

Métodos em Toxinologia: Toxinas de serpentes (ISBN: 978-85-7600-090-7)
[Methods in Toxinology: Snake Toxins]

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“Métodos em Toxinologia: Toxinas de serpentes” [Methods in Toxinology: Snake Toxins] is a book written in Portuguese and directed to researchers in general but mainly to undergraduate and graduate students interested in knowing different animal toxins and their effects on living organisms. It is a compilation of the main methods validated and frequently used in Toxinology laboratories such as purification as well as chemical and biological characterization of toxins, including the general aspects involved in the cloning and expression of recombinant toxins. The book also deals with some very interesting aspects of structural studies on toxins using bioinformatics tools. Many examples involving different animal toxins are shown based on scientific papers published in well-known journals of the field, including a great reference list on the subject.

The work is divided into four parts: 1) **Purificação e caracterização de toxinas [Purification and characterization of toxins]**, which describes the most used chromatographic methods for isolating protein toxins, purity criteria, and chemical characterization, including amino-terminal sequencing; 2) **Caracterização biológica [Biological characterization]**, including the following topics: assays for assessing proteolytic, phospholipase, L-amino-acid-oxidase, hemorrhagic and myotoxic activities, interference in clotting, fibrinolysis and platelet aggregation mechanisms, and tests for determining the effects of toxins on cell adhesion and proliferation processes; 3) **Clonagem e expressão de toxinas recombinantes [Cloning and expression of recombinant toxins]**, including primer design, conventional and quantitative PCR techniques, cloning as well as production and purification of recombinant proteins, and refolding techniques *in vitro*; 4) **Estudos estruturais [Structural studies]**, with an extensive description of the bioinformatics tools most used in the structural analysis of protein toxins, methods for obtaining high-quality protein crystals for the resolution of their three-dimensional structure by X-ray diffraction, and, finally, a very friendly guide for *in silico* modeling based on homology.

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