



Texas Imported Fire Ant Research and Management Project

Final Progress Report - October 2001

Receptors and Transporters from the Red Imported Fire Ant as Novel Targets for Rational Design of New Control Compounds

Principal Investigator(s):

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Funding amount/ 2 Years: \$80,000

Major accomplishments to date (January 30 - June 30):

Cloning of the troponin C protein, which is a protein critical for insect muscle contraction. The sequence was submitted to GenBank.

Goals achieved:

We were not able to clone the G protein-coupled receptors as anticipated but have obtained a very interesting probe for a putative glucose transporter. This is a gene that we will continue to work on since only transporters from *Drosophila* are known from insects.

Relevance to the Texas Imported Fire Ant Research Ant Management Project:

Our laboratory provides cDNA sequences of various proteins from the fire ant. We cloned the first full sequence of two constitutive proteins from the fire ant with the exception of the previously reported venoms. We also cloned several PCR products corresponding to open reading frames for other proteins. Our laboratory provides tools for the genetic analysis of the fire ant genome.

Publications submitted/published; presentations/posters presented at national technical meetings/conferences:

GenBank submission: AF432912 *Solenopsis invicta* troponin C mRNA, complete cds. To be released on January 01, 2002.

Conference presentation:

Pietrantonio, P. V. 2001. Cloning of the V-ATPase subunit c and other gene fragments from the Red Imported Fire Ant, *Solenopsis invicta* Buren. Annual Imported Fire Ant Research Conference. San Antonio, Texas, February 28-March 2, 2001. Oral presentation and Abstract in Proceedings of the Annual Imported Fire Ant Research Conference. *In press*.

Peer-reviewed publication:

Pietrantonio, P. V., S. P. Holmes, C. Jagge and S. K. Frazier. 2001. Cloning of troponin C and other gene fragments from the red imported fire ant *Solenopsis invicta* Buren (Hymenoptera, Formicidae). To: *Southwestern Entomologist* Supplement on the Red Imported Fire Ant. *In press*.