

BIOLOGICAL AND STRUCTURAL COMPARATIVE STUDY AMONG
RECOMBINANT PHOSPHOLIPASE D TOXINS FROM *Loxosceles intermedia*
(BROWN SPIDER) VENOM.

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Loxoscelism represents envenomation involving spiders of *Loxosceles* genus (brown spider). Bite triggers necrotic skin lesions, which can be accompanied by systemic disturbances including hematological disorders and renal failure. By using three recombinant dermonecrotic toxins LiRecDT1, LiRecDT2 and LiRecDT3, we reported biological, immunological and structural differences for these members of this toxin family. MDCK cells exposed to LiRecDT1 and LiRecDT2 changed their viability and cell morphology, whereas LiRecDT3 caused not significant activity. Differential cytotoxicity was strengthened by hemolytic assays, showing activity for LiRecDT1 and LiRecDT2, but no hemolysis for LiRecDT3. Biological differences were corroborated through mice lethality experiments, causing animal mortality after LiRecDT1 and LiRecDT2 injection, but absence of lethality followed LiRecDT3 exposure. LiRecDT1 and LiRecDT2 caused foot pad and intraperitoneal edema, but not for LiRecDT3. Crude venom and LiRecDT1 antisera against LiRecDT1, LiRecDT2 and LiRecDT3 showed higher cross-reactivity for LiRecDT1 and LiRecDT2 (structurally and antigenic conserved) compared to LiRecDT3. Folding and structural differences among recombinant toxins were strengthened through circular dichroism pointed very close similarity for secondary structures of LiRecDT1 and LiRecDT2 but differences for LiRecDT3. These results reported experimental evidence for biological and structural differences among toxins of phospholipases (dermonecrotic toxins) family found in the venom of brown spiders.