

Nucleolar Persistence during Meiosis of the Triatomines (Hemiptera, Triatominae) – An Editorial Review

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The triatomines are hematophagous insects of great importance to public health, since they are the main form of transmission of the protozoan *Trypanosoma cruzi*, etiologic agent of Chagas disease [1]. In addition to the epidemiological importance, these insects are important models for cellular studies because they present some peculiarities as holocentric chromosomes [2], meiosis inverted to the sex chromosomes [2] and persistence nucleolar during meiosis [3].

The nucleolar persistence phenomenon is characterized by the presence of the nucleolus or nucleolar corpuscles during all phases of meiosis [4], unlike other eukaryotes where the nucleolus is fragmented at the end of prophase and reorganized only in anaphase [5].

This phenomenon was initially described to *Panstrongylus megistus* and *P. herreri* [3]. Recently, nucleologenese of 23 triatomine species was analyzed and the nucleolar persistence was observed in all: *Triatoma infestans* [6], *T. klugi* [7], *T. lenti* [8], *T. melanocephala* [8], *T. i. melanosoma* [9], *T. platensis* [10], *T. protracta* [10], *T. tibiamaculata* [10], *T. vitticeps* [11], *T. vanda* [12], *T. williamsi* [12], *P. megistus* [6], *P. herreri* [6], *Rhodnius colobiensis* [4], *R. domesticus* [13], *R. montenegresis* [4], *R. nasutus* [4], *R. neglectus* [4], *R. neivai* [4], *R. pallescens* [6], *R. pictipes* [4], *R. prolixus* [4] and *R. robustus* [4].

Recently, we suggest that nucleolar material which persists during meiosis may exhibit transcriptional activity and to be associated with the formation of the body chromatoid [14] (cytoplasmic organelles indispensable for cell differentiation during spermiogenesis, since the nucleolus of the triatomines shows no transcriptional activity in this phase of spermatogenesis [15]).

Therefore, we emphasize the importance of nucleolar studies in Triatominae subfamily and we underscore the need for further studies with specimens of the other 15 genera of triatomines [16] to corroborate if the phenomenon of nucleolar persistence is a synapomorphy of Triatominae. Furthermore, we highlight the need for further studies to assess whether the material that persists is really active during meiosis.

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Received July 25, 2015; Accepted July 26, 2015; Published July 28, 2015

Citation: Alevi KCC, Azeredo-Oliveira MTV (2015) Nucleolar Persistence during Meiosis of the Triatomines (Hemiptera, Triatominae) – An Editorial Review. Entomol Ornithol Herpetol 4: e113. doi:10.4172/2161-0983.1000e113

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