QCMD proficiency panels 2014

ENTEROVIRUS

Rhino&EV/Cc-gene® *(vertical side text)*

Panel composition

This EQA panel for the detection of Enterovirus consisted of 10 samples containing various strains and concentrations of Enterovirus and 2 negative samples (VTM).

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-gene®** (bioMérieux - ref.: 71-042) on ABI 7500 Fast (Applied Biosystems).

Results and discussion

Panel code	Sample Content	Sample Type*	Sample status	Rhino&EV/Cc r-gene® Results — Ct (530 nm)
EVRNA 2014-01	Enterovirus 71	Core	Frequently detected	29.93
EVRNA 2014-02	Negative	Core	Negative	Negative
EVRNA 2014-03	Coxsackievirus A24	Core	Detected	37.50
EVRNA 2014-04	Enterovirus 71	Educational	Detected	39.35
EVRNA 2014-05	Coxsackievirus B3	Educational	Detected	43.76
EVRNA 2014-06	Echovirus 11	Educational	Detected	36.50
EVRNA 2014-07	Coxsackievirus A9	Core	Detected	35.57
EVRNA 2014-08	Negative	Core	Negative	Negative
EVRNA 2014-09	Coxsackievirus A16/B5	Core	Frequently detected	31.41
EVRNA 2014-10	Enterovirus 68	Core	Detected	27.19
EVRNA 2014-11	Coxsackievirus B3	Core	Frequently detected	30.19
EVRNA 2014-12	Echovirus 11	Core	Frequently detected	30.85

«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-2014-general-announcement
Consequently, the educational samples are considered as challenging due to very low concentrations. They are clearly detection limits.

- **100% (7/7) "Core" Enterovirus-positive samples of Panel Enterovirus RNA 2014 are detected with Rhino&EV/Cc r-gene®.**
- **The 2 "Core" negative samples are undetected as expected with Rhino&EV/Cc r-gene®.**
- **3/3 "Educational" samples are detected with Rhino&EV/Cc r-gene®.**
- **All 7 strains tested in this QCMD (EV-71, CV-A24, CV-B3, E-11, CV-A9, CV-A16/B5, EV-68) were detected with Rhino&EV/Cc r-gene®**
- **The results show the good sensitivity and specificity of the Rhino&EV/Cc r-gene® - ref.: 71-042.**

Sensitivity of Rhino&EV/Cc r-gene®

Analytical sensitivity has been performed on titrated cell culture of either Rhinovirus 14, Rhinovirus 1B or Echovirus 25. After extraction on NucliSENS® easyMAG® (bioMérieux) and amplification on ABI 7500 Fast (Apllied Biosystems), the results show:
- a 95% probability to detect Rhinovirus 14 in a nasopharyngeal sample containing 0.50 $TCID_{50}$/mL
- a 95% probability to detect Rhinovirus 1B in a nasopharyngeal sample containing 6.83 $TCID_{50}$/mL
- a 95% probability to detect Echovirus 25 in a nasopharyngeal sample containing 28.43 $TCID_{50}$/mL

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