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In this work, glucose metabolism was preliminarily investigated throughout *Aedes aegypti* mosquito embryo development. Catalytic activitiy of key enzymes from glucolysis and pentose phosphate pathway during this period of development suggest that, both formation of cellular blastoderm and the retraction of germ band, significant events during embryogenesis of mosquito, are closely related with glucose 6-phosphate (G6P) metabolism. Contents of glucose and glycogen were measured and revealed significant variation during embryogenesis. Glycogen synthase kinase-3 (GSK3) is an enzyme that plays important roles in carbohydrate metabolism and in gene expression regulation. One of such targets is PEPCK (the regulatory enzyme of gluconeogenesis). The evaluation of PEPCK activity demonstrates great variations during embryo development but was not associated with carbohydrate contents. GSK3 activity was monitored and appears to be inversely correlated with glycogen distribution during the same period. These results suggest a control on homeostasis of glucose by the GSK3 in this process. Additionally, a 600-bp fragment was cloned from *A. aegypti* eggs and its sequence demonstrated high similarity (>80%) with other GSK-3`s previously described. Further investigations about GSK3 in mosquito eggs are on the way. Specific primers were designed to evaluate GSK3 transcription during embryogenesis and oogenesis processes. To identify the function of GSK3 in these embryos we plan to study the effects of RNA interference (iRNA). Taken together these data may help to improve the knowledge about glycogen metabolism regulation in this system.

Supported by: **INCT, CNPq, FAPERJ, PROCAD/CAPES**