



Diagnosis of Equine Herpes Virus Infection

Information

Recent outbreaks of neurological diseases of horses caused by equine herpes virus-1 (EHV-1) have been documented. Diagnosis of this disease presents difficulties for both clinicians and diagnostic laboratories. Some information on samples and methods for EHV-1 testing follows.

Viral Isolation

Live virus can be isolated from nasal and pharyngeal swabs that are placed in viral transport medium immediately after collection. Tissue samples, cerebral spinal fluid, and EDTA- blood samples (buffy coat) can also be useful samples for virus isolation. The cost for virus isolation is \$20/swab or \$23.50/tissue. Viral transport medium is available from the WVDL (6 tubes for \$12). Nasal and pharyngeal samples must be collected early in the disease process, preferably within 48 hours of onset of clinical signs. Discuss selection of tissue samples to be collected at necropsy with a pathologist before you perform the necropsy.

Polymerase Chain Reaction PCR

PCR can be used to identify virus in nasal/pharyngeal swabs, tissue samples, and EDTA- blood samples (buffy coat). The advantage of PCR is speed, sensitivity (detection of low viral load), and capability of detecting non-viable virus. Detection of EHV-1 associated with compatible clinical signs strongly suggests a diagnosis of EHV-1. Samples for PCR can be submitted to the WVDL for referral to the University of Kentucky Livestock Disease Diagnostic Center (<http://fp1.ca.uky.edu/lddc>) or sent directly to that laboratory. The WVDL charges \$15 for samples referred to other laboratories.

Serology

Serum neutralization testing (SN) can demonstrate that an animal has been exposed to EHV-1. The SN test used at the WVDL detects antibody to both EHV-1 and 4. The charge for this testing is \$5/sample, and the test is set up every Tuesday and Friday. Results are available 3-5 days after set-up. Testing a single serum sample from an acutely ill animal is problematic because a measurable antibody response post infection requires a time span measured in days. Single serum samples tested for antibody levels can be very difficult to interpret. An ideal testing situation would be the simultaneous submission of two serum samples collected 14 days apart (acute and convalescent samples). A four-fold or greater increase in titer between acute and convalescent samples indicates recent exposure/infection.