

Title: PHYTOCHEMICAL EVALUATION AND ANTIBACTERIAL ACTIVITY OF *Stryphnodendron coriaceum* Beth AND *Lafoensia pacari* A. St.-Hil., FACE TO *Corynebacterium diphtheriae* SAMPLES

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Abstract:

Corynebacterium diphtheriae is the main causative agent of diphtheria and has been isolated from various infectious syndromes such as sepsis and endocarditis. Resistance of microorganism to antimicrobial agents chosen for the treatment has been described. In the last decades, there has been a growing interest in the use of medicinal herbs and their extracts in therapy, including their use as antimicrobials. The aim of the study was to evaluate the secondary metabolites and the antibacterial activity of *Stryphnodendron coriaceum* Beth (barbatimão) and *Lafoensia pacari* A. St.-Hil. (mangava) face to *C. diphtheriae* isolated samples from the nasopharynx of patients during a diphtheria outbreak occurred in different locations of Maranhão, Brazil, in 2010. The leaves of *S. coriaceum* and *L. pacari* were collected in the city of Estreito-MA submitted to a drying process. To identify the plants, exsiccataes were made, which were deposited at the Ático Seabra Herbarium of Maranhão Federal University. The crude hydroalcoholic extracts (CHE) were obtained from the dried leaves after trituration with 70% ethanol at a ratio of 1:10 for 7 days under daily stirring. The CHE were submitted to phytochemical analysis of phenols and tannins (reaction with ferric chloride), flavonoids (presence of staining at pH 3; 8,5 and 11 and staining of the sample basified and acidified after heating), steroids and triterpenoids (extraction with chloroform, acetic anhydride and sulfuric acid) and saponins (persistence of foam after stirring). Antibacterial activity was evaluated (diffusion technique in agar) of CHE *S. coriaceum* (74mg/mL) and *L. pacari* (255mg/mL) face to 5 clinical isolated diphtheria toxin (DT) producers and 1 non DT producer. As negative and positive controls, was used dimethyl sulfoxide solvent up to 10%, the same as used for dilution of CHE, and the chloramphenicol, respectively. The phytochemical screening was positive for both plant species, hydrolysable tannins, flavanonois, flavanones, steroids and saponins. The CHE of *S. coriaceum* and *L. pacari* inhibited bacterial growth of all tested samples, regardless of DT production. Medicinal herbs correspond to the older "weapons" used by humans to treat illnesses. The discovery of new and more effective antimicrobial agents is essential.

Keywords: antibacterial activity, *Corynebacterium diphtheriae*, medicinal herbs.

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