Isolation and Preliminary Enzymatic Characterization of an Isoforms Asp49 Phospholipase A_2 from *Bothrops moojeni* Venom

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Snake venoms are formed by a complex mixture of active substances, mainly proteins, often responsible for the observed pharmacological and toxicological symptoms that follow the envenomation by snakebite. Among these proteins, enzymes like phospholipase A_2 with and without catalytic activity are responsible for several biological effects, including neurotoxicity, edema formation, anticoagulant and myotoxic activities as well as different (pro- and antiaggregating) effects on blood platelets.

The objective of this work was to purify and characterize enzymatictly a PLA_2 isoform with catalytic activity hasn't been studied from *Bothrops moojeni* venom. PLA_2 was isolated from *B. moojeni* venom by a combination of molecular exclusion Superdex G75 column and Reverse phase–HPLC on C-18 column. SDS-PAGE in the presence or absence of DTT showed that PLA_2 (BmTX-I) had a molecular mass of approximately 15 kDa. Amino acid analysis revealed a high content of basic and hydrophobic amino acids (Lys, Gly, and Tyr). BmTX-I showed alosteric behavior; with maximal activity at pH 8.0 and 35- 45 ºC. Full PLA_2 activity required Ca^{2+} but was inhibited by Cd^{2+}, Mn^{2+} and Mg^{2+}. Crotapotin (Crtp-II cum) from *Crotalus durissus cumanensis* rattlesnake venom significantly inhibited the enzymatic activity of BmTX-I.

The novel isoform Asp49 PLA_2 from *B. moojeni* venom was purified and it presented similar enzymatic properties to other PLA_2 isolated from snake venoms.

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