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614-P: Tissue-specific transcriptional responses related to the horizontal and vertical transmission of a bacterial pathogen by its insect vector

Monday, August 7, 2017
04:00 PM - 05:00 PM
Henry B. Gonzalez Convention Center - Exhibit Hall 1

Bactericera cockerelli is the insect vector of the fastidious bacterium "*Candidatus* Liberibacter solanacearum" (Lso). This bacterial pathogen causes zebra chip disease of potato. Lso is transmitted in a persistent propagative manner by *B. cockerelli* where it infects and multiplies in the digestive track, reproductive organs, and salivary glands of its insect vector. Lso infection of the reproductive organs of *B. cockerelli* leads to transovarial transmission of the pathogen to the insect offspring. It has been previously shown that Lso has a detrimental effect on the fecundity and nymphal survival rate of *B. cockerelli*. To better understand the molecular bases of these biological consequences in the insect vector due to the bacterial infection, we have conducted a tissue-specific transcriptome analysis of *B. cockerelli* organs involved in the horizontal and vertical transmission of Lso. Total RNA was extracted from pools of dissected salivary glands and ovaries from non-infected and infected insects using three independent biological replicates. Libraries were prepared and sequenced using poly-A enriched RNA coupled with Illumina Hi-Seq technology. Bioinformatics analyses were conducted to identify the transcriptional changes in these insect tissues in response to the bacterial infection. Identification of a suite of candidate genes from *B. cockerelli* is allowing us to better understand this vector-bacteria interaction that has detrimental effects on the insect host.

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