

Creole Dogs From Cape Verde - A Molecular Study Regarding Their Vector-Borne Pathogens

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Objectives: To date, limited data are available on vector-borne pathogens in dogs from São Vicente Island, Cape Verde. This study aimed to morphologically characterise such a population of stray dogs and their ectoparasites, and to molecularly identify vector-borne pathogens, at the species level.

Material and Methods: During a trap-neuter-return campaign (2024), blood samples (for clinical purposes) and ectoparasites were collected from 20 dogs, as well as their clinical history and photographic record. Ectoparasites were morphologically identified by microscopy using dichotomous taxonomic keys. DNA was extracted from blood and ectoparasites, followed by molecular screening for *Anaplasma/Ehrlichia* spp., *Bartonella* spp., *Borrelia* spp., and *Rickettsia* spp. by PCR, sequencing and phylogenetic analysis.

Results: Ectoparasites were detected in 80.0% of dogs. A total of 47 ectoparasites were collected, namely 38 hard ticks (*Rhipicephalus* spp.), five fleas (one *Echidnophaga gallinacea* and four *Ctenocephalides felis*), and four lice (*Heterodoxus spiniger*).

Molecular screening detected the presence of *Rickettsia* spp. in 26.3% ticks and 100% of fleas, *Anaplasma/Ehrlichia* spp. in 13.2% ticks, *Hepatozoon* spp. in 42.1% ticks and *Borrelia* spp. in 5.3% ticks. Additionally, *Anaplasma/Ehrlichia* spp. and *Hepatozoon* spp., were detected in the blood of 45.0% and 80.0% of the dogs, respectively.

So far, sequence data have allowed the identification of *Rickettsia asembonensis* and *Borrelia bavariensis*, both reported for the first time in Cape Verde. *Hepatozoon canis* was first reported for the São Vicente island.

Conclusions: This study provides new molecular data on ectoparasites and vector-borne pathogens in stray dogs from São Vicente island. Preliminary results indicate the presence of potentially zoonotic agents, such as *R. asembonensis* and *B. bavariensis*. These findings highlight the importance of continued surveillance and support the implementation of integrated One Health strategies to monitor and control emerging vector-borne pathogens.

Keywords: Vector-borne pathogens; stray dogs; São Vicente island; *Rickettsia*; *Borrelia*; zoonosis

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