RNA internal control (ic) for routine clinical Diagnostic real-time reverse Transcription-pcr sars-cov-2 (rna internal control for routine rrt-pcr of sars-cov-2)

ABSTRACT

Since the beginning of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that source of a disease (COVID-19) pandemic in Indonesia, laboratories have to applied nucleic acid amplification tests (NAATs), namely real time Reverse-Transcriptase Polymerase Chain Reaction (rRT-PCR) as clinical diagnostic test. This method is extremely high sensitivity and speeds to diagnosis of virus infections. In order to obtain of appropriate in rRT-PCR's result, internal controls (ICs) has to issued assurance that clinical specimens are successfully amplified and detected. IC is allowing to provides the control being detected only if the target virus is absent and amplification is going well. IC can distinguish extraction failures, rRT-PCR restraint and technical errors relating to each individual sample. IC should be added at the samples prior to extraction. However, some commercial kit for rRT-PCR have available, but their performance for rules to add IC in within RT-PCR procedure has not yet been unassisted evaluated. The objective of this work was to estimated basic analytical of IC preparation for regular diagnostics of COVID-19. We were observed additional IC in RNA extraction and directly into the rRT-PCR reaction. In this study, we were used two commercial kit with conventional RNA extraction method (TIANamp Hi-DNA/RNA Kit) and automated viral RNA isolation (MagMAX™-96 Viral RNA Isolation Kit). The cycle threshold (Ct) were observed in treatment with additional IC in RNA extraction process, both of conventional RNA extraction method and automated RNA extraction method. Conversely, Ct were not observed in additional IC directly in rRT-PCR reaction. We conclude that IC should be added into sample in RNA extraction process.