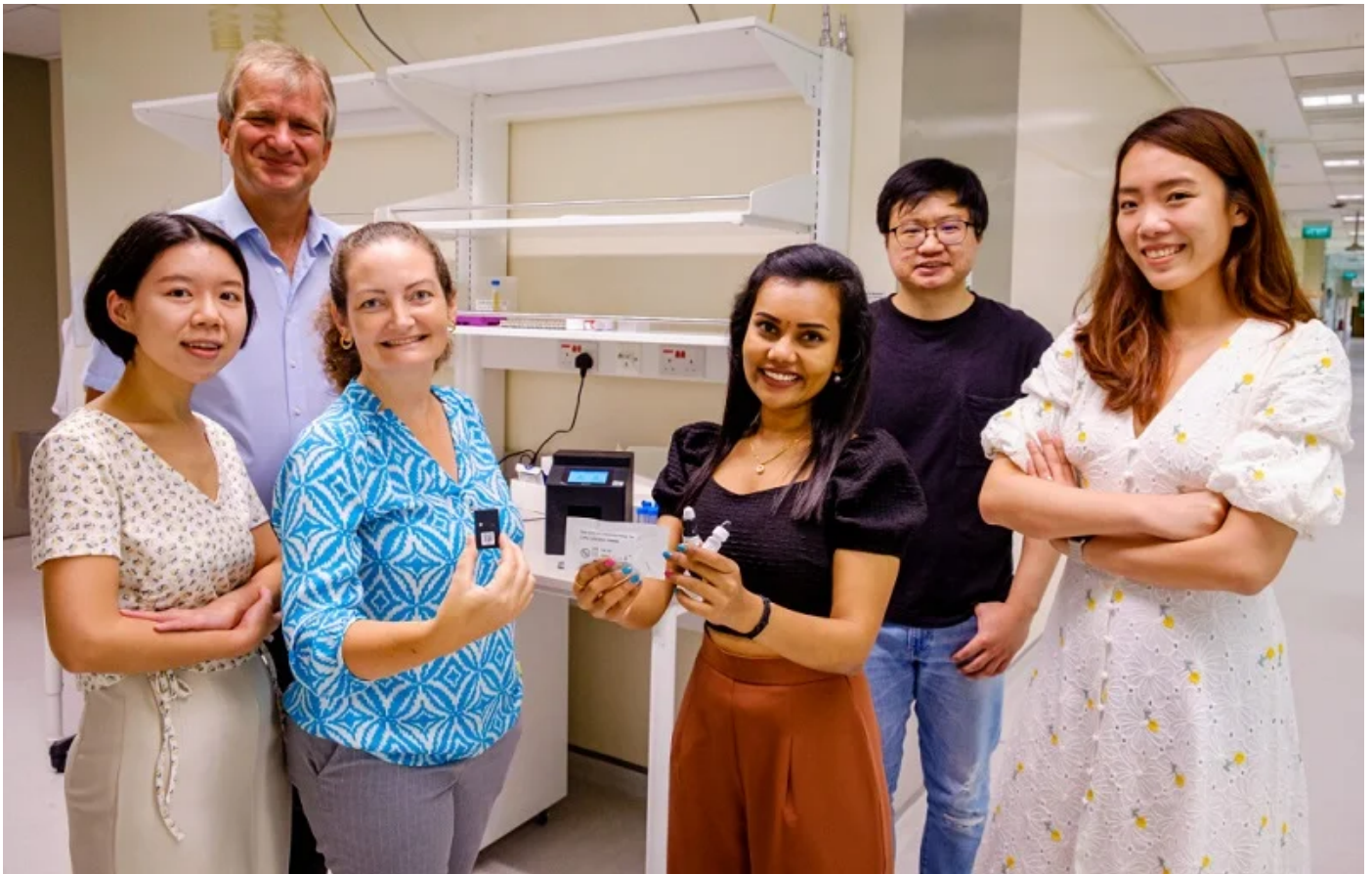


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SMART and NTU researchers develop test to detect immunity against Covid-19

The test kit determines an individual's Covid-19 immunity based on the antibody levels detected in a blood sample.



Patrina Chua (SMART), Professor Peter Preiser (NTU/SMART), Dr Megan McBee (SMART), Abirami R (SMART), Say Yong Ng (SMART) and Sharon Ling (SMART) with the new test kit. Credit: NTU / Singapore-MIT Alliance for Research and Technology.



A research group from the Singapore-MIT Alliance for Research and Technology (SMART) and Nanyang Technological University (NTU) in Singapore has [developed](#) a new blood test kit that can determine a person's immunity against Covid-19 and its variants.

SMART is the research enterprise of the Massachusetts Institute of Technology (MIT) in Singapore.

The new rapid point-of-care test kit detects neutralising antibodies (NAb) of the SARS-CoV-2 virus as well as its variants, including Delta and Omicron, in a blood sample. It measures the NAb levels with an accuracy of up to 93%.

It provides results in 10 minutes, compared to the 24 to 72 hours needed for conventional lab tests.

SMART noted that the test kit can be easily adapted in the future, both for new variants of concern and other diseases.

The kit, which is known as the cellulose pulled-down virus neutralisation test kit (cpVNT), uses a paper-based assay that is coated with chemicals that bind to the antibodies in the blood sample.

The test can support personalised vaccination strategies, where people are given vaccinations and boosters only when required, depending on their immune response and antibody levels.

The new test does not require any specialised laboratory equipment and can be administered by a person without medical training.

This paves the way for large-scale testing of vulnerable people, including the elderly.

The low-cost and easy-to-use test kit detects Covid-19 antibodies in a blood sample. The test results will be used to inform an individual about how cautious they need be about potential infection before a booster, as well as when a booster should be taken.

SMART AMR former postdoctoral associate Hoi Lok Cheng said: “This is an exciting breakthrough for us, and a continuation of our long-running work to develop efficient, low-cost and easy-to-use NAb tests to combat the Covid-19 pandemic.

“As a quantitative test that can detect NAb levels specific to key variants, such as Delta and Omicron, the cpVNT has given us valuable insights into the effectiveness of various vaccines vis-à-vis variants of concern.

“This test kit will also prove integral to a more personalised vaccination approach that will benefit higher-risk individuals, such as the elderly and healthcare workers.”

SMART noted that further development of the test kit is currently underway, which will allow it to meet the necessary regulatory approvals and manufacturing standards for public use.