

**Karyosystematic and karyotype evolution of *Panstrongylus lutzi* (Neiva & Pinto, 1923) (Hemiptera, Triatominae).**

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**ABSTRACT**

Based on homogeneity of the number of chromosomes ( $2n = 23$ ) (with exception of *Panstrongylus megistus*,  $2n = 21$ ) and sex determination system ( $X_1X_2Y$ ) of the genus *Panstrongylus*, was suggested that these triatomines were possibly originated from ancestors of North America. Thus, in order to assist in the chromosomal and evolutionary knowledge of the genus *Panstrongylus* and Triatominae subfamily, this study aimed to describe the karyotype of *P. lutzi* and compare with karyotypes already described for other species of the triatomines. *P. lutzi* presented a different karyotype of all species of the genus *Panstrongylus*,  $2n = 24$  ( $20A + X_1X_2X_3Y$ ). We suggest that during karyotype evolution of *P. lutzi* occurred agmatoploidy (fission) of X sex chromosome. In addition, this karyotype can be used as a taxonomic tool to differentiate this species from all species of genus *Panstrongylus* ( $2n = 23$ ), as well as allows distinguishing them from other 85 species of Triatominae subfamily that presents 21 (2 species), 22 (51 species), 23 (30 species) or 24 (1 species) chromosomes.

**KEY WORDS:** cytogenetics; karyotype; *Panstrongylus* genus, Chagas disease