

# 7<sup>TH</sup> INTERNATIONAL VETERINARY CONGRESS

September 04-05, 2017 | Paris, France

## Comparison of serologic tests for epidemiological diagnosis of bovine babesiosis in México

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The high economic impact caused by one of the most important tick-borne disease in Mexico, bovine babesiosis, has led to the search and development of effective techniques that facilitate its diagnosis and control. The objective of this study was to compare the serological indirect fluorescent antibody test (IFAT) and the indirect enzyme-linked immunosorbent assay (iELISA) for the identification of cattle exposed to *Babesia* spp. Negative and positive sera controls, sera from experimentally infected animals and sera from animals under field conditions were evaluated. For the iELISA, the recombinant proteins RAP-1 $\alpha$  (*Babesia bigemina*) and MSA-1 (*B. bovis*) were used as antigens. The technique iELISA demonstrated high sensitivity and diagnostic specificity rates using the RAP-1- $\alpha$  antigen. The sensitivity and diagnostic specificity rates for the indirect ELISA with the *B. bigemina* RAP-1- $\alpha$  recombinant antigen were 90% and 98.75%, respectively, whereas a sensitivity and diagnostic specificity of 73.33% and 81.25%, respectively, were obtained with the IFAT. The kappa index ( $\kappa$ ) between the IFAT (*in vitro* culture-derived *B. bigemina* antigen) and iELISA (RAP-1- $\alpha$ ) was 0.44. Although the serological tests do not have the capacity to discriminate cattle from three different geographic regions in Mexico that are exposed to either *Babesia bovis* and / or *B. bigemina*, it was concluded that the iELISA (RAP-1- $\alpha$ ) is a tool with high sensitivity and diagnostic specificity, able to lead to a better knowledge on the epidemiology of bovine babesiosis, providing useful information for the design of control strategies and management of cattle babesiosis, one of the most important tick-borne disease in Mexico.

### Biography

Julio V Figueroa is currently working as a researcher and head of the National Research Center for Veterinary Parasitology, INIFAP, in Jiutepec, Morelos, Mexico. He obtained his Veterinary Medicine Degree from The State of Mexico Autonomous University in Toluca, Mexico, and the MSc and PhD degrees in Veterinary Pathology and Microbiology at the University of Columbia-Missouri, in Columbia, MO, USA. He has conducted research on tick borne diseases of cattle during the past 30 years and has published over 70 research papers in peer reviewed international journals.

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