

Effect of Glycogen Synthase Gene Silencing in *Aedes fluviatilis* Embryogenesis Under *Wolbachia* Influence

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INTRODUCTION: Among the strategies for insect/mosquito control is the study of its life cycle. Although a considerable number of studies involving the vectorial capacity of *Aedes fluviatilis* for some diseases, little is known about the embryogenesis of this mosquito. It has been shown that the symbiotic bacterium *Wolbachia* is an excellent tool to control diseases spread for arthropod vectors, like *Aedes aegypti*. It is an intracellular bacteria with potential to act as a dengue biological control agent. *Wolbachia* is a natural endosymbiont of *Aedes fluviatilis*, which effects on embryogenesis and reproduction has not been addressed so far. This bacteria is maternally-transmitted in arthropods and may affect diverse aspects of insect physiology, particularly their reproduction. Understanding of host-symbiont interactions some studies have contemplated the understanding of metabolic pathways. Our group has been investigating the correlation among *Wolbachia*, the glycogen metabolism and morphological alterations, during *Aedes fluviatilis* embryogenesis. This via can be a good strategy to control these arthropods. **OBJECTIVES:** Investigating glycogen synthase in *Aedes fluviatilis* metabolism during its embryogenesis under *Wolbachia* influence. **MATERIAL/METHODS:** In synchronized *Aedes fluviatilis* eggs (28°C with relative humidity ranging between 55-60%), the glycogen synthase will be silenced, via RNAi, and its function will be determined during embryogenesis, in *Aedes fluviatilis* with and without *Wolbachia*. **RESULTS/DISCUSSION:** We expect to find lower levels of glycogen due to enzyme silencing. Yet it will be possible to compare the glycogen levels in mosquitoes with and without *Wolbachia* observing effects of symbiotic interaction of the bacteria with the mosquito or if glycogen is required for parasite-host interaction. **CONCLUSION:** After the effects of gene silencing in *Aedes fluviatilis* is observed we hope to have a better understanding of the influence of *Wolbachia* in glycogen metabolism during embryogenesis of its natural host. It may contribute to further studies on behavior to this dipterous control.

Keywords: *Aedes fluviatilis*, glycogen, metabolism, *Wolbachia*.

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