

Morphometric and molecular study of wild populations and laboratory colonies of
Triatoma rubrovaria (Hemiptera: Reduviidae)

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The Triatominae subfamily includes 18 genera and 152 species, two of them are fossils. The species are divided into five tribes: Alberproseniini, Bolboderini, Cavernicolini, Rhodniini and Triatomiini, the latter tribe grouped into eight complexes and eight subcomplexes by morphologic, cytogenetic and molecular characteristics. *Triatoma rubrovaria* belongs to the Triatomiini tribe and to the *Triatoma infestans* complex, and can be found in the state of Rio Grande do Sul (Brazil), Uruguai and in some regions of Argentina. *Triatoma rubrovaria* displays rupestrian habits and it is found in holes and crevices of rocky locations, where granite or sandstone rocks predominate. This species feeds on the blood of mammals, therefore maintaining the sylvatic cycle of *Trypanosoma cruzi*. Eight male and female adults of six wild populations and five laboratory colonies were measured. From these specimens, six parameters of the head (TL – total length; ED – external distance between the eyes; ID – internal distance between the eyes; AO – anteocular; PO – postocular; AT – antenniferous tubercle), thorax and abdomen total length were measured. Means and standard deviation were calculated using non-parametric ANOVA (Kruskal and Wallis) in GraphPad Prism 5. The molecular study involved DNA extraction, PCR amplification and cytochrome B (CytB) and cytochrome oxidase I (COI) as molecular mitochondrial DNA (mtDNA) markers. In regard to the six measured parameters of males and females heads (TL, ED, ID, AO, PO, AT), the results obtained showed differences between laboratory colonies and wild populations, as to means and standard deviation. However, when performing Tukey analysis not all the parameters presented statistically significant differences. The differentiations in females were more apparent and demonstrated that the structures which contributed the most to the variability were TL, AO and AT. The results concerning the verification and determination of genetic distances and intraspecific differences in wild populations and laboratory colonies of *T. rubrovaria*, by Neighbor Joining Tree analysis using cytochrome b and cytochrome oxidase I as mitochondrial genes demonstrated that there were no significant genetic differences amongst these populations. Classic morphometry exhibited differentiation between wild and laboratory species, mainly when comparing males and females. Sexual dimorphism is fairly known in Triatominae, and females are bigger than males on average. The molecular approach by CytB and COI revealed that the five laboratory colonies and the six wild populations did not exhibit genotypic differences.

Keywords: *Triatoma rubrovaria*, morphometry, molecular study