PHOSPHOENOLPYRUVATE CARBOXYKINASE IN BOVINE TICK *RHIPICEPHALUS* (*BOOPHILUS) MICROPLUS* EMBRYONESIS AND STARVATION LARVAE

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Phosphoenolpyruvate carboxykinase (PEPCK) is considered a key rate controlling enzyme in gluconeogenesis pathway. Gluconeogenesis is a highly regulated process, catalyzed by several enzymes subject to regulation by insulin. Normally, insulin rapidly and substantially inhibits PEPCK gene transcription and the PEPCK activity is proportional to the rate of gene transcription. The transcriptional regulation of the PEPCK gene has been extensively studied. CREM is the transcription factor that bind efficiently to the putative cyclic AMP response element (CRE) in PEPCK gene. Several other transcription factors can bind to this element and activate transcription. In oviparous animals, such as bovine tick *R. microplus*, the embryonic development occurs outside the maternal organism, implying that all the nutrients necessary for embryogenesis must be present in the oocytes. We observed the relationship between the main energy sources and the morphogenetic changes that occur during *R. microplus* tick embryogenesis. Energy homeostasis is maintained by glycogen mobilization in the beginning of embryogenesis, as its content is drastically decreased during the first five days of development. Afterwards, the activity of the gluconeogenesis enzyme PEPCK increases enormously, as indicated by a concomitant increase in glucose content (Moraes *et al*., 2007). Here, we analyzed PEPCK gene transcription by qPCR during the embryogenesis and starvation larvae. The PEPCK transcription was higher at 1º and 15º day eggs of the development. In larvae the levels of PEPCK transcripts is increased at 5º day after hatch. However, the activity is continuous increased in larvae the form 1º up to 15º day. Now we are investigating the involvement of CREM in the PEPCK gene transcription in these cells. In this sense, we obtained CREM sequence from TIGR ESTs *R. microplus* bank and designed the specific primers to qPCR. Taken together our results suggest the involvement of PEPCK to the gluconeogenesis control during *R. microplus* embryo development.

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