

**TITLE:** ANTIMICROBIAL ACTIVITY OF *Crotalus durissus terrificus* VENOM COMPONENTS.

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### **ABSTRACT**

Venom are substances composed of several pharmacologically active compounds acting in synergy to disrupt homeostasis. Beside their toxic activities, several toxins display interesting pharmacological properties, and several commercially available drugs are derived from toxins, such as Captopril. Currently, there is a growing interest in biotechnological applications of toxins. *Crotalus durissus terrificus* is a toxic complex of several substances, including peptidases, phosphodiesterases, L-amino acid oxidases (LAOs), 5'-nucleotidases, and toxins, such as Crotoxin, Crotoamine, Gyroxin and Convulxin. The aim of this work was to perform a scan of the venom fractions to verify the presence of antimicrobial activity against *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Escherichia coli* and *Micrococcus luteus*. The venom was supplied by Butantan Institute, fractionated by Gel Filtration Chromatography and the resulting fractions were dialyzed against 0.01% acetic acid and lyophilized. The fractions were resuspended in 0.01% acetic to a final concentration of 10 mg/mL. Then droplet diffusion assays were performed with the aforementioned bacteria. Giroxin showed antimicrobial activity against *Staphylococcus aureus* while Crotoamine showed antimicrobial activity against all the bacteria tested, as reported in previous research. Epidemiological data show that, currently, there is a growing prevalence of multidrug resistant organisms with a great diversity of resistance. Therefore, new strategies, such as the use of antimicrobials that do not rely on inhibition of metabolic pathways, seem to be a promising approach to develop new antimicrobial substances. In this way, the discovery of new biomolecules with antimicrobial potential becomes of great importance.

**Keywords:** Antimicrobial peptide activity, *Crotalus durissus terrificus* venom, Snakes, Droplet diffusion assay.

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