ENERGETIC METABOLISM DURING *RHIPICEPHALUS (BOOPHILUS) MICROPLUS* EMBRYOGENESIS AND 3 D STRUCTURE RESOLUTION OF TRIOSEPHOSPHATE ISOMERASE FROM *R. B. MICROPLUS* EMBRYOS

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The hard tick *Rhipicephalus (Boophilus) microplus* is the major ectoparasite that causes vast economical losses in cattle raising round the world. The organism transmits some pathogens to humans and other animals. In this work we showed that the embryogenesis of this parasite was metabolically separated in two phases: an initial phase, until the formation of the cellular blastoderm, characterized by the consumption of the maternal glycogen and a second phase characterized by intense amino acids degradation that promotes an accumulate of glycogen and glucose in this stage. The PEPCK, AAT and GDH activities were measured and it showed an increasing during tick embryogenesis. In addition we investigated lpid metabolism, which demonstrated a high consumption of total lipids on transition of initial to secondary phase of embryogenesis. The neutral and polar lipids of embryo tick were determined and lipase activity increased from fifth to twentieth day. Triosephosphate isomerase (TIM) is a glycolytic enzyme that catalyzes the glyceraldehyde 3-phosphate and dihydroxyacetone phosphate interconversion is also important for its potential in drug design. We have now determined 3D structure of TIM from *R. B. microplus* embryos (BmTIM) whith high resolution (2.0 Å) showing that this enzyme is a homodimer with monomers formed by eight central ß strands that are surrounded by eight a-helices; the strands and helices are connected by loops. As expected, the overall structure of BmTIM is similar to other known TIM structure. Although, the analyze of structure resolution reveals that cysteines do not form disulfide bonds.

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