

Imunochemistry and Ultrastructure of Ovary and Eggs from the Hard Tick *Rhipicephalus (Boophilus) microplus*

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Rhipicephalus (Boophilus) microplus tick is an ectoparasite responsible for economy losses on tropical and subtropical regions. Our group has been studying the development of this tick through morphological, ultrastructural and biochemical approaches. We previously demonstrated a relation between the different levels of glycogen during embryogenesis and Glycogen Synthase Kinase-3 β (GSK-3) activity, recognized as a key component of a large number of cellular processes, including regulation of many transcription factors and the expression of many genes. Ovary morphology was analyzed by optical microscopy to better understand the oogenesis dynamics. Oocytes and eggs permeability were observed by fluorescence and scanning electron microscopy. Relation between synthesis of yolk granules and localization of acid compartments during oogenesis, and GSK-3 immunolocalization were detected by fluorescence microscopy. Analysis of egg superficial morphology was done to determine permeabilization protocols efficiencies. In this work we detected GSK-3 in isolated nuclear fractions from egg homogenates of *R. microplus* by western-blot analysis, using anti-GSK-3 β antibodies. Enzyme activity was also detected radiochemically throughout embryogenesis on the same fractions. The GSK-3 activity was inhibited by using SB 216763, a GSK-3 specific inhibitor. Taken together our results suggest that there are, at least, 6 types of oocytes during oogenesis in *R. microplus* ovaries. Yolk granules quantity could be used to classify which type are the oocytes. GSK-3 is present in nuclear fractions and it is probably involved on transcription factors, regulation which determine *R. microplus* embryonic development and acts on egg formation.

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