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D3728: Peritrophic membrane genes from *Diabrotica virgifera virgifera* and their potential application as target in pest management in future

Thursday, September 29, 2016

09:00 AM - 05:00 PM

📍 *Convention Center - West Hall C*

The western corn rootworm *Diabrotica virgifera virgifera* LeConte is a major insect pest on maize in the U.S. Corn Belt and control failures have been documented to many control strategies, including chemicals, transgenics and crop rotation, and it is urgent to develop new insecticides. The peritrophic matrix (PM) is composed of proteins and chitin and protects the epithelium against abrasive particles and microbial infections. RNAi is a valuable research tool to study the function of genes and to develop effective pest management tools. In this study, we identified four PM and two chitin synthase genes in *D. virgifera virgifera* and measured their baseline expression separately by qPCR in both *D. virgifera virgifera* larval and adult stages. Further analysis showed that the knock-down of one of chitin synthase (CS14) genes could cause strong growth inhibition in larvae as compared to the other PM genes. In addition, the CS14 dsRNA-pretreated adults showed a limited change in insecticide susceptibility and knockdown of CS14 also affected the knockdown of RNAi of other genes.

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