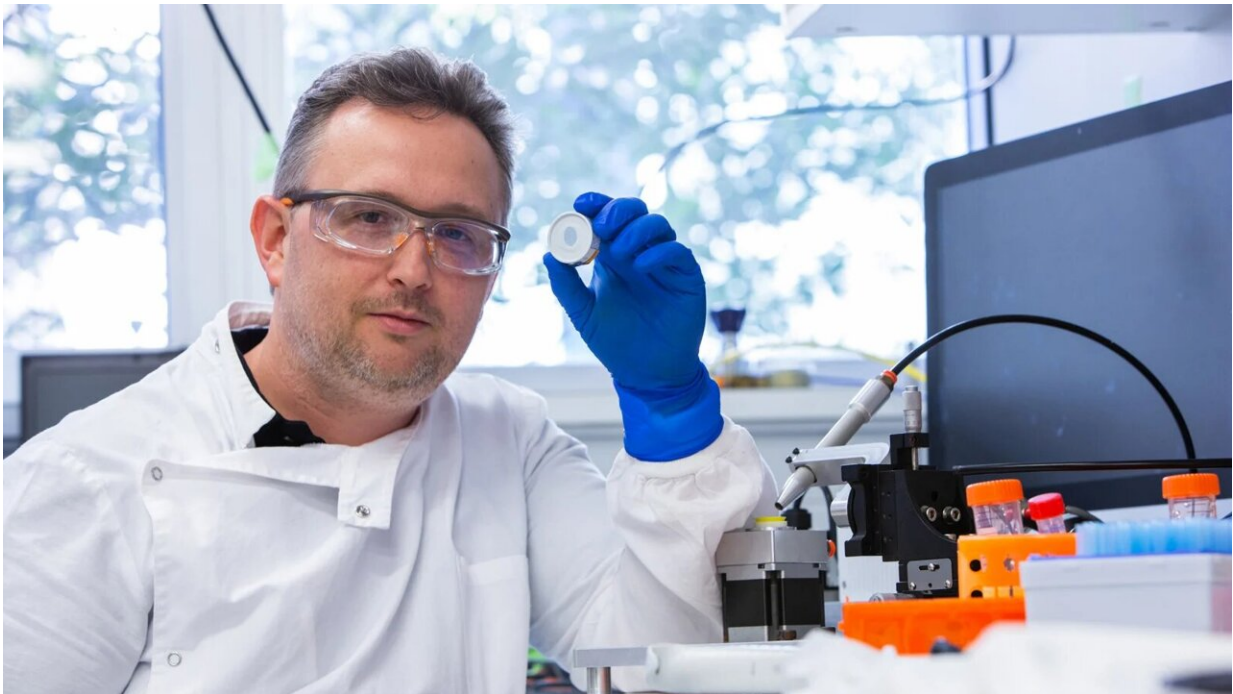


# Needle-free COVID-19 vaccine shows promise

June 3 2021

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Credit: University of Queensland

A needle-free COVID-19 vaccination could be possible, with University of Queensland scientists successfully protecting mice from the virus by administering a US-developed vaccine candidate with a 'patch.'

The University of Texas [Hexapro vaccine candidate](#)—delivered via the UQ-developed and Vaxxas-commercialized high-density microarray

[patch](#) (HD-MAP) – provided protection against COVID-19 disease with a single, pain-free 'click' from a pocket-sized applicator.

Dr. David Muller, from UQ's School of Chemistry and Molecular Biosciences, said the vaccine patch produced strong immune responses that were shown to be effective when the mice were exposed to SARS-CoV-2—the virus that causes COVID-19.

"When the Hexapro vaccine is delivered via HD-MAP applicator—rather than a needle—it produces better and faster immune responses," Dr. Muller said.

"It also neutralizes multiple variants, including the UK and South Africa variants.

"And it's much more user-friendly than a needle—you simply 'click' an applicator on the skin, and 5000 microscopic projections almost-imperceptibly deliver vaccine into the skin.

"The UQ team, together with Vaxxas, hope to take the technology to the world and are looking for funding opportunities to accelerate to clinical trials as soon as possible."

Dr. Muller said that Hexapro, delivered by the high-density microarray patch, could dramatically assist global vaccine rollout effort, particularly for billions of [vulnerable people](#) in low- and middle-income countries.

"We've shown this vaccine, when dry-coated on a patch, is stable for at least 30 days at 25 degrees Celsius and one week at 40 degrees, so it doesn't have the cold chain requirements of some of the current options."

Vaxxas was founded in 2011 by UQ's commercialisation company,

UniQuest.

President and CEO of Vaxxas, David L. Hoey, said he was extremely excited about the findings. "These results are extremely clear—vaccination by HD-MAP produces much stronger and more protective immune responses against COVID-19 in model systems than via needle or syringe," he said. "The prospect of having a single-dose [vaccine](#), that could be easily distributed and self-administered, would greatly improve global pandemic vaccination capabilities."

**More information:** Christopher L.D. McMillan et al, Complete protection by a single dose skin patch delivered SARS-CoV-2 spike vaccine, *BioRxiv* (2021). [DOI: 10.1101/2021.05.30.446357](https://doi.org/10.1101/2021.05.30.446357)

Provided by University of Queensland

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