Identification of New Isoforms of Astacin-like Metalloprotease Toxin in Brown Spider Venoms
(Loxosceles genus)

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Brown spider (Loxosceles genus) bites generate dermonecrotic lesions with gravitational spreading and/or systemic manifestations. The venom is a complex mixture of toxins, enriched of peptides and proteins (5-40 kDa) with multiple and distinct biological activities. Metalloproteases have been described in venom of many different species of Loxosceles. The characterization of an astacin-like protease in Loxosceles intermedia venom (LALP1) was the first report of an astacin family member as a component of animal venoms. Recently, the astacin-like proteases were described as a gene family present in the venom of L. intermedia, L. laeta and L. gaucho. Herein, the crude venom complexity of these three Loxosceles species was analyzed by 2-DE, demonstrating the diversity of their profiles. Their subproteomes of astacin-like proteases were explored by 2-DE immunostaining revealed by anti-LALP1 antibodies and 2-DE gelatin zymography. The analysed subproteomes demonstrate the existence of new biologically active astacin-like protease isoforms in the venom of these three species of Loxosceles.

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