

Antimicrobial Activity of a Toxin Isolated from *Bothrops alternatus* snake venom

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INTRODUCTION: Antibiotic resistance is a severe public health problem and it has led to intensification of search for new drugs. Natural products are important sources of medicinal compounds. Snake venoms contain a great variety of biologically active proteins responsible for various pathological effects. **OBJECTIVES:** In this work, we investigated the action of a toxin isolated from *B. alternatus* snake venom (BaltBC) against bacteria gram-positive and gram-negative. **MATERIAL AND METHODS:** The fractionation of *B. alternatus* venom (300 mg) was carried out through two chromatographic steps (DEAE Sephacel followed by Sephadex G-75). The purification of the BaltBC was monitored by SDS-PAGE. The antimicrobial activity of the BaltBC was assessed against *Escherichia coli* and *Staphylococcus aureus* by the microdilution broth method. Bacteria were grown in Muller Hilton broth with shaking at 37°C for 18h. For the negative control was used autoclaved MilliQ water and for the positive control was used gentamicin. The optical density was measured by a spectrophotometer (Mini-BioSpec - Shimadzu Biotech, Japan) a 595nm. **RESULTS AND DISCUSSION:** *B. alternatus* crude venom was applied on a DEAE-Sephacel column and produced eight main protein peaks denominated A1 to A8. The A8 fraction was submitted to molecular exclusion chromatography on a Sephadex G-75 column, resulting in three peaks, denominated P1 to P3. The P1 fraction of this chromatography corresponds to the BaltBC, which is a monomeric protein with an apparent molecular mass of 40 kDa on SDS-PAGE. Our results showed that the BaltBC (1,56 µg) was able to inhibit (58%) the growth rate of bacteria *E. coli*. **CONCLUSION:** Results described in this work showed that the snake venom could be used as a tool in the search for new drugs against resistant microorganisms.

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Key Words: Snake venom, *Bothrops alternatus*, antimicrobial activity.