



## XI YABOUMBA CONGRESS 2018

### **A NEW ELISA METHOD TO EVALUATE THE HUMORAL HOST RESPONSE TO *MACRORHABDUS ORNITHOGASTER* PROVENTRICULAR INFECTION IN BIRDS**

G. Rossi, DVM, PhD, MS, Dipl. ECZM (WHP); A. Angorini, DVM; S. Vincenzetti, BSc, A.R. Attili, DVM; P. Robino\*, DVM, PhD; P. Nebbia\*, DVM; L. Galosi, DVM.

School of Biosciences and Veterinary Medicine, University of Camerino, Matelica (MC), Italy  
\*Department of Veterinary Sciences, University of Turin, Grugliasco (TO), Italy

#### **ABSTRACT**

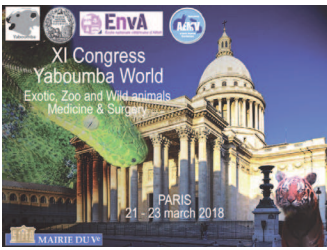
In several species of birds, the infection with *Macrorhabdus ornithogaster* (MO) and the associated proventriculitis has long been known<sup>1,2</sup>. To date, no study has shown whether MO infection induces a specific immune response in affected birds. Positive aviaries of canaries and budgerigars have been identified and blood collections have been performed randomly in apparently healthy and symptomatic birds. Sera were preliminarily screened for a potential presence of specific antibodies, using of an immunohistochemical test performed with sections of heavily infected proventriculi as target antigen, incubated with the collected sera used as primary antibodies. Positive and negative control sera were then used to setting-up an indirect ELISA test, which was the first achievement of our study. After determination of a specific and titratable humoral response to the infection by affected birds, we determined some protein and glycolipid fractions that represent the most important antigens to which the antibody response occurs, using a Western Blotting test. In this analysis, proteins belonging to whole MO sonicated cells were separated by electrophoresis and transferred to a nitrocellulose membrane, in order to be used as antigen substrate and incubated with previously screened hyper immune sera. As a result, it was demonstrated that antigens belonging to MO cells (a cluster of proteins with molecular weight between 35 and 21 kDa) are recognized by sera of budgerigars and canaries heavily infected by this yeast. Further studies will be necessary in order to characterize these proteins, essential for the realization of subsequent immunization trials.

#### **CITATION INDEX**

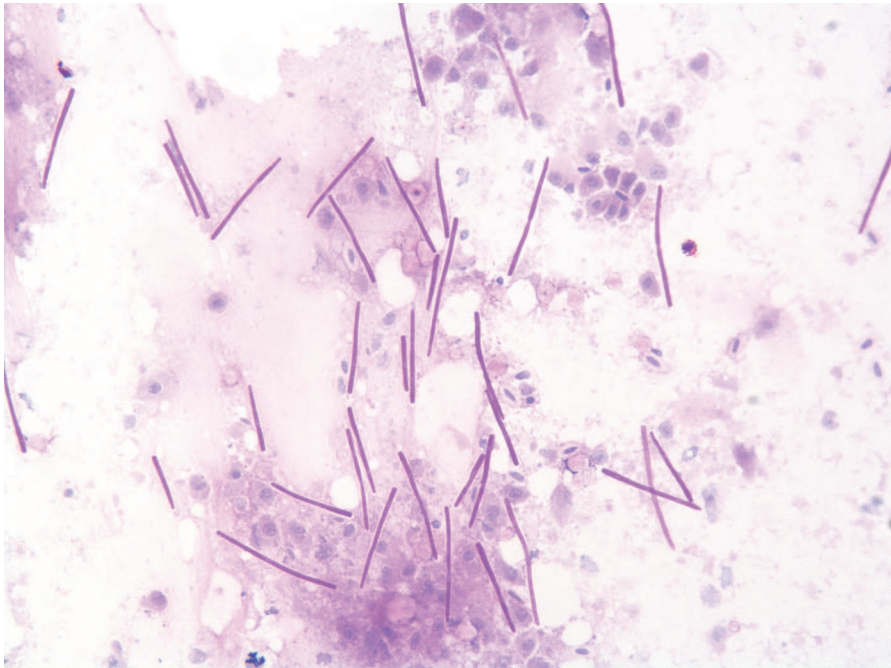
1. Phalen D. Diagnosis and Management of *Macrorhabdus ornithogaster* (Formerly *Megabacteria*). *Vet Clin North Am Exot Anim Pract.* 2005. 8:299 – 306.
2. Phalen D. Update on the Diagnosis and Management of *Macrorhabdus ornithogaster* (Formerly *Megabacteria*) in Avian Patients. *Vet Clin North Am Exot Anim Pract.* 2014. 17:203 – 210.

#### **AUTHOR ADDRESS:**

G. Rossi, DVM, PhD, MSc, Dipl. ECZM (WHP)  
School of Biosciences and Veterinary Medicine  
University of Camerino,  
Via Circonvallazione 93-95,  
62024 Matelica (MC), Italy.  
e-mail: giacomo.rossi@unicam.it



# XI YABOUMBA CONGRESS 2018



Proventriculus scraping, Megabacteria colored in red, PAS stain, 20x.