Glucose metabolism evaluation and morphological analysis under *wolbachia* influence during *Aedes fluviatilis* embryogenesis

**INTRODUCTION.** *Aedes fluviatilis* has been reported as an excellent model for vectorial capacity studies related to some infectious agents, particularly in countries where species such as *A. aegypti* present risks in disease transmission. Thus, only a little data has known about the embryogenesis and also on its relationship with its endosymbiont *Wolbachia* natural pipients. *Wolbachia* infection, which is widespread in *A. fluviatilis* in nature can affect broad aspects of insect physiology, particularly traits associated with reproduction. In this context the possible correlation between glucose metabolism and morphological changes during *A. fluviatilis* embryo development was investigated in this work. *Wolbachia* carried (W+) and non carrier (W-) mosquitos’ strains were compared as well. **MATERIALS/METHODS:** *A. fluviatilis* eggs were obtained in a synchronized and kept at 28°C with relative humidity ranging between 55-60°C, was performed regulating enzyme activities and quantification of the glycolytic pathway metabolites such as glucose, glycogen and glucose-6 phosphate. The enzyme GSK-3 has been cloned into vector P-GEM t-easy and sequenced, based on the obtained sequence was designed primers for the transcription of this enzyme observed during embryogenesis and to establish silencing thereof. **RESULTS/DISCUSSION:** Egg hatching took place at 48hs after oviposition (HAO) for W+ embryos. The hexokinase activity has its maximum at the beginning of embryogenesis, as pyruvate kinase is more active at the end of embryogenesis. Glucose-6-phosphate follows a concentration profile according to the activity of hexokinase. It was also observed that the concentrations of glucose and glycogen eggs oscillate during embryonic showing a peak at 24 hours of development. Given our results we hypothesized that the symbiotic relationship between *A. fluviatilis*/*Wolbachia* can being modulated by glycogen metabolism. Within this hypothesis the next steps aim of this study symbiosis, through biochemical and molecular silencing of the enzyme GSK-3. **CONCLUSION:** The study of metabolic pathways associated with embryogenesis have been reported in order to advance the understanding of the interaction host/symbiont and also in the development of methods to control some species of *Aedes* transmitters diseases.

Keywords: *A. fluviatilis*, *wolbachia*, metabolism
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