

SAMPLE REPORT



INTERMEDIATE REPORT

TEST REQUEST: Antiviral resistance for herpes simplex virus (HSV)

TEST PERFORMED AT: Rega Institute for Medical Research (Laboratory of Virology and Chemotherapy, and Laboratory of Immunobiology)

DATE SAMPLE RECEIVED BY REGAVIR: 10/02/09

REPORT DATE: 16/02/09

Patient identification	Name (Last, First):	
	Date of birth:	<input type="checkbox"/> Male <input type="checkbox"/> Female
	Identification number:	
	Address:	

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Patient clinical information	Disease:
	Antiviral treatment received:
	Additional information:

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Specimen information	Original identification:
	RegaVir Identification:
	Date collected:
	Type:
	Additional information:

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Requesting doctor(s) / Laboratory	Name (Last, First):
	Hospital:
	Department:
	Address:
	e-mail:
	Tel. / Fax:

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TESTS

- 1) Phenotyping of HSV
- 2) Genotyping of HSV (if results from phenotyping indicate drug resistance)
 - Thymidine kinase gene
 - DNA polymerase gene

PROTOCOL

- 1) Phenotyping
 - Growth of viral sample in human embryonic lung (HEL) fibroblasts till 100% cytopathic effect (CPE) is reached.
 - Antiviral assay performed in HEL cells using at least two different viral inocula and a reference HSV strain.
 - Determination of EC₅₀ (50% inhibitory concentration) for each drug. Comparison of EC₅₀ values between a reference strain and patient sample(s).
- 2) Genotyping
 - Isolation of viral DNA from the sample
 - Amplification of the TK and/or DNA polymerase genes by PCR
 - Direct sequencing of the TK and/or DNA polymerase genes
 - Sequence alignment (derived sequences of patient isolate are aligned against reference HSV strains).

RESULTS

1) Phenotyping

Strain	EC ₅₀ (µg/ml)				
	Acyclovir	Ganciclovir	Brivudin	Foscavir	Cidofovir
HSV XXXXX	5.52	0.055	>100	32.7	0.8
	5.52	0.072	>100	35.8	0.8
	11.7	0.8	>100	35.8	2
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Reference HSV-1 (Kos strain)	0.016	0.0029	0.0131	35.8	0.36
Reference HSV-2 (G strain)	0.058	0.0064	11.7	32.7	0.8
EC ₅₀ : Concentration required to reduce virus induced cytopathicity by 50%.					

- 2) **Genotyping: It will be performed in the coming days since the phenotyping is indicative of drug resistance.**

CONCLUSIONS AND COMMENTARY

- 1) **The drug-susceptibility profile of the patient sample differs from that of the reference HSV strains.**
- 2) **The strain HSV XXXXX showed decreased sensitivity to acyclovir and ganciclovir, but remained sensitive to foscavir and cidofovir. These results suggest an alteration at**

the level of the viral TK, responsible for the phosphorylation of acyclovir, brivudin and ganciclovir.

3) The sensitivity/resistance profile to brivudin should not be considered since the patient's sample is a genital herpes, due to HSV-2 and brivudin has very weak activity against HSV-2.

4) The genotyping will be performed because a resistance phenotype was observed.

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