

Mapping ionotropic receptor expression in *Aedes aegypti* olfactory tissue

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Abstract Details

Host olfactory cues are sufficient to attract a mosquito. Understanding the cellular and molecular basis of mosquito olfaction could lead to new targets for mosquito behavioral control. The antennae and maxillary palp allow mosquitoes to sense odors in their environment. These organs are covered in sensilla each containing two or more olfactory sensory neurons (OSNs). Insect OSNs express odor-gated ion channels consisting of an odor-selective receptor and a co-receptor. Olfactory receptor expression has not been comprehensively mapped in any mosquito species. In this study, we are constructing an expression map of the ionotropic receptor family (IRs) using whole mount RNA in situ hybridization. This map will allow us to connect which odor-selective IRs are co-expressed with the two IR co-receptors, IR8a and IR25a. In addition, our studies are a first step in mapping the neural circuit that connects olfactory sensation with mosquito behavior.

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