

Isolation Of A New Scorpion Toxin From *Tityus serrulatus* Venom

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Tityus serrulatus venom (Tsv) is a rich source of neurotoxic proteins, interacting specifically with ionic channels in excitable membranes. Many Tsv constituent have been described, however, the venom displays in addition, several compounds showing important pharmacological actions. The aim of the present study was the isolation and partial characterization of potassium channels selective compounds present in fraction XII-A from Tsv. The crude venom was fractionated by ion exchange chromatography, furnishing 13 main fractions. Fraction XII-A was submitted to a RP-HPLC and the isolated protein was named XII-A-2. PAGE showed that XII-A 2 is a basic protein and confirmed its homogeneity. The N-terminal amino acid sequence was obtained by automated Edman degradation. Partial N-terminal sequence (15 amino acid residues) showed that XII-A-2 is different from the previously deposited sequences listed under NCBI, but it is homologous to TsKappa (85% of identity among residues 5 to 11), a very high potent ligand for small-conductance potassium channels. In conclusion, XII-A 2 is a new basic scorpion toxin, probably selective for K⁺ channels. Scorpion toxins selective for K⁺ channels are excellent tools for investigating the physiological contribution of ion channels to cell and organ behavior and for probing and correlating ion channel structure and function.

Key words: scorpion venom, *Tityus serrulatus*, neurotoxins, ion channels, protein sequence.

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