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China develops new real-time RT-PCR assays to detect SARS-CoV-2 variants

August 20, 2021 | News

Developed four rRT-PCR assays to detect SARS-CoV-2 variants and applied them to multiple virus strains



With the ongoing worldwide COVID-19 pandemic, an increasing number of viral variants are being identified, which poses a challenge for nucleic acid-based diagnostic tests.

Rapid tests, such as real-time reverse transcription-polymerase chain reaction (rRT-PCR), play an important role in monitoring COVID-19 infection and controlling its spread. However, the changes in the genotypes of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variants may result in decreased sensitivity of the rRT-PCR assay and it is necessary to monitor the mutations in primers and probes of SARSCoV-2 detection over time.

Researchers at the Chinese center for disease control and prevention have developed two rRT-PCR assays to detect the RNA-dependent RNA polymerase (RdRp) and nucleocapsid (N) genes of SARS-CoV-2.

They evaluated these assays together with previously published assays targeting the ORF1ab and N genes for the detection and confirmation of SARS-CoV-2 and its variants of concern (VOCs).

In addition, the researchers have also developed two rRT-PCR assays (S484K and S501Y) targeting the spike gene, which when combined with the open reading frames (ORF)1ab assay, respectively, to form duplex rRT-PCR assays, were able to detect SARS-CoV-2 VOCs (lineages B.1.351 and B.1.1.7).