

## ***Actinobacillus pleuropneumoniae* screening ELISA (CHEKIT-APP-Apx IV)**

### **Fact Sheet**

#### **General information**

A new *Actinobacillus pleuropneumoniae* (APP) screening ELISA (CHEKIT-APP-Apx IV)<sup>6</sup> is now available at the University of Minnesota Veterinary Diagnostic Laboratory (MVDL). CHEKIT-APP-Apx IV may be used alone or in combination with the serotype-specific SWINECHECK APP ELISA.<sup>1</sup> Since these tests detect different APP antibodies, it is important to well understand their characteristics in order to choose the test which best applies to a particular situation.<sup>2,3,5</sup>

CHEKIT-APP-Apx IV detects antibodies against the Apx IV toxin. This toxin is produced by all known APP serotypes, and by APP exclusively, as described so far. CHEKIT-APP-Apx IV can thus potentially detect an antibody response to all APP serotypes, including those for which commercial serotype-specific ELISA tests are not available. Furthermore, Apx IV toxin is expressed during infection only (not *in vitro*). This means that it can differentiate between vaccination and infection. Pigs that have been vaccinated with an APP bacterin will be negative for APX IV antibodies, unless they are infected with APP.

SWINECHECK APP detects antibodies against the long chain LPS of several APP serotypes. Presently, kits are available for serotypes 1-9-11, 2, 3-6-8-15, 4-7, 5, 10, and 12. The test is able to differentiate antibodies between groups of serotypes (eg. 1-9-11 vs. 4-7) but not within groups (eg. 4 vs. 7). For serotypes 13 and 14, sera may be submitted to the University of Montreal (Dr Marcelo Gottschalk). It is important to note that serotypes 4, 9, 11 and 14 have never been isolated in USA so far.

Sensitivity and specificity of the CHEKIT-APP-Apx IV, as reported by the manufacturer, are 95% and 99%, respectively.<sup>4,6</sup> On the other hand, sensitivity and specificity of SWINECHECK APP, as reported by the manufacturer, vary between 89.7-100% and 88.3-99.9%, respectively.<sup>1</sup> Note that sensitivity and specificity studies for CHEKIT-APP-Apx IV and SWINECHECK APP have not been conducted on the same sera. Especially Apx IV study concerned a limited number of animals. Consequently, this information is given for information only and cannot serve for test comparisons. The MVDL is presently conducting a comparison trial.

#### **Application**

CHEKIT-APP-Apx IV can be used as a screening test to monitor the health status of herds negative for all APP serotypes. However, except for high health status breeding herds, this is rather an uncommon situation. It may also be used in combination with serotype-specific SWINECHECK APP ELISA to better define the status of APP infection in affected swine populations (e.g., to determine which serotypes are present, if antibodies results from vaccination or infection, etc.).<sup>2,3</sup>

#### **Sample submission**

Please submit 0.5 ml of serum for this test. Positive sera will be saved for 30 days and will be used for serotype-specific ELISA, if requested. This test is done on a weekly (as needed) basis and hence the results are available within 2 to 10 days of sample submission.

If you have any questions about the procedure, or proper submission of samples, please contact Dr. Simone Oliveira ([oliv0107@umn.edu](mailto:oliv0107@umn.edu)) or Dr. Sagar Goyal ([goyal001@umn.edu](mailto:goyal001@umn.edu)) at 1-800-605-8787.

## **References:**

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