

**FIRST MOLECULAR DETECTION OF *LEUCOCYTOZOON* (HAEMOSPORIDA:  
LEUCOCYTOZOIDAE) IN THE ATLANTIC FOREST: IDENTIFICATION OF NEW  
LINEAGE BASED ON SEQUENCE OF THE MITOCHONDRIAL GENE CYTOCHROME B**

**Kiba Jamila Miguel Comiche<sup>1</sup>, Alan Fecchio<sup>2</sup>, Fabio Schunck<sup>3</sup>, Bruno da Silva Mathias<sup>4</sup>, Lilian de Oliveira Guimarães<sup>4</sup>, Karin Kirchgatter<sup>1,4</sup>.**

<sup>1</sup> Programa de Pós-Graduação em Medicina Tropical, Instituto de Medicina Tropical, Universidade de São Paulo, E-mail: [kibajamila@hotmail.com](mailto:kibajamila@hotmail.com); <sup>2</sup> Laboratório de Evolução e Biogeografia, Universidade Federal da Bahia; <sup>3</sup> Departamento de Zoologia do Instituto de Biociências da Universidade de São Paulo; <sup>4</sup> Núcleo de Estudos em Malária, Superintendência de Controle de Endemias, Instituto de Medicina Tropical de São Paulo, Universidade de São Paulo.

Haemosporidian parasites are the etiologic agents of avian malaria, a widespread disease of wild and captive birds, transmitted by hematophagous diptera. Currently, 250 species are recognized within the genera *Haemoproteus*, *Leucocytozoon* and *Plasmodium*. Despite Brazil ranks the second country with bird diversity (1919 species), there are few studies describing the diversity, distribution and prevalence of haemosporidians across bird communities, especially for *Leucocytozoon*. Thus, this study aimed to contribute to the identification of haemosporidians in samples of birds from Atlantic Forest biome, totalizing 350 birds, belonging to 7 orders, 28 families and 102 species. Samples from three different states, Rio Grande do Sul (n = 188), São Paulo (n = 121) and Bahia (n = 41), were analyzed by nested PCR for the presence of *Plasmodium*, *Haemoproteus* and *Leucocytozoon*. We detected 12.3% positive samples in 22 host species: 7.7% *Plasmodium*, 2.9% *Haemoproteus*, 1.4% *Plasmodium/Haemoproteus*, and 0.3% *Leucocytozoon*. Sequences analyzed detected 23 genetic sequences: 14 lineages of *Plasmodium*, 8 of *Haemoproteus* and one of *Leucocytozoon*. The *Leucocytozoon* lineage (ELACHI01) is the first description of haemosporidians in *Elaenia albiceps chilensis*, in the Atlantic Forest, its wintering area. Chilean *Elaenia* is a migratory passerine of the family Tyrannidae, which travels between the southern region of South America, where it reproduces, to the northeast and central regions of Brazil, where it winter. ELACHI01 has 95% identity with *Leucocytozoon californicus* (the morphospecies closest to the lineage SETAUD30 described recently in Brazilian Amazon) being closer (97% identity) to *Leucocytozoon quynzae*. The two Brazilian lineages (from Atlantic Forest and Amazon) are genetically different, remaining in distinct clades in the phylogenetic tree. We suggest that different migratory routes may determine the distributions of lineages across South America, where the Amazon receives lineages from North and Central America and the Atlantic Forest has more influence of the austral migratory routes.

Keywords: Atlantic Forest, avian malaria, *Leucocytozoon*.

Financial support: Ministério da Ciência e Tecnologia, Ensino Superior e Técnico - Profissional de Moçambique.