Identification and evaluation of biological conservation of different toxins from brown spider venom (*Loxosceles* genus) in three species of greater impact on Paraná: *L. intermedia*, *L. laeta* and *L. gaucho*


1Department of Cell Biology, UFPR, PR, Brazil; 2Department of Structural, Molecular Biology and Genetics, UEPG, PR, Brazil

The brown spider (*Loxosceles* genus) is often involved in envenoming accidents with humans. The venom is a complex protein mixture, and contains mainly enzymes, such as phospholipases-D and metalloproteases. This study aims to identify the presence of conserved immunological epitopes in the toxins from different *Loxosceles* venoms. The three species of *Loxosceles* genus which are the most related with envenomation accidents in the state of Parana were studied: *L. intermedia*, *L. laeta* and *L. gaucho*. Therefore, cross-immunoreactivity assays were performed using recombinant toxins from *L. intermedia* venom gland and specific polyclonal antibodies obtained from rabbits immunized using whole venom of each species. The immunotechniques used were Enzyme-linked Immunosorbent Assay (ELISA), to assess the presence of conserved conformational epitopes, and Western Blotting (WB), to assess the presence of conserved linear epitopes. We evaluated the biological conservation of five recombinant isoforms of phospholipase-D and one recombinant astacin-like metalloprotease, toxins characterized in the venom of *L. intermedia*. All the toxins studied were recognized by polyclonal antibodies raised against whole venom of *L. laeta* and *L. gaucho* in ELISA and WB methods. These results point to the presence of both linear and conformational epitopes, which are conserved among phospholipases-D and astacin-like metalloproteases found in the venoms of the three species studied, *L. laeta*, *L. gaucho* and *L. intermedia*. The immunological relationship of toxins from these venoms of *Loxosceles* genus enables the use of specific antibodies as biotools, and also supports data indicating differences in toxicity during the envenoming by different brown spiders.

Word Keys: *Loxosceles* sp, biological conservation, toxins, antibodies

Supported by: CNPq ,CAPES, Fundação Araucária and SETI-PR.