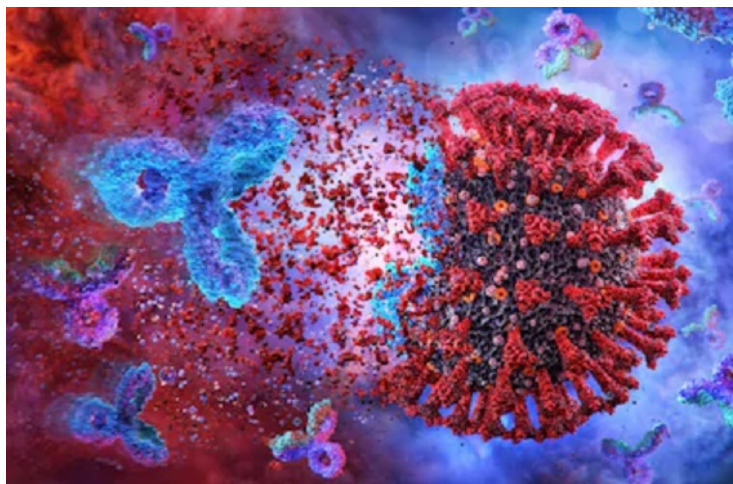# Singapore develops highly sensitive COVID-19 antibody test

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This will enable healthcare authorities to determine the effectiveness of COVID-19 control measures.

Singapore based biomedical firm Restalyst has developed a COVID-19 antibody test, COVID19N-REAAD™, which will be instrumental in establishing disease prevalence in populations and the exposure risk factors associated with infection. This will enable healthcare authorities to determine the effectiveness of COVID-19 control measures. Insights into population segments more susceptible to infection will also aid the future roll-out of vaccines.

The need for serology tests has increased, particularly in detecting prior infections in asymptomatic patients. COVID-19 infections are diagnosed through real-time reverse transcription-polymerase chain reaction (RT-PCR), performed using a nasopharyngeal swab. It confirms the presence of the virus. RT-PCR cannot be used for assessing disease prevalence, as a negative result cannot differentiate a person who was previously infected and has since recovered, from an infected person. Unlike RT-PCR, COVID19N-REAAD™ homes in on an adaptive immune response to COVID-19, indicating recent or prior infection. It works by employing an Enzyme-linked immunosorbent assay that captures and detects the antibodies specific to the COVID-19 nucleocapsid protein.

A study using 387 clinical samples -- comprising 56 RT-PCR positive and 331 healthy cohorts for COVID-19 -- found that COVID19N-REAAD™ has an estimated clinical sensitivity and specificity of 98.21% and 100% respectively. The test was validated through comparative studies with Siemens ADVIA Centaur® SARS-CoV-2 Total and Roche Elecsys Anti-SARS-CoV-2 which are FDA approved serological tests. The studies were conducted using 132 serological reactive and 267 serological non-reactive samples as determined by the two assays. It was found that COVID19N-REAAD™ had positive percent agreement, negative percent agreement and overall rate of agreement of 97.73%, 91.01% and 93.23% respectively.