



EFFECTS OF *Coutarea hexandra* HYDROALCOHOLIC EXTRACT AGAINST THE NEUROMUSCULAR BLOCKADE OF *Lachesis muta muta* SNAKE VENOM

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INTRODUCTION

Medicinal plants are one of the oldest forms of treatment, cure, and disease prevention. To add medicinal value to certain plants is a way of preserving them in nature against their devastation, seeing the benefits it can bring to humanity. Ophidian accidents caused mainly by anthropic action must receive immediate attention by gravity that encases, as in the case of *Lachesis muta muta*, through early antivenom administration. However, in some communities, this attention is diffculted by several factors and the search for alternatives and strategies to minimize the damage must be continually sought. The objective of this work was to evaluate the neutralizing ability of *Coutarea hexandra* hydroalcoholic extract (*ChE*), a plant few studied, against the neuromuscular blockade induced by *L. m. muta* snake venom.

MATERIAL AND METHODS

The pharmacological assays (preincubation and post venom models) were made in a validated functional model using mouse phrenic nerve-diaphragm preparations (*ex vivo*) through conventional myographic technique. Before, the *ChE* was pharmacognostically characterized to show the presence of coumarin and

quinine, which were assayed separately or together with the venom. This study was approved by the Animal Ethics Committee of Sorocaba University (protocol nº 165/2019), and it was registered with the Brazilian National System for the Management of Genetic Patrimony and Associated Traditional Knowledge (SISGEN, registration no. A843915).

RESULTS

ChE was able to avoid the paralysis induced by *L. m. muta* venom in the preincubation model, but not when the venom did trigger its blockade mechanism on the isolated preparation. After structure-activity assays, quinine seems to play a central role against venom paralysis.

CONCLUSIONS

The previous interaction *ChE*: venom in the preincubation model showed the efficacy of *ChE* against the neurotoxicity of the *L. m. muta* venom, probably due to the presence of quinine in the extract, which acts in a low amount, but the other compounds in the extract are not to be neglected.

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