

Fast test to detect Covid-19 or dengue

Researchers at Nanyang Technological University have come up with a diagnosis to determine if a person has Covid-19 or dengue in just 36 minutes, a quarter of the time needed by current testing methods. >23

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Varsity creates fast diagnosis

Method can detect Covid-19 or dengue in just 36 minutes

Singapore Researchers at Nanyang Technological University (NTU)'s Lee Kong Chian School of Medicine have come up with a way to tell if a person has Covid-19 or dengue in just 36 minutes.

This is just one quarter of the time taken by current testing methods for the same diseases, NTU said yesterday.

At the moment, the most sensitive way to detect Covid-19 is through a polymerase chain reaction (PCR) technique in a laboratory, which uses a machine to “amplify” viral genetic material by copying it over and over again so any trace of the Sars-CoV-2 virus, which causes Covid-19, can be detected.

But while such a method is accu-



rate, it can take a few hours to complete, partially due to a step known as RNA purification.

When a patient is swab tested, their RNA needs to be extracted from the swab sample to remove any substances in the sample that

inhibit the PCR test from working, such as mucin – a main component of mucus.

It also requires chemicals that are now in short supply worldwide, and needs to be carried out by highly trained staff using expensive equipment.

But the NTU team's method, known as “direct-PCR”, uses a series of commercially available enzymes and reagents that are resistant to inhibitor substances to overcome this obstacle.

By mixing them together with patient swab samples in a test tube, the team is able to skip the RNA purification step and perform the test on the sample directly, producing accurate results in a shorter time.

Dr Sivalingam Paramalingam Suppiah, a senior research fellow who was part of the team, said: “By skipping the RNA extraction step with our direct-PCR method, we see cost savings... and avoid the problem of reagents in short supply when lab testing is ramped up and the demand increases globally.”

The team's method can also be deployed outside of a laboratory using a machine known as a portable thermocycler.

This means there is a possibility that its testing method can be used in community healthcare settings by front-line healthcare workers, rather than needing to send the results to a laboratory and wait for them to be processed there. — The Straits Times/ANN