MOLECULAR DETECTION OF *Plasmodium spp* INFECTION IN NON-HUMAN PRIMATES FROM THE SOUTH OF THE BRAZILIAN ATLANTIC FOREST

ALOMA ROBERTA COSTA SILVA[1], GABRIELA MAÍRA PEREIRA DE ASSIS[1], BEATRIZ BÖGER[2], TATIANA CARNEIRO DA ROCHA[2], FLORA SATIKO KANO[1], WALFRIDO KÜHL SVOBODA[2#], CRISTIANA FERREIRA ALVES DE BRITO[1]

[1]INSTITUTO RENÉ RACHOU – FIOCRUZ MINAS, BELO HORIZONTE/MINAS GERAIS, BRASIL; [2]UNIVERSIDADE FEDERAL DO PARANÁ, CURITIBA/PARANÁ, BRASIL; *[#]Current addresss: UNIVERSIDADE FEDERAL DA INTEGRAÇÃO LATINO-AMERICANA (UNILA), FOZ DO IGUAÇU/PARANÁ*

Malaria is a disease caused by protozoa of the genus *Plasmodium* and transmitted to the vertebrate host by female *Anopheles* mosquitoes during a blood meal. Although the endemicity of the disease is restricted to the Amazon region, autochthonous malaria cases also occur in the extra-Amazon region. Some of these cases are related to the Atlantic Forest regions, where malaria parasites primarily infect non-human primates (NHPs): *Plasmodium simium* and *P. brasilianum*. *Plasmodium simium* is confined to the Atlantic Forest regions of southern and southeastern Brazil, capable of infecting species from three of the five families of neotropical primates, while *P. brasilianum* has a broader distribution, from Mexico to southern Brazil, and can infect species from all five families of neotropical primates. Although originally infecting NHPs, both species are also capable of infecting humans. Given this zoonotic transmission scenario and knowing that Brazil harbors the greatest biodiversity of NHPs in the world, the role of these species as sources of *Plasmodium* infections for humans presents a significant challenge for malaria elimination. In this context, the study aimed to detect *Plasmodium* infection in samples from wild NHPs collected between 2004 and 2006 in a region on the border between Mato Grosso do Sul and Paraná. To achieve this, DNA extracted from 57 blood samples was subjected to conventional and real-time PCR diagnostics, with different targets: ribosomal (18S SSU rRNA), mitochondrial (*cox1*), and specific families of *P. vivax* and *P. falciparum* (*Pvr47, Pf364*). The results showed that 38.6% (n=22) of the samples were positive, with mitochondrial target-based diagnostics being more sensitive compared to ribosomal target-based diagnostics. These results emphasize the importance of advancing more sensitive diagnostic methods as an essential factor for detecting the parasite in NHP samples, as parasitemia in these animals tends to be lower than in humans.

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