

# **Application of Proteomic Techniques for the Characterization of Peptides from the Endocrine System of *Rhodnius Prolixus*, Chagas Disease Vector, as a First Step in the Development of New Control Strategies**

**Sheila Ons, Rolando Rivera Pomar**

Laboratorio de Genética y Genómica Funcional.  
Centro Regional de Estudios Genómicos.  
Buenos Aires, Argentina.

## **Introduction and Objectives:**

Difficulties in the control of Chagas Disease are mainly owned to the high level of insecticide resistance developed by the vector, as much as to the deteriorated socioeconomic conditions in the affected countries. Resistance developed to conventional insecticides made necessary the creation of new generation insecticides, environmentally safe and more efficient. Identification and characterization of insect neuropeptides as possible target of insecticides, constitutes an important step in the development of a new and better strategy of plague control. Proteomic techniques can be employed to reach that objective. Proteomic analysis allows comparison in modifications of protein expression under different physiological condition, a fact that constitutes a useful tool in the rational drug development.

**Results and Conclusions:** Here is proposed the employment of proteomic techniques to reach a complete description of neuropeptidic complement in *Rhodnius prolixus*, and as a second step, the characterization of changes in peptidic profiles observed under different physiological conditions of the insect. The information to be obtained in this project will allow the posterior validation of some neuropeptidic molecules as possible targets of new insecticides. Preliminary mass spectrometric analysis of *R. prolixus* hemolymph under different physiological conditions is presented.

**Key Words:** *R. Prolixus*; Neuropeptides; Proteomics.