National Veterinary Services Laboratories
Equine Arteritis Virus Antibody
Proficiency Test Summary

1. Composition of proficiency test panel: The equine arteritis virus antibody panel consists of twenty 0.6 ml samples of equine serum. The disease caused by equine arteritis virus is termed equine viral arteritis (EVA) and the panel name is abbreviated as EVA. The panel contains negative, weak positive and strong positive samples, and includes blind duplicates. The samples are labeled with the test acronym and calendar year (e.g., EVA 2010), a panel set number (e.g., Set 11), and a code number (codes 1 through 20). The codes are scrambled between sets.

2. Cost of proficiency test: Click here to view current NVSL Catalog of Reagents. Additional information on diagnostic reagents, including ordering, payments, shipping details and fees, is located at www.aphis.usda.gov/nvsl. Then click on the Reagents and Proficiency Tests link.

3. Storage conditions: Short term (up to 7 days) store at 4° ± 2° C. Long term (over 7 days) store at <-20° C in a non-frost free freezer.

4. Sample preparation/selection criteria: Samples with high, medium, and low concentrations of EVA antibody are chosen for incorporation into the panel. Antibody levels arise from naturally and experimentally acquired infections. Each panel member is tested at least three (3) times, by a minimum of three NVSL technicians, in the OIE prescribed virus neutralization test for EVA. In addition, prior to distribution, the panel is examined by the University of Kentucky OIE reference laboratory for EVA to determine expected titers for each panel member.

5. Panel quality control: Samples are monitored for stability and reproducibility. Stability testing of the panel has determined that normal shipping and handling conditions do not change the end values of the components. Two panel sets of each lot of proficiency panels are used to confirm stability after final preparation.

6. Timing of the proficiency test distribution and data collection: The NVSL does not regulate which laboratories offer EVA serology testing. A list of laboratories that have successfully completed the EVA proficiency test is maintained by NVSL as a courtesy to countries that require EVA serology testing by an approved laboratory for international movement of horses or equine products. The EVA proficiency test is administered approximately once every two years. Advance notice is provided through the AAVLD website.

7. Test method: Performance and interpretation of the EVA virus neutralization proficiency test should be conducted using methods as described in the current OIE *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*. The NVSL SOP for this method is SOP-EO-2108.

The EVA virus neutralization test at NVSL is ISO17025 accredited.

8. Submitting test results: Participating laboratories are required to have data submitted for scoring no more than four (4) weeks after panel distribution. Results are reported to the NVSL by fax or mail. One set of results is reported from each laboratory.

9. Scoring of individual panel samples: For each sample, a titer result is reported. The international standard for the lower limit of antibody detection for EVA is a serum titer of 1:4. Scoring is based on two criteria: proper identification of positive and negative samples (with respect to EVA antibody) and accuracy of reported titers.

10. Laboratory pass/fail criteria: Identity scores are determined by assigning one point per sample correctly identified as negative (antibody titer less than 1:4) or positive (any titer). Accuracy scoring is determined by assigning one point per sample for the expected titer. Reported titers within one two-fold dilution of the expected titer are also assigned one point. For a four-fold difference in titer from the expected result, 0.33 point is subtracted and for an eight-fold difference 0.67 point is subtracted. Reported titers that differ more than eight-fold from the expected titer receive zero points for accuracy. Satisfactory results for identity and accuracy are determined after examination of panel performance at participating laboratories. Historically, approximately 20 laboratories have participated in the EVA panel.

11. Reporting laboratory test scores: Results for each laboratory are reported to the individual laboratory director and to the appropriate AVIC for the laboratory's location. Reports include individual laboratory results for each sample as well as summary results of participants in the proficiency test. Results are compiled and reported within 30-60 days of the receipt of participants' results.

12. Remedial actions required for failing laboratories: Laboratories that fail the proficiency test are encouraged to contact subject matter experts at NVSL for discussion of methods and resolution of potential areas of concern. Laboratories have the option of obtaining a second panel set to attempt a retest. If a failing laboratory declines to take, or does not pass, the retest the laboratory is removed from the list of approved laboratories for EVA serology. The NVSL offers training in the performance of the EVA virus neutralization test.

13. Special requirements: Restrictions - Owing to the requirements for maintenance of cell culture and propagating equine arteritis virus, the EVA VN test has been limited to federal, state, and university laboratories. Successful completion of the proficiency test is required prior to inclusion on the list of approved laboratories for this test. At present, there are approximately 20 laboratories approved to conduct EVA serology for export testing.
The current list of approved laboratories can be found at:
http://www.aphis.usda.gov/animal_health/lab_info_services/approved_labs.shtml
International requests for the EVA proficiency panel are considered on a case-by-case basis and must follow applicable authorization and permit requirements.