

Rapid blood test kit can determine if person has immunity against Covid-19

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The test is based on the antibodies detected in a blood sample. - PEXELS

SINGAPORE (The Straits Times/Asia News Network): Using a drop of blood from a finger prick, a new rapid blood test kit developed by scientists in Singapore can determine if a person has immunity against Covid-19 and its variants.

The serology test takes just 10 minutes to show results, compared with the 24 to 72 hours needed for conventional laboratory testing.

The kit was developed by a team of scientists from the Singapore-MIT Alliance for Research and Technology (Smart), MIT's research enterprise in Singapore, and Nanyang Technological

University (NTU).

The test kit detects the levels of neutralising antibodies against SARS-CoV-2, the virus causing Covid-19, and its variants such as Delta and Omicron, said Smart and NTU in a media release on Thursday (Sept 22).

The test, which uses a paper-based assay coated with chemicals that bind to antibodies in the blood sample, has up to 93 per cent accuracy.

It can be easily adapted for new variants of concern and other diseases in the future, they added.

The findings were published in the scientific journal Microbiology Spectrum.

The development of this test kit is also expected to pave the way for personalised vaccination strategies, where people are given vaccinations and booster shots only when necessary, depending on their variance in antibody levels and immune response.

The test kit can also be administered by someone without medical training as it does not require the use of any specialised laboratory equipment.

"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," noted the co-first author of the paper, Dr Hoi Lok Cheng, a former post-doctoral associate at Smart Antimicrobial Resistance (AMR) interdisciplinary research group.

"Individuals from these communities can have their immuno-protective profile assessed on a regular basis via the (test), allowing them to know when a booster dose may be appropriate or necessary."

The development of the kit is also expected to address issues such as vaccine hesitancy.

"Our study proves that our new test kit can be a powerful tool, allowing healthcare organisations to screen people and determine their vaccination needs, especially against the current and upcoming variants," said Professor Peter Preiser, co-lead principal investigator at Smart AMR and associate vice-president for biomedical and life sciences studies at NTU.

"This will help allay some people's fears that they will be 'over-vaccinated with a booster', since the results will inform them accurately if they are well protected against Covid-19 or not."

Further development of the test kit is under way to meet necessary regulatory approvals and manufacturing standards for public use, said Smart and NTU.