



Evaluation of RealCycler Monotest for Viral Detection in CSF Samples

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Objectives

- Justification for evaluation
- Methods used
- Results
- Conclusions



Introduction

- Viral meningitis may be confirmed by analysis of CSF
- Identification of viruses in CSF is useful to aid diagnosis
- Rapid and sensitive test is desirable



Justification

- PCR assays on CSF often provide high diagnostic yields
- The microbiology laboratory at University Hospital of North Tees currently refers viral testing from CSF to a reference laboratory
- Reduced turn-around times needed
- The RealCycler Monotest *in vitro* diagnostic kits by Progenie Molecular were evaluated



Methods

- *RealCycler* EBCMV1 kit
- *RealCycler* ENHEVA kit



- SmartCycler® 





Targets

- *RealCycler* EBCMVI allows real-time PCR qualitative detection of DNA from Epstein-Barr virus (EBV), Cytomegalovirus (CMV) and Herpesvirus type 6 (HHV6) simultaneously
- *RealCycler* ENHEVA allows real-time PCR qualitative detection of RNA from Enterovirus, DNA from Herpes Simplex virus (type 1 + type 2) and Varicella Zoster virus simultaneously



CSF sample in sterile universal

Extraction (Arrow)



EBCMV1



9 μ L CSF or Control



Results available
in 72 minutes

ENHEVA



2 μ L of retrotranscriptase +
7.5 μ L CSF or Control



Results available
in 84 minutes



INVESTORS
IN PEOPLE

Bronze



Investors
in People
Good Practice

Health &
Wellbeing
Award



Results

	VZV		ENTER		HSV	
	Progenie	Ref lab	Progenie	Ref lab	Progenie	Ref lab
Positive samples	1	1	2	2	0	0
Negative samples	39	39	38	38	40	40

	EBV		CMV		HHV6	
	Progenie	Ref lab	Progenie	Ref lab	Progenie	Ref lab
Positive samples	1	Not tested	0	0	0	0
Negative samples	39	40 Not tested	40	40 Not tested	40	33 Not tested



Results

Three samples generated positive target results

Positive Samples	Progenie Results	Ref Lab Results
132775743	VZV & EBV	VZV but not tested for EBV
132775980	Enterovirus	Enterovirus
132776405	Enterovirus	Enterovirus



North Tees NEQAS Returns - 2013

North Tees Results: UK NEQAS for Viruses in CSF	
	Dispatch date 4/3/13
Specimen no.	Results
1333	HSV Pos (Ct 33.2)
1334	Negative
1335	VZV Pos (Ct 36.6)
1336	Negative
1337	Enterovirus Pos (Ct 40.7)
1338	Enterovirus Pos (Ct 39.3)

North Tees Results: UK NEQAS for Viruses in CSF	
	Dispatch date 6/8/13
Specimen no.	Results
1603	HSV Pos (Ct 32.1)
1604	VZV Pos (Ct 35.7)
1605	Negative
1606	VZV Pos (Ct 25.1)
1607	HSV Pos (Ct 34.6)
1608	Enterovirus Pos (Ct 39.3)



Conclusions

- 100% correlation achieved
- Significant cost saving of 20%
- Progenie advanced kit during evaluation
- Kits and PCR platform are easy to use
- Rapid results
- Further Progenie kits are being brought in-house



References

Health Protection Agency (2012). *UK Standards for Microbiology Investigations. Investigation of Cerebrospinal Fluid.*

Available on Worldwide Web:

<http://www.hpa.org.uk/webc/hpawebfile/hpaweb_c/1317132861004>

Progenie molecular. RealCycler EBCMV v.1. *Spain, 2012.*

Progenie molecular. RealCycler ENHEVA v.3. *Spain, 2013.*



Any easy questions?

