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SCTIMST develops multiplex RT-PCR kit to detect COVID-19 mutant strains

18 May 2021 | News

It has 97.3% sensitivity and 100% specificity in COVID-19 detection



Researchers at Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), based in Thiruvananthapuram, have developed a multiplex RT-PCR kit that targets two SARS CoV2 genes: RdRp and ORFb-nsp14, and the human RNAse P gene as the internal control to help detect a range of mutant strains.

Various studies have shown that RdRp and ORF1b-nsp14 genes are more sensitive in detecting COVID-19. In order to target the multiple variants in the second wave, using two highly accurate confirmatory genes like RdRp and ORF-nsp14, can give precise results. The ORFb-nsp14 is one of the least mutated genes in COVID-19 and currently, there are no kits in the market with ORF-nsp14 as the target.

The new kit is based on multiplex Taqman chemistry, amplifying all three genes in a single reaction. The amplification time for the assay is 45 minutes, apart from the time required for the RNA isolation from nasopharyngeal swab samples. Multiplexing two confirmatory genes will help shortlist possible new variants if one of the genes fails to amplify and can be marked for sequence analysis.

ICMR has validated this kit at the National Institute of Virology, Pune, and found that it has 97.3% sensitivity and 100% specificity in COVID-19 detection.

SCTIMST has signed a non-exclusive license MoU with Huwel Lifesciences, Hyderabad, to commercialize the kit.