

FLETCHER ALLEN HEALTH CARE

PATHOLOGY & LABORATORY MEDICINE

TEST UPDATE: HERPES SIMPLEX VIRUS MOLECULAR DETECTION

ASSAY INFORMATION:

This molecular amplification assay utilizes real time polymerase chain reaction (PCR) technology and provides a highly sensitive method for detection. Herpes Simplex Virus (HSV) Molecular Detection will be offered as a replacement for Herpes Simplex Culture (Test Code HS). The test will be performed in the Clinical Microbiology Laboratory.

CLINICAL APPLICATION:

HSV is one of the most frequent causes of sexually transmitted infection in the United States. It is also an important cause of cutaneous, ocular, and CNS infection, among others. Herpes Simplex Virus Molecular Detection, in combination with Enterovirus Molecular Detection (ENVPCR), allows us to determine the viral etiology of aseptic meningitis rapidly for the two most common etiologic agents.

HSV is a very important cause of genital tract infection and, even more importantly, a devastating infection of the newborn infant. Determination of the serotype of herpes virus has both prognostic and sociologic implications. Recurrent genital infection is both more frequent and more severe with type 2 virus than with type 1 strains. Also, type 2 virus is transmitted exclusively by sexual contact. In contrast, type 1 strains, which account for approximately one-third of cases nationally and in our community, may be acquired by non-sexual routes, such as autoinoculation from oral sites.

Infections of the eye, mouth, and cerebrum are usually caused by type 1 strains, whereas meningitis is more commonly caused by type 2 virus. Skin lesions, which can sometimes mimic shingles, can be caused by either type.

METHOD:

The test is performed on the Cepheid Smart Cycler system, which is a real time PCR instrument, using Cepheid reagents. Extraction of DNA is performed using a Biomerieux EasyMag extractor. The sensitivity and specificity are high. In some studies the sensitivity has been 2-3 times that of culture, while specificity remained very high. This test uses analyte-specific reagents (ASRs), which have not been cleared by the FDA; the validation has been performed at Fletcher Allen, using cultures and reference PCR assays as the comparative standard. For certain situations, in which positive specimens are infrequent (e.g., CSF and ocular specimens), we will continue to send a portion of the specimen to Mayo Medical Laboratories (at our expense) for confirmation until our assay has been validated by sufficient numbers of tests at the referral laboratory. In addition to being significantly more sensitive than culture, the result will be available more rapidly, and there will be no delay for typing studies.

ORDERING INFORMATION:

Test Name: Herpes Simplex Virus Molecular Detection

Test Code: HSPCR

Bracket Code: 5423

CPT Code: 87529 (x2 for types 1 & 2)

Sample Requirements: 1. Swab of lesion in VCT broth; or
2. Fluid collected aseptically into a sterile container;
minimum volume 1.0 mL

Expected Value: Negative

Test Schedule: Monday – Friday

Analytical Time: Report available within 24 hours.

Price: Please call Laboratory Customer Service (847-5121 or 1-800-991-2799) for pricing information.

Effective Date: Monday, May 4, 2009

REFERENCES:

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- Podzorski, R. P. (2006). "Evaluation of the Cepheid herpes simplex virus typing real-time PCR assay using dermal and genital specimens." *Diagn Microbiol Infect Dis* **56**(2): 173-177.
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- Rose, L., C. M. Herra, B. Crowley (2008). "Evaluation of real-time polymerase chain reaction assays for the detection of herpes simplex virus in swab specimens." *Eur J Clin Microbiol Infect Dis* **27**(9): 857-861.
- Schmutzhard, J., H. Merete Riedel (2004). "Detection of herpes simplex virus type 1, herpes simplex virus type 2 and varicella-zoster virus in skin lesions. Comparison of real-time PCR, nested PCR and virus isolation." *J Clin Virol* **29**(2): 120-126.