

IIT-D gets ICMR nod for COVID-19 assay

28 April 2020 | News

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Researchers at the Indian Institute of Technology (IIT) Delhi Kusuma School of Biological Sciences (KSBS) have developed a detection assay for COVID-19 which has now been approved by ICMR. The assay has been validated at ICMR with a sensitivity and specificity of 100%. This makes IITD the first academic institute to have obtained ICMR approval for a real-time PCR-based diagnostic assay.

Using comparative sequence analyses, the IIT Delhi team identified unique regions (short stretches of RNA sequences) in the COVID-19 /SARS COV-2 genome. These regions are not present in other human corona viruses providing an opportunity to specifically detect COVID-19. This method uses primers targeting unique regions of COVID-19 that were designed and tested using real time PCR. These primers specifically bind to regions conserved in over 400 fully sequenced COVID-19 genomes. This highly sensitive assay was developed by extensive optimization using synthetic DNA constructs followed by in vitro generated RNA fragments.

This is the first probe-free assay for COVID-19 approved by ICMR and it will be useful for specific and affordable high throughput testing. This assay can be easily scaled up as it does not require fluorescent probes. The team is targeting large scale deployment of the kit at affordable prices with suitable industrial partners as soon as possible.