

RESUMO - PROTOZOÁRIOS E AGENTES TRANSMITIDOS POR VETORES
DE IMPORTÂNCIA EM SAÚDE

**MOLECULAR CHARACTERIZATION OF TRYPANOSOMA SP. IN WILD
BIRDS IN DIFFERENT ALTITUDE GRADIENTS IN ITATIAIA NATIONAL
PARK, BRAZIL.**

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The rainforest is one of the largest centers of biodiversity and species endemism in the world. Relief is one of the elements responsible for producing so much diversity. Environmental conditions in the mountains are very different from those

in lowland areas because they have a greater temperature range, water restrictions and greater geographical isolation. As a result, species experience adaptations that reflect environmental variations and can disrupt biotic exchanges with neighboring plains. Brazil has the greatest biological diversity on the planet, with more than 1,919 species of birds recorded in various ecosystems, above all in the Atlantic Rainforest, highlighted as a focal point for avifaunal diversity. This area is home to around 891 species, 203 of which are endemic. Most of these birds belong to the order Passerines, many of which are threatened with extinction. Hematozoan parasites such as *Trypanosoma* sp. are transmitted by a series of dipteran vectors abundantly present in this environment. Most susceptible hosts suffer from selective pressure, resulting in deleterious effects on the health, reproductive success, behavior and structure of wild avifauna. This study was carried out in regions of the Atlantic Forest, located in the Itatiaia National Park (PNI). The aim of this study was to correlate the elevation gradient of Itatiaia National Park with the prevalence and diversity of *Trypanosoma* sp. in the blood of wild birds using blood smears and PCR screening to verify the predominance of this hemoparasite. Of the 230 slide smears observed under microscopy, the infectious evolutionary form of *Trypanosoma* was found in 17 and 42 samples were positive for PCR. Prevalence in the lower elevation gradient, below 1,000, was higher than in the higher elevation gradient, above 2,000, which suggests that temperature, environmental conditions and vector diversity are more abundant in lower elevation areas, favoring transmission of the hematozoan. Phylogenetic analyses revealed 17 new sequences very close to *Trypanosoma Polygranularis* found in *Peliperdix lathamii* in Cameroon, Africa. A single sequence clustered close to the *Trypanosoma everetti* clade, a branch close to the *Trypanosoma everetti*-like species found in the host *Dumetella carolinensis*, USA. Our study demonstrated the diversity and prevalence of trypanosome species in different altitudinal gradients in the PNI. It also pointed out that in Itatiaia National Park, the genetic diversity between *Trypanosoma* lineages in wild birds seems to be quite limited. Of the 18 sequences obtained during this study, an impressive 17 are closely related to *Trypanosoma polygranularis* according to their phylogenetic analysis. In addition, the *Trypanosoma* sp. strains identified in this

research exhibit a wide host range, as they were observed in no less than 12 different bird species.

Palavras-chave: trypanosoma; atlantic forest; wild birds; phylogenetic analysis.