

## ABSTRACT

### INHIBITORY EFFECTS OF 6-O-PALMITOYL-L-ASCÓRBIC ACID (ASC16) ON *Bothrops alternatus* VENOM.

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Snake venoms are a complex mixture of toxins, mostly of enzymatic nature, such as Phospholipases A<sub>2</sub> (PLA<sub>2</sub>), Metalloproteinases (SVMP), Serine proteases (SVSP), others. At present, there is a growing interest in the search for natural or synthetic inhibitors acting on these components and thus allow mitigating their local and systemic effects. The main damage induced by the venom of *B. alternatus* is caused by SVMP, for this reason in the present work we proposed the use of 6-o-palmitoyl-l-ascorbic acid (ASC16) as an inhibitor of the toxic effects induced by the SVMP of *B. alternatus* venom. For this purpose, ASC16 (0.24 mM) was incubated with crude venom (1µg/µL) for 30 min at 37 °C. Proteolytic activity was measured using azocasein as substrate, and tissue injury (edema, hemorrhage and necrosis) was evaluated in a murine model (CF01). ASC16 inhibited 49.6% proteolytic activity, 78.06 % hemorrhagic activity, also the edema produced by the venom in the presence of ASC16 showed significant difference ( $p < 0.05$ ) compared to the whole venom control without inhibitor. Histological results showed that, as it known, crude venom provoked severe tissue injury, with extensive hemorrhagic areas, abundant inflammatory infiltrate and necrosis. In contrast, the *B. alternatus* venom treated with ASC16 did not cause hemorrhages and it caused mild lesions with little necrosis of muscle fibers and moderate inflammatory infiltrate. The results obtained indicate that compound ASC16 has potential as an inhibitor of SVMP enzymatic activity, suggesting its possible application as a local therapeutic agent. However, to understand in depth the mechanisms of ASC16 inhibition, further studies are required.