BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Australia develops breakthrough blood test for COVID-19 detection

July 21, 2020 | News

World-first research, led by Monash University, has been able to identify positive COVID-19 cases using blood samples in approximately 20 minutes.



The research team, led by Bioresource Processing Institute of Australia (BioPRIA) and Monash University's Chemical Engineering Department, including researchers from the ARC Centre of Excellence in Convergent BioNano Science and Technology (CBNS), has developed a simple agglutination assay – an analysis to determine the presence and amount of a substance in blood – to detect the presence of antibodies raised in response to the SARS-CoV-2 infection.

Positive COVID-19 cases caused an agglutination or a clustering of red blood cells, which was easily identifiable to the naked eye. Researchers were able to retrieve positive or negative readings in about 20 minutes.

While the current swab / PCR tests are used to identify people who are currently positive with COVID-19, the agglutination assay can determine whether someone had been recently infected once the infection is resolved – and could potentially be used to detect antibodies raised in response to vaccination to aid clinical trials.

Using a simple lab setup, this discovery could see medical practitioners across the world testing up to 200 blood samples an hour. At some hospitals with high-grade diagnostic machines, more than 700 blood samples could be tested hourly – about 16,800 each day.

Study findings could help high-risk countries with population screening, case identification, contact tracing, confirming vaccine efficacy during clinical trials, and vaccine distribution.

A patent for the innovation has been filed and researchers are seeking commercial and government support to upscale production.