Rapid screening of the SARS-CoV-2 VOC 202012/01 B.1.1.7 variant using three different assays

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Abstract

Background The aim of this study was to evaluate three commercially available methods (Allplex SARS-CoV-2 Assay, Allplex SARS-CoV-2/FluA/FluB/RSV Assay and Novaplex SARS-CoV-2 Variants I Assay) for screening of the SARS-CoV-2 VOC 202012/01 B.1.1.7 variant. **Methods** A total of 160 nasopharyngeal samples (150 positive and 10 negative for SARS-CoV-2) were tested with all three molecular assays. Next-generation sequencing (NGS) was used as the reference method to determine analytical performance. **Results** Total (100%) agreement was found for SARS-CoV-2 detection with all three assays. For B.1.1.7 screening, the sensitivity of the Allplex SARS-CoV-2 Assay, the Allplex SARS-CoV-2/FluA/FluB/RSV Assay and the Novaplex SARS-CoV-2 Variants I Assay (Seegene Inc.) were 94.5%, 98.7% and 100 %, respectively, while the specificities of the assays were 98.6%, 81.7% and 100%, respectively. **Conclusions** Although the best results for identifying the B.1.1.7 variant in this study were achieved with the Novaplex Variants I Assay, the three approaches evaluated can be considered cost-effective primary screening tools to rapidly monitor the VOC 202012/01 B.1.1.7 variant.

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