Study shows clamp technology promising for future vaccine development

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University of Queensland scientists have published the clinical trial data confirming their molecular clamp-stabilized vaccine technology was safe and potentially effective.

The vaccine candidate developed by the team last year did not progress through to Phase 2/3 clinical trials, due to cross reactivity caused by the protein fragment used to stabilize the clamp design.

Initial data from the clinical trial conducted in Brisbane was initially released last December and has now been published following peer review in *The Lancet Infectious Diseases*.

Project co-leader Associate Professor Keith Chappell said 99 percent of vaccinated participants in the study produced a neutralizing immune response.

"In 75 percent of vaccine recipients it was above the average in recovered patients, and in 38 percent it was more than twice the average for recovered patients," he said.

"Adverse events were comparable to those in the saline placebo, with the only exceptions being mild injection site pain and tenderness."

Project Director Professor Trent Munro said the paper also discussed the cross-reactivity in HIV diagnostics that led to the decision not to proceed into later stage clinical studies.

"The design of the original molecular clamp excluded known antibody binding sites in order to reduce the potential, but unfortunately the antibodies registered a low response on some highly sensitive HIV tests."

Project co-leader Professor Paul Young said the 2020 vaccine candidate was not an option for Australia's current vaccine rollout.

"The team understood the decision in December to shift the focus to other candidates that were showing promise.

"Some of these vaccines are now in market and need to remain the immediate priority.

"This study has strongly validated the Molecular Clamp technology as a promising rapid response strategy for vaccine development.

"The team is continuing to work on alternative clamp constructs that could be used to respond to COVID-19 in the future or other viral diseases."

The data published relates to the clinical trial involving 120 participants aged 18 to 55, 96 of which received the vaccine candidate.

The research is published in the *Lancet Infectious Diseases*.

More information: Safety and immunogenicity of an MF59-adjuvanted spike glycoprotein-clamp vaccine for SARS-CoV-2: a randomised, double-

blind, placebo-controlled, phase 1 trial. *Lancet Infectious Diseases*.
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