

Study of the salivary glands in Triatominae (Hemiptera, Reduviidae, Triatominae): coloration and its applications to the Chagas disease vectors evolution.

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Abstract

Chagas disease is caused by *Trypanosoma cruzi* and transmitted by feces of triatomine insects that can defecate during the blood meal. The salivary glands of triatomines are important to hematophagy, because salivary glands are rich in anticoagulant and hemolytic proteins. The salivary glands of some *Rhodnius* species analyzed are reddish due to the presence of nitrophorins (anti-hemostatic activity). Thus the present study aimed to analyze the pattern of coloration of the salivary glands of 67 triatomine species and the bugs were dissected, the salivary glands were removed, and examined on a stereoscope microscope. In order to evaluate whether the presence of nitrophorins is a synapomorphy of *Rhodnius*, of the *Rhodniini* tribe or if it is shared with triatomines from the *Triatomini* and *Cavernicolini* tribes. Only the species of the tribe *Rhodniini* presented red glands. Thus, we highlight the presence of the nitrophorins proteins as a synapomorphy of the *Rhodniini* tribe and suggest that this tribe has derived more recently when compared with *Triatomini* and *Cavernicolini* tribes, contributing to the knowledge of the evolutionary history of this important vector group. Thus, we suggest that *Triatomini* tribe derived first, followed by *Cavernicolini* tribe and lastly the *Rhodniini* tribe, highlighting the need for studies using molecular clocks in *Triatominae* with representatives of all the tribes.

Key Words: taxonomy; tribe *Rhodniini*; tribe *Triatomini*; tribe *Cavernicolini*; nitrophorins