

LOOKING INTO MOSQUITO'S NOSE WITH AN EYE ON WEST NILE VIRUS SURVEILLANCE

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Development of novel attractants for trapping gravid female mosquitoes is essential for West Nile Virus surveillance. Female mosquitoes undoubtedly use airborne chemical signals (semiochemicals) integrated with other sensory modalities to find and determine the suitability of hosts for a blood feeding, sites for oviposition, etc. Reception of these semiochemicals by specialized structures in the periphery, such as antennae and maxillary palps is mediated by three major classes of olfactory proteins: odorant-binding proteins (OBPs), odorant receptors (ORs), and odorant-degrading enzymes (PDEs). While selectivity is achieved by molecular interactions of OBPs and ORs with semiochemicals, ODEs are essential for signal termination. We are prospecting for novel mosquito oviposition attractants by screenings compounds with affinity to mosquito OBPs. In this presentation, I will highlight how we employed this “reverse chemical ecology” approach in combination with conventional chemical ecology techniques (GC-EAD, single sensillum recording, etc) to develop better formulation for trapping gravid female *Culex* mosquitoes.

Keywords: insect olfaction, odorant binding, mosquito attractants

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