Title: Phenotypic and genotypic studies of zoonotic Gram-negative bacteria isolated from introduced common marmosets (*Callithrix* sp.) and native golden lion tamarins (*Leontopithecus rosalia*)

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Abstract:

In the South and Southern regions from Brazil, primate species *Callithrix jacchus* and *C. penicillata* (also known as "*sagui*" or marmoset) are considered an alien species, being a real threat to *in situ* survival of native species *Leontophitecus rosalia* ("*mico-leão-dourado*" or golden lion tamarin). There are no information neither about bacteria carried by marmoset in the geographical area of *L. rosalia* occurrence, nor if these microorganisms could be potentially pathogenic to the native species. Investigation was carried out into the occurrence and antimicrobial profile of Gram-negative bacteria colonizing hybrids of marmosets and golden lion tamarins in Atlantic Forest areas of Rio de Janeiro state, Brazil. Samples were collected from the oral and rectal cavities of 50 marmosets and 101 golden tamarins A total of 33 Gram negative species belonging to 17 genera were isolated. Molecular analyses of *Escherichia coli* (*eae, bfpa*, *stx* genes) and *Klebsiella pneumoniae* (*bla*-CTXM*, bla*-SHV*, bla*-TEM ESBL-genes) showed virulence genes compatible with zoonotic risk to humans. One strain of *Campylobacter jejuni* from marmoset was identified by amplification of hipuricase gene by PCR. As analyzing the resistance to antibiotics by agar disk diffusion method, cefalotin and trimethropim/sulfametoxazol were the less efficient as showed, with low inhibition profile against *E. coli* (166 isolated and tested strains) and *K. pneumoniae* (21 isolated and tested strains), respectivelly. *C. jejuni* showed a miultirresistant profile against Nalidixic acid, Cefalotin, Cefoxitin, Ciprofloxacin, Ceftriaxone, and Sulfametoxazole-trimetoprim but was susceptible when tested toward Ampicillin, Erytromycin, Chloramphenicol, Imipenem, Tetracycline, and intermediary resistance toward Gentamicin. Results showed that Gram-negative bacterial species isolated from *Callithrix jacchus, C. penicillata* and *Leontophitecus rosalia* in the state of Rio de Janeiro can be potentially pathogenic both for native species of monkeys and for other animals sharing the same environment.

Keywords: Golden lion tamarin, marmoset, atlantic forest, zoonosis, environment.

Development agencies: CNPq, FAPERJ