

Insight into HIV immunity may lead to vaccine

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(Medical Xpress) -- Latest insights into immunity to HIV could help to develop a vaccine to build antibodies' defences against the disease, a University of Melbourne study has found.

By investigating the action of the human [antibodies](#) called ADCC, in people with [HIV](#), researchers were able to identify that the [virus](#) evolves to evade or 'escape' the antibodies.

Professor Stephen Kent of the University of Melbourne and one of the senior authors on the paper said ADCC antibodies have been strongly implicated in protection from HIV in several vaccine trials but their action was poorly understood.

"These results show what a slippery customer the HIV virus is, but also shows that these ADCC antibodies are really forcing the virus into changing, in ways that cause it to be weaker," he said.

"It also implies that if good ADCC antibodies were available prior to infection, via a [vaccine](#), we might be able to stop the virus taking hold. This is the holy grail."

The group at the University of Melbourne's Department of Microbiology and Immunology analysed blood samples of people with HIV and found their virus had evolved to evade or 'escape' the ADCC antibodies against HIV they are making to try to control their virus.

The team led by Dr Ivan Stratov and Professor Kent employed a novel technology developed in their laboratory to find where ADCC antibodies were attacking the virus. They then looked at how the sequence of the virus had mutated over time to avoid the immune response.

“There is an urgent need to identify effective immunity to HIV and our studies suggest ADCC responses supply significant [immune](#) pressure on the virus,” Dr Ivan Stratov, a clinician and researcher said.

The group is now working on designing HIV vaccines to induce ADCC antibodies that make it more difficult for the virus to escape.

The work was published in the prestigious international journal *PNAS*.

Provided by University of Melbourne

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