CPAL
Central **P**ennsylvania **A**lliance **L**aboratory

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Herpes Simplex Virus (HSV) Real Time PCR Assay

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Effective Date:
February 1, 2011

Mnemonic:
HSV 1/2 DNA

Performed:
Monday through Saturday

Acceptable Specimens:
- Swab specimens placed in BD Universal Viral Transport Media (VTM)
- Cerebral Spinal Fluid

Reference Ranges
The reference range for Herpes simplex virus Type 1 is ***Not Detected***
The reference range for Herpes simplex virus Type 2 is ***Not Detected***

Summary:
The qualitative molecular (DNA) detection of HSV types 1 and 2 represents an appropriate method for detection and typing of HSV in herpes-like lesions and in cerebral spinal fluid (CSF). CPAL now offers an assay that is capable of detecting and differentiating HSV types 1 and 2.

Herpes simplex is an infection that affects either the mouth or genital area. It is caused by two types of viruses, Herpes Simplex Virus 1(HSV1) and Herpes Simplex Virus 2 (HSV2). These two viruses are genetically similar. The primary difference is their "site of preference" or where they typically establish latency in the body. Although either virus can reside in

either or both areas, HSV 1 prefers the trigeminal ganglion near the ear and HSV 2 the sacral ganglion near the spine. Once an infection occurs, the virus spreads to nerve cells and remains there for the life of the host. It may reactivate from time to time and cause symptoms or "outbreaks".

The symptoms of Herpes include mouth sores, genital lesions, blisters or ulcers, fever blisters, fever (usually during the initial infection), and enlargement of lymph nodes in the neck or groin. HSV 1 is usually associated with infections of the lips, mouth and face and is the most common. It can be acquired in childhood and is transmitted by contact with infected saliva. HSV 1 can also cause genital herpes.

HSV 2 is generally associated with genital herpes and is sexually transmitted, although it can infect orally as well. It is possible to infect another person even when the infected person is not showing any symptoms. It is possible to have a cross infection of HSV1 and HSV 2 although research has indicated that an infection with oral HSV 1 can provide some immunity against an infection of HSV 2.

Herpes can also infect the fetus and cause congenital abnormalities. If a mother has an outbreak during delivery, it is possible to infect the newborn. Additional complications include meningitis, encephalitis, eczema, herpetiform and keratoconjunctivitis. Prolonged or severe symptoms can be seen in individuals with compromised immune systems. There is no cure for herpes but antiviral medications are available to prevent future outbreaks.

Limitations of Procedure:

1. The limit of detection for this assay has been shown to be 100 cop/mL. The sensitivity of this assay may be affected by numerous variables including specimen handling, and the presence of unknown inhibitors in the specimen.
2. The HSV real time PCR assay is designed to detect and characterize the DNA pol gene of Herpes Simplex Virus (HSV). The assay can detect HSV1 DNA, HSV2 DNA or both, in clinical lesions or CSF. As with any laboratory assay, the results of this assay should be considered in the entire context of the clinical presentation.