Singapore kit makes it easier to transport samples for testing

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Test samples from possible Covid-19 patients can now be more easily preserved while being sent to labs.

This would, in turn, allow for more accurate testing in countries where samples have to be transported over long distances.

The Agency for Science, Technology and Research (A*Star) and Lucence, a genomics company led by oncologist Tan Min-Han, have jointly developed a new kit that allows for samples to be transported at room temperature, instead of in a refrigerated environment.

The Safer-Sample kit contains a bottle of fluid that can be mixed with certain types of virus samples at the point of collection.

This fluid can keep the samples stable at room temperature for up to a week, said A*Star and Lucence.

The World Health Organisation has said that virus specimens should be stored and shipped at 4 deg C if they will reach the laboratory in less than 72 hours, and at minus 20 deg C, or ideally minus 80 deg C, on dry ice or liquid nitrogen if they will reach the laboratory in more than 72 hours.

But A*Star and Lucence said that the equipment to transport samples in such conditions is in short supply worldwide.

"Among other factors, accurate diagnostic testing depends on sampling quality, storage and transport to the testing laboratory," said the organisations. "However, chilled transport media are not universally available and are subject to worldwide shortages, leading to the risk of compromised testing because of specimen drying, contamination or degradation, especially if transported at room temperature."

They said this kit will be especially useful in countries where samples must be transported across long distances for testing.

Concerns about these samples not being properly refrigerated while being sent to labs have previously been raised in Indonesia.

Samples can be collected through methods such as throat swabs, nose swabs or phlegm, depending on the countries.

Lucence is a genomic medicine firm that is headquartered in Singapore and California, and traditionally focuses on cancer testing.

Dr Tan, its chief executive, is the elder brother of Mr Tan Min-Liang, who is co-founder of gaming hardware firm Razer.

Dr Tan said Lucence’s technology can also contribute accurate testing solutions amid the Covid-19 pandemic. The firm will donate up to 10,000 of the Safer-Sample kits to the scientific community.

He added that the kit is also being evaluated to see if it can inactivate the coronavirus. Inactivation results in the virus becoming unable to infect someone, while still allowing for its presence to be detected.

He said: “Should Safer-Sample be able to inactivate virus at the point of sample collection, the sample would be less hazardous during transport and lab processing, thereby reducing risks to those involved.”

The National Centre for Infectious Diseases is evaluating non-invasive patient specimens, such as saliva, collected with the Safer-Sample reagent.

Lucence is also working with the Ministry of Health for further testing and evaluation of the kits.

Associate Professor Hsu Li Yang, infectious diseases programme leader at the National University of Singapore’s Saw Swee Hock School of Public Health, said the kit was timely, given that primary care and community testing of Covid-19 are becoming an urgent need.

Prof Hsu, who is also adjunct clinician-scientist at A*Star’s Institute of Bioengineering and Nanotechnology, added: “Public-private partnerships that result in these breakthroughs are critical for delivering necessary resources in areas that either is unable to achieve alone.”

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