact for global health.

> ""This work could help us be better prepared for future pandemics, while also making life-saving vaccines available to regions where cold-chain infrastructure is limited or non-existent"
> **Prof Timothy Mercer,** Director and Group Leader at BASE Facility

Impact:

TRL 1 TRL 2 **TRL 3** **TRL 4** TRL 5 TRL 6 TRL 7 TRL 8 TRL 9