

Rapid COVID-19 antibody test can check immune response

January 18 2021, by Jordan Flemming



A new test developed at Western University can detect COVID-19 antibodies quickly and accurately. Credit: University of Western Ontario

A team of Western researchers has developed a simple test—faster and more accurate than any approved thus far in Canada—to determine who has developed COVID-19 antibodies.

The [test](#) could become a pivotal tool to help identify and determine immunity, whether from previous infection or from vaccination.

Developed by professor Shawn Li, Canada Research Chair in Proteomics and Functional Genomics, his colleagues at the Schulich School of Medicine & Dentistry and collaborators at the University of Toronto, the antibody agglutination test can be completed in five minutes.

It can use either serum or [plasma samples](#) to detect antibodies, with no false negative results and virtually no [false positives](#) based on testing results on hundreds of samples. This work is currently under peer review for publication.

There are fewer than 20 antibody tests already approved by Health Canada and these are not ideal for community level use because of high costs and long turn-around times. Currently, Health Canada has an [expedited review of submissions to address COVID-19](#).

Li's test can't be used to diagnose whether someone is newly infected. However, it is sensitive enough to measure antibodies days after someone has contracted the disease.

The test answers an urgent need for a simple, accurate measure of the prevalence of disease or disease-protection—and from that, to help inform public-health decisions for individuals within communities.

The samples could be processed in a lab (in large batches or individually) or at a patient's bedside.

"This is significant because as vaccinations are carried out on large scales, a highly sensitive and specific antibody test will be invaluable to inform public health decisions, both for directing [resource allocation](#) and determining response to vaccination," Li said. "I owe a lot to my colleagues and collaborators who have worked extremely hard to develop this antibody test in such a short time."

According to Health Canada, 70 percent of the population will need to show immunity—ideally, through vaccination—in order to safeguard against further pandemic-level spread of the virus. An accurate antibody test will help measure that figure.

More information: Sally Esmail et al. Rapid and accurate point-of-care testing for SARS-CoV2 antibodies, *medRxiv* (2020). [DOI: 10.1101/2020.11.30.20241208](https://doi.org/10.1101/2020.11.30.20241208)

Provided by University of Western Ontario

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