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ePoster Viewing

Molecular virology

"Evaluation of analytical workflow and laboratory advantages by simultaneous execution of six different molecular assays using automated VERSANT® kPCR molecular system with MiPLX software"

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Objectives:

Cost-effective processing, short time to result, and multi-specimen processing collectively represent a major challenge for the molecular routine laboratory. This is especially true for viral load monitoring in immunocompromised patients. Every day there are multiple and specific viral load requests for CMV, EBV, BKV, JCV, Parvovirus B19, and HHV-6 from different specimen types from individual patients that have to be processed and reported. The goal of this study was to evaluate the Analytical Workflow and Laboratory Advantages by the simultaneous execution of six different molecular assays Using the Automated VERSANT® kPCR Molecular System with the MiPLX Software Solution

Methods:

The VERSANT® kPCR Molecular System* equipped with the new VERSANT® MiPLX Software Solution and the VERSANT® Sample Preparation 1.2 Reagents kit (Siemens Healthcare Diagnostics, Tarrytown, NY, USA) were used to extract DNA from clinical specimens and automate PCR set-up for single or multiplex assays. Approximately 100 whole blood samples spiked with commercial viral standards were analyzed in about 10 automated runs for determination of the six quantitative viral load assays. kPCR PLX Assay Kits for CMV, EBV, BKV, JCV, Parvovirus B19, and HHV-6 A/B were used. Extracted assay specific internal control and quantitative standards were included for each kit. Viral target amplification, detection and quantification was performed automatically on the AD module of the VERSANT® kPCR Molecular System. MiPLX software comes with "dynamic protocols" which enables automated PCR assay set-up and assay multiplexing capability of up to six PCR assays by eluting splitting from one extracted sample.

Results:

In this study we reported on the utility of the VERSANT® kPCR Molecular System* and the dedicated software to reduce the time necessary to perform the complete analysis of whole blood samples of subjects with viral infection. The MiPLX software allows to analyze simultaneously six PCR assays for CMV, EBV, BKV, JCV, Parvovirus B19, and HHV-6 A/B. This procedure is quite fast (three and half hours for the workflow time), reduces the operator-dependent variability (primary tube, uracyl-N-glycosylase and LIS-interface) and, last but not the least, is carried out by using one automated platform.

Conclusions:

The 6 kPCR PLX assays, when automated on the VERSANT® kPCR Molecular System with the new VERSANT® MiPLX Software Solution, showed good and robust assay performance. The VERSANT® MiPLX Software Solution, in combination with kPCR PLX assays, allows multiplexing of up to six assays from one sample in one run. This unique combination enables laboratories to manage complex viral panel orders for a more effective, consolidated, automated, and flexible workflow.