

Purification of a Toxin Wap65-Like from the Catfish *Cathorops spixii* Venom

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Of the venomous fish in Brazil the catfishes are the ones who cause the greatest number of accidents. The present study describes the isolation, partial characterization, and biological activity of a toxin from the venom of *Cathorops spixii*. The toxin was purified by RP-HPLC with a C18 column, and by SDS-PAGE presented a band near to 65 KDa. The toxin was sequenced by EDMAN degradation and a homology search of protein data bank revealed that this toxin had homology to and shared several homologous regions with Wap65 and mammalian glycoprotein hemopexin. A high conservation of cysteine residues was seen between the proteins and the new toxin, suggesting similar disulfide bridges in the toxin. Several other regions showed very high homology between, implying that may have physiological functions similar to the found proteins, as the presence of glycosilation sites observed and tested for the new toxin. Despite the above similarities, distinct structural differences between the toxin and Wap65 /hemopexin aroused the question whether they can share the same function. Intravital microscopy analysis revealed that the natural toxin at tested doses (5 and 50 µg) is effective at the microcirculatory environment inducing increase of leukocyte rolling and adherence, additionally we observe thrombi and arteriolar vasoconstriction. We shown for the first time the identification of a protein homologous to hemopexin in venom. Taken together, the results of this study suggest the participation of the toxin in the envenomation not only important for its classical role as a warm temperature acclimation protein, but more importantly, may also function as an immune response protein.

Key-words: catfish, venom, toxin, wap65, hemopexin.

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