

Equine Viral Arteritis (EVA) Diagnostic Testing

University of Kentucky-Veterinary Diagnostic Laboratory (UK-VDL)

Introduction:

Equine viral arteritis (EVA) is a contagious viral disease of equids caused by equine arteritis virus—an RNA virus classified in the genus *Alphaarterivirus*. The Bucyrus strain is the most prevalent serotype of the virus, although variants exist. Equine arteritis virus is found in horse populations worldwide.

The majority of naturally acquired infections with EAV are subclinical. Clinical signs of EVA can vary in range and severity but often cause fever, depression, anorexia, edema, conjunctivitis, urticaria/hives, and abortion. Edema is common in the limbs, scrotum, prepuce, or mammary glands. Sudden pneumonia and enteritis may occur in young foals. Apart from mortality in young foals, the case-fatality rate of EVA is very low. Affected horses almost invariably make complete clinical recoveries. A long-term carrier state can occur in some infected stallions. The carrier stallion is the greatest concern in transmission.

EVA Testing:

For diagnostic cases: PCR, Virus Isolation (VI), and virus neutralization (VN) tests are recommended. VN antibody tests are recommended for regulatory and export cases as well as vaccination titer checks.

Test	Specimen Type
PCR	Nasopharyngeal or conjunctival swab, EDTA blood (10 mL tube), tissue*
VI	Nasopharyngeal or conjunctival swab, EDTA/heparin blood (10 mL tube), tissue*, semen**
VN	Serum from red top tube (7 or 10 mL blood tube or 2mL of serum)
*Tissue collected from mortality cases include lymphatic glands near alimentary tract, lung, liver, and/or spleen. Please submit deceased equine to UK-VDL for necropsy.	
**Semen is currently not tested at UK-VDL.	

Specimen Collection:

Use aseptic techniques when collecting and handling specimens.

Swabs:

1. Properly restrain horse.
2. Using a sterile 16" (40 cm) cotton, synthetic, or uterine swab, swab horse's nasopharynx via the ventral meatus at least 6 inches in. Allow 1 minute to absorb respiratory secretions. Conjunctival swabs may also be taken.
3. Once collected, place swab into a 5-10 ml glass or plastic tube with leak-proof cap. Add sufficient viral transport media to cover the swab tip. If no transport media is available, sterile saline can be used. Do not submit in gel or Amies swab tubes.
4. Clearly label tube with horse's name, test requested, and date sample was taken. Keep sample chilled and transport to laboratory within 24 hours with completed accession sheet found on UK-VDL's website.

Blood Tubes:

1. Collect blood in appropriate tube for test requested (see chart above).
2. Clearly label tube with horse's name, test requested, and date sample was taken.
3. Keep sample chilled and submit to lab as soon as possible with completed accession sheets found on UK-VDL's website.
4. Blood that is hemolyzed cannot be used for testing.