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

DETECTION OF BABESIA SP. IN INSULAR BIRDS OF THE CAGARRAS ISLANDS ARCHIPELAGO NATURAL MONUMENT (MONA DAS ILHAS CAGARRAS), RIO DE JANEIRO – BRAZIL.

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The presence of insular birds on the coast of Rio de Janeiro is considered an ecological bioindicator. Nesting on islands and opportunistic feeding facilitate the transmission of ectoparasites, including ticks, and consequently, hemoparasites. The detection of hemoparasites is vital to understanding the One Health context, given the data gap on the prevalence and risk of arthropod-borne pathogens in the fluminense (Rio de Janeiro state) marine birdlife. The

objective of this study is to investigate the occurrence of piroplasmids in free-living insular birds in the state of Rio de Janeiro. Samples were collected under CEUA L-019/2021-A1 and SISBIO 73163-7 during the years 2023 to 2025, at the Cagarras Islands Archipelago Natural Monument (MONA), a Conservation Unit located in the municipality of Rio de Janeiro. Sampling focused on Cagarra and Redonda Islands, and the target species were Fregata magnificens and Sula leucogaster, due to their wide occurrence and for representing different life strategies that may influence the dynamics of parasitism. The field methodology involved capturing the birds and collecting biological material, such as blood and clots. DNA was extracted using the QIAamp® DNA Blond Mini Kit (QIAGEN), with its respective protocols and adaptations. Blood smears were prepared for diagnosis under optical microscopy. For the molecular detection of agents from the order Piroplasmida (Babesia spp.), a nested-PCR protocol was followed for the amplification of the ± 800 bp fragment of the 18S rRNA gene. The process was divided into two amplification steps, both with a final volume of 25 µL. The first reaction used the primers (BTF1 and BTR1) and followed a cycle with initial denaturation at 95ºC for 2 min and 30 s, followed by 30 cycles at 94ºC/ 30s, 58ºC/ 20 s (annealing), and 72ºC/ 30 s (extension), ending at 72º C for 5 min. For the second reaction, 1.0 µL of the first reaction product was used with primers (BTF2 and BTR2), with the annealing temperature adjusted to 62ºC. The positive control used was a previously sequenced Babesia bigemina sample, and the negative control was ultrapure water. The resulting PCR products were submitted to genomic sequencing for diagnostic confirmation. A total of 166 bird samples were collected on both islands. Of these, 14 individuals of Sula leucogaster were diagnosed under optical microscopy for Piroplasmids, and to date, four of these samples have been sequenced and the diagnosis of Babesia sp. has been confirmed. New techniques should be applied for species-level determination of the detected agents, in addition to advancing testing for other pathogenic agents that may be infecting these insular birds.

Palavras-chave: marine birdlife; piroplasmida; avian hemoparasitoses; insular region.