

TITLE: Evaluation of the antimicrobial activity of *Xylostoma ciliatifolia* fractions against *Staphylococcus* spp.

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ABSTRACT

Staphylococcus spp. are dispersed in different environments, being closely linked to the human body and food, and can cause diverse diseases, among them dermatitis and food poisoning. Nowadays, due to the emergence of resistance of microorganisms to conventional drugs, it has been looked for alternatives of natural compounds as antimicrobial alternative. *Xylostoma ciliatifolia*, has been cited with several therapeutic activities, such as sedative and antioxidant, however, there are few reports of evaluation of the antimicrobial activity of fractions obtained from leaf extracts of this plant. The aim of this work was to evaluate few fractions extracted from leaves of the *X. ciliatifolia* plant against *Staphylococcus* spp. (ATCC MRSA 33591 - methicillin resistant; MSSA 25293 - methicillin sensitive; and two isolates of *Staphylococcus* spp. From goat milk, one positive and one negative coagulase producers. From the leaves of *X. ciliatifolia* the antimicrobial activities of the fractions in dichloromethane (DCM), Hexane (HEX), Butanol (BuOH) and Ethyl Acetate (AcEt) were obtained and tested. The assays were done by agar diffusion with concentrations of 10mg/mL of the fractions and broth microdilution in microplates with concentrations between 128 and 0.5µg/mL. The results showed antimicrobial activity of the BuOH fraction at the concentration of 10mg/mL, in the diffusion test, against MRSA, MSSA and coagulase negative *S. aureus* with inhibition halos of 15mm, 16.5mm and 9.5mm respectively. Also, in this assay, the HEX, DCM and AcEt fractions at 10mg/mL inhibited the growth of the MSSA strain with halos of 7.5mm, 14mm and 9mm respectively. In microdilution assays for evaluation of minimum inhibitory concentrations, all concentrations tested were ineffective against all microorganisms tested, indicating the need for higher concentrations of the fractions for the effective inhibition against the reported bacteria. It is concluded that despite the antimicrobial action presented by some fractions against strains of *Staphylococcus*, in this work higher concentrations were required for effective microbial inhibition. It's important to highlight that the strain considered resistant to conventional antimicrobials and of public health relevance, MRSA, was inhibited by the butanolic extract, and further studies are necessary to establish the adequate concentrations for an effective treatment of infections caused by this bacteria.

Keywords: Phytotherapeutic therapy; antimicrobial; *Xylostoma*; MRSA

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