ILRI In-House reconstituted SARS-CoV-2 RT-qPCR testing kit as an alternative to the commercial kits

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Abstract

Due to worldwide shortage and the increasing cost of COVID-19 testing kits, International Livestock Research Institute (ILRI) scientists have developed in-house reconstituted testing reagents based on the known primer sequences and their targets on the SARS-COV-2 genome. The ILRI In-House reconstituted kit reduces the cost of COVID-19 RT-qPCR testing by at least 50% compared to the cheapest commercial kits available.

Our ILRI In-House reconstituted kit is a three-target multiplex formation consisting of IDT synthesized primer and probes targeting two SARS-COV-2 genes (ORF1ab and N) and an internal control targeting the human RNAse P gene. The reconstituted kit uses an RT-qPCR Mastermix with low Rox for RT-PCR amplification.

We have thoroughly conducted validation tests on the ILRI In-House reconstituted kit by comparing results of the same/matching samples generated by approved commercial kits for SARS-COV-2 testing. The commercial kits used for validation experiments include DA0990-Detection Kit (Da An Gene) and TaqPath™ COVID-19 CE-IVD RT-PCR Kit (Applied Biosystems) to which we have obtained 98.96% concordance. Detailed documentation of our validation results is available.

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