Rhinovirus

Panel composition

This EQA panel for the detection of Rhinovirus consisted of 10 samples containing various concentrations of Rhinovirus A, B & C, 1 Enterovirus 68 and 1 negative sample.

Material and methods

The QCMD panel was prepared using NucliSENS® easyMAG® (bioMérieux) for sample extraction with Specific B protocol (200/50).
Subsequently, the samples were analysed by real-time PCR using **Rhino&EV/Cc r-gene®** (bioMérieux - ref.: 71-042) on Dx Real-Time System (Bio-Rad).

Results and discussion

Panel code	QCMD Results			Rhino&Entero/Cc r-gene® Results
	Sample Content	Sample Type*	Dilution Factor	Rhino&EV Ct (530 nm)
RV 13-01	Rhinovirus (A) 90	Educational	1.0×10^{-6}	37.62
RV 13-02	Rhinovirus (B) 5	Educational	1.0×10^{-5}	35.61
RV 13-03	Rhinovirus (A) 90	Core	1.0×10^{-5}	34.35
RV 13-04	Rhinovirus (C)	Educational	1.0×10^{-3}	30.54
RV 13-05	Rhinovirus (A) 16	Core	$1.0 \times 10^{-4.5}$	38.77
RV 13-06	Enterovirus 68	Educational	1.0×10^{-6}	Negative
RV 13-07	Rhinovirus (B) 5	Core	1.0×10^{-3}	25.72
RV 13-08	Rhinovirus (A) 16	Educational	$1.0 \times 10^{-6.5}$	Negative
RV 13-09	Rhinovirus (A) 8	Core	$1.0 \times 10^{-5.5}$	34.13
RV 13-10	Negative	Core	-	Negative
RV 13-11	Rhinovirus (C)	Core	1.0×10^{-2}	26.39

«The QCMD EQA panels contain a range of samples, designed to look at different aspects of assay performance. Panel members are designated 'core proficiency samples' on the basis of scientific information, clinical relevance and clinical experience (...). Laboratories are expected to correctly analyse and report the core proficiency samples in order to show acceptable proficiency.» QCMD 2013 general announcement
Consequently, the educational samples are considered as challenging due to very low concentrations. They are clearly detection limits.

- **All 5 "Core" Rhinovirus-positive samples of Panel RV RNA 2013 are detected with Rhino&EV/Cc r-gene®.**
- **The "Core" negative sample is undetected as expected with Rhino&EV/Cc r-gene®.**
- **3/4 "Educational" Rhinovirus-positive samples (challenging samples) are detected with Rhino&EV/Cc r-gene®.**
- **The results show the good sensitivity and specificity of the Rhino&EV/Cc r-gene - réf.: 71-042**

Sensitivity of Rhino&EV/Cc r-gene®

Analytical sensitivity was performed on a range of dilutions of titrated cultures in a nasopharyngeal sample which had been previously tested negative.
The results show :
- 95% probability to detect Rhinovirus 1B in a nasopharyngeal sample containing 3.30 $TCID_{50}$/mL
- 95% probability to detect Rhinovirus 14 in a nasopharyngeal sample containing 0.43 $TCID_{50}$/mL
- 95% probability to detect Echovirus 25 in a nasopharyngeal sample containing 37.96 $TCID_{50}$/mL

"The data presented in this document illustrates the performance of the Rhino&Entero/Cc r-gene® assay when testing the Rhinovirus RNA EQA 2013 QCMD panel. The results are not representative of the QCMD EQA program report and full details on the QCMD EQA program can be obtained from the QCMD website (www.qcmd.org)".

Rhino&Entero/Cc r-gene®

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