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*Towards  
the veterinary  
diagnostics  
of the  
future*

Main topic : One Health

## An Indirect ELISA for The Detection of Anti-M. bovis Porcine Antibodies

ROCHE M.<sup>1</sup>, OLAGNON L. <sup>1</sup>, PAGES A. <sup>1</sup>, MILANO M. <sup>1</sup>, LIMOZIN A. <sup>1</sup>, COMTET L. <sup>1</sup>, POURQUIER P. <sup>1</sup>

<sup>1</sup> Innovative Diagnostics, Grabels, France

### **Introduction :**

Bacterias of the Mycobacterium tuberculosis complex (MTBC) cause Tuberculosis (TB) in diverse hosts, including livestock and wildlife species such as wild boar (*Sus scrofa*), which is considered a natural host of the disease.

The ID Screen® Porcine Tuberculosis Indirect ELISA is designed to detect antibodies directed against Mycobacterium bovis in porcine (wild boar and pig) serum and plasma.

This new indirect ELISA can be used with individual porcine serum or plasma as well as filter paper samples (FPS). The kit includes microplates coated with Mycobacterium bovis recombinant protein and an anti-porcine IgG horseradish peroxidase (HRP) conjugate.

### **Materials and methods :**

Diagnostic specificity was evaluated on 651 pig samples, 425 wild boars and 226 domestic pigs, from Bovine TB free areas.

Diagnostic sensitivity was evaluated on 16 wild boar serum samples, 2 from France and 14 from Spain. The positive status of the french samples were determined by culture and those from Spain were found positive with another commercial ELISA (Kit A).

Correlation with a commercially available ELISA kit (kit A) was determined by testing 419 samples from negative and infected herds.

Lastly, 16 samples, including highly positive and negative samples were tested in parallel on serum and FPS. Threshold samples were also included to assess the limit of detection.

### **Results :**

ID Screen® Porcine Tuberculosis Indirect measured specificity was 99.7 % (CI95%: 98.9 % - 99.8 %), n=651. The percentage of correlation between ID Screen® Porcine Tuberculosis Indirect and kit A was greater than 98%, indicated very high correlation with Kit A. Comparable results were obtained for all samples, regardless of the sample type, meaning that serum and FPS can be used equivalently.

### **Conclusion :**

The ID Screen® Porcine Tuberculosis Indirect ELISA kit demonstrates high specificity, efficiently detects positive animals, and demonstrates excellent correlation with another commercial ELISA. Results are obtained in just 90 minutes. The ID Screen® ELISA is a reliable tool for the detection of porcine antibodies against Mycobacterium bovis with good reproducibility and repeatability of the measure.

FPS might be used with this kit, making sample collection easier and cheaper. The proposed elution protocol in deepwell tubes with direct transfer to the ELISA plate allows a fast treatment of samples. Results indicate that FPS can be a reliable alternative to serum samples for porcine TB detection.