

Down regulation of Immune-Related Genes by Apolipophorin-III ds RNA Knockdown in *Hyphantria cunea*

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Apolipophorin-III (apoLp-III) is an abundant apolipoprotein found in the hemolymph of Lepidoptera and Orthopteran insects. ApoLp-III plays a key role in lipid transport of insects that rely heavily on lipids to fuel their flight activity. Recently, the protein apoLp-III has been identified as an immune-stimulating molecule. Previous analysis have shown that the injection of apoLp-III into the hemocoel of larvae induced the expression of antibacterial in *Hyphantria cunea*. (Kim *et al.*, 2004, IBMB) The protein is believed to cause hemagglutination and to act synergistically with insect hemolymph lysozyme.

RNA interference (RNAi) has become a powerful tool to determine gene function. We have compared the transcriptional activity of apoLp-III in the hemocyte, midgut, fat body after injection of apoLp-III ds RNA into larvae by means of RT-PCR. Many transcripts preferentially expressed or repressed in three organs have been selected by differential display PCR (DD-PCR). Among many transcripts that have been identified, we have selected and further characterized the immune-related transcripts.