



## Molecular genetic analysis of the yellow-breasted capuchin monkey: recommendations for *ex situ* conservation

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Genet. Mol. Res. 10 (3): 1471-1478 (2011)

Received October 20, 2010

Accepted December 15, 2010

Published July 25, 2011

DOI 10.4238/vol10-3gmr1115

**ABSTRACT.** The yellow-breasted capuchin monkey, *Cebus xanthosternos*, is one of the most endangered species of the Brazilian Atlantic Forest. *In situ* conservation for this species is problematic due to habitat destruction; therefore, captive conservation has been considered as an alternative strategy. A Studbook for *C. xanthosternos* has been kept for more than 20 years; however, no genetic data has been collected. Our aim was to provide a preliminary assessment of the genetic variability of *C. xanthosternos* in captivity in Brazil and compare it with data from the wild. Microsatellite and mtDNA sequencing were carried out in 40 samples from five Brazilian institutions registered in the international Studbook and compared with 8 samples collected in a wild population from REBIO-Una/BA. DNA for analysis was extracted from hair, feces and blood. Our results showed that two of the five captive groups assessed had a genetic variability comparable to wild animals. However, the other three groups apparently require urgent management to improve its genetic

variability. Considering that inbreeding effects are more pronounced in captivity due to lack of gene flow, our data indicate a need to increase population size by introducing newly rescued individuals into these captive groups. Our results are the first attempt to provide genetic information for captive *C. xanthosternos* in Brazil.

**Key words:** Brazilian Atlantic forest; *Cebus*; Genetic diversity; Management programs