

INNATE IMMUNITY IN *LUTZOMYIA LONGIPALPIS*: PUTATIVE GENES AND IDENTIFICATION OF A NONSPECIFIC ANTIVIRAL RESPONSE

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One prospective to control arthropod-born diseases relies on the possibility of controlling the vector or interfering with parasite-insect interaction, for which an understanding of the vector's immune system is critical. *Lutzomyia longipalpis* is the major vector for visceral leishmaniasis in Brazil. In the present study we present the expression profiles of some immune/development related genes in stages of development and also from *Leishmania*-infected insects. We found one defensin gene expressed only after the 4th larval stage, with increased expression in adults. MAP-K and V-ATPase genes have low expression levels in final stages of development and high levels in adults. Cactus and TGF-beta, with dual roles in development and immunity, have constant expression levels. RNAi has recently arisen as a convenient way of performing functional studies in insects. To establish RNAi assays in *L. longipalpis*, we have transfected cultured cells with double stranded RNAs (dsRNA), using West Nile virus-virus like particles (VLPs) expressing luciferase as model. Luciferase dsRNA caused a lowered production of VLPs as expected. Surprisingly, we found that various unrelated dsRNAs, that included *L. longipalpis* gene sequences, but also the *E. coli* β -galactosidase sequence, diminished the production of VLPs. A similar response was seen in shrimp, but this is the first report on non-specific anti-viral response triggered by ds-RNA in an insect cell line.