



INFLUENCE OF *Lafoensia pacari* (LYTHRACEAE) AGAINST THE NEUROMUSCULAR BLOCKADE-INDUCED BY BOTHROPSTOXIN-I

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INTRODUCTION

The species *Lafoensia pacari* A.St.-Hil. (Lythraceae), popularly known as "pacari" and natural from the Cerrado, has among its main characteristics antibacterial, antifungal, anti-inflammatory, and analgesic activity, with several other medicinal applications. In contrast, ophidian accidents caused by *Bothrops jararacussu* cause symptoms such as inflammation, oedema (swelling), necrosis in the bite area with extensive local tissue damage, haemorrhages, neurotoxic and myotoxic effects - caused by bothropstoxin-I (BthTX-I), a myotoxin isolated from *Bothrops jararacussu* snake venom, that corresponds to 15% of the total snake venom. The objective of this study was to evaluate the influence of the *Lafoensia pacari* extract against the neurotoxic effect of BthTX-I.

MATERIAL AND METHODS

The pharmacological tests (pre-incubation, and post-myotoxin model) were carried out on phrenic nerve-diaphragm preparations isolated from mice (ex vivo), by conventional myographic technique. The results were statistically compared to the neutralizing capacity of pacari extract against neuromuscular block induced by BthTX-I, face to Tyrode and pacari extract controls, and BthTX-I alone. This study was

approved by the Animal Ethics Committee of Sorocaba University (protocol nº 190/2020), and it was registered with the Brazilian National System for the Management of Genetic Patrimony and Associated Traditional Knowledge (SIGGEN, registration no. AA01592). Data were analysed by Anova one-way followed by Tukey test, with $p < 0.05$.

RESULTS

The pacari extract alone did not generate changes compared to the Tyrode control, unlike BthTX-I which led to paralysis of more than 50 % of the preparation with only 40 µg/mL. Combining then BthTX-I and extract, it was evidenced the decrease of paralysis induced by BthTX-I both in pre-incubation (102 % ± 2 of functioning fibers, $p < 0.05$) and post-myotoxin (60 % ± 8 of functioning fibers) models (added after 10 min.) demonstrating its capacity against the neurotoxicity effect of the toxin.

CONCLUSIONS

The previous interaction between pacari extract: BthTX-I in the preincubation model showed a better efficacy of extract against the BthTX-I than a post-myotoxin model.

