

Merck partnership accelerates needle-free vaccine delivery

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A University of Queensland invention that will deliver vaccines without the need for needles has struck a significant partnership with US-based pharmaceutical giant Merck, announced today.

The Nanopatch technology, which aims to replace the traditional needle and [syringe](#) with a patch smaller than a postage stamp to deliver vaccines painlessly and more efficiently, will be licenced to Merck to begin commercial production on a vaccine.

UQ Vice-Chancellor Professor Peter Høj said the partnership accelerated the process of delivering the revolutionary health technology to people throughout the world.

"A major vaccine maker has looked at technologies around the world and chosen the UQ-invented Nanopatch," Professor Høj said.

"That is a tremendous credit to the team of researchers who developed the technology, led by Professor Mark Kendall.

"It also reflects the excellence of UQ's research [commercialisation](#), which ensures that practical, life-enhancing discoveries are made accessible to the people who need them.

"This link-up with Merck is especially inspiring, because it may lead to the relief of serious [health problems](#), particularly in remote and developing regions.

"In the immediate term, it will employ more people in Brisbane's innovation economy, and boost the global reputation of Queensland and Australian R&D."

The Nanopatch technology, now being developed by privately held biotechnology company Vaxxas, originated from Vaxxas Chief Technology Officer Professor Mark Kendall's research group at UQ's Australian Institute for Bioengineering and Nanotechnology.

"It is exciting to commence this important partnership between Vaxxas and Merck – a big step forward towards the Nanopatch becoming a vaccine delivery product," Professor Kendall said.

"This directly builds upon intensive and outstanding research on the Nanopatch – conducted by my research group at UQ – taking the Nanopatch from an idea to achieving unprecedented immune responses in animals. And our research has been supported by competitive research grants from both the Australian and Queensland State Governments."

Through the Merck partnership, Vaxxas will be eligible to receive payments for up to two additional vaccines developed by Merck using the Nanopatch platform, as well as milestone payments on Merck vaccine development and regulatory approvals, and royalties on sales of any [Merck](#) vaccines that ultimately use the Nanopatch platform.

The Nanopatch works through thousands of small projections designed to deliver a [vaccine](#) to abundant immune cells in the skin, whereas the traditional syringe delivers to the muscle, where there are few immune cells.

Nanopatch delivery can improve the efficiency of vaccines—including achieving protection against influenza—with only 1/100th of the dose used with a needle and syringe.

The Nanopatch has the potential to improve patient convenience, reduce needle-stick injuries and overcome cross contamination.

It is designed for thermostability and may not need refrigeration, potentially making transport much cheaper and easier, particularly to developing nations.

Provided by University of Queensland

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