

Cytogenetic evidence for *de novo* synthesis of rRNA and involvement of nucleolar material in the organization of cell structures during spermiogenesis of *Chariesterus armatus* (Heteroptera, Coreidae)

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ABSTRACT. The nucleolar material of *Chariesterus armatus* was analyzed during spermiogenesis in cell preparations impregnated with silver nitrate. Nucleolar corpuscles were observed in spermatids at the beginning of the process, showing that this organoid is also maintained after meiosis. In addition, nucleoli were seen in the round spermatids connected to the X-chromosome (bearer of the nucleolar organizer in *C. armatus*), indicating *de novo* synthesis of nucleolar material. This differs from the reorganization of ribosomal granules, transported from meiotic spermatocytes to round spermatids, where they would support protein synthesis, which is reported for other species. We also observed connections of nucleolar corpuscles to the nuclear membrane regions where the tail and the acrosome will be formed, suggesting

close involvement of the nucleolar material in the formation of these structures. In addition to the nucleolar bodies, we detected silver-positive structures, which will require new approaches to clarify their role. One of these structures, observed in the cytoplasm, appears to correspond to the chromatoid body, which has been found in several organisms, but is still poorly understood; another is a complex structure to which the tail appears to be connected. We conclude that *C. armatus* is an appropriate model for understanding not only the synthesis of rRNA in the spermiogenesis, but also the functional meaning of the close relationship of nucleolar material with other structures during this process.

Key words: Spermiogenesis; Silver impregnation; Chromatoid body; Nucleolar synthesis in spermatid; Nucleolus-acrosome; Nucleolus-tail relations