

TITLE: ANTIMICROBIAL ACTIVITY OF LEAF AND STEM BARK EXTRACTS OF STRYPHNODEDRON sp. FROM THE AMAZON REGION.

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ABSTRACT

Plants of the genus *Stryphnodendron* have a high concentration of tannins in their bark and leaves. The condensed tannins are responsible for the antimicrobial activity of this plant. Thus, this study aimed to evaluate the antimicrobial potential of the ethyl acetate and methanolic extracts from stem bark (EAeCSP and EMCSP) and the leaf (EAeFSP and EMFSP) of *Stryphnodendron* sp. The antimicrobial evaluation was tested against gram-positive bacteria (*Staphylococcus aureus* and *Staphylococcus epidermidis*) and Gram negative bacteria (*Pseudomonas aeruginosa* and *Escherichia coli*) by the resazurin staining microdilution assay to determine the minimum inhibitory concentration (MIC). The colony forming unit count (CFU) was used to obtain the minimal bactericidal concentration (MBC) as described by NCCLS. Data showed that the bark extracts exhibited excellent antimicrobial action against *S. aureus* (EAeCSP- MIC and CBM of 40 µg/ml, EMCSP- MIC = 40 µg/ml and CBM = 90 µg/ml), but they had moderate to weak bacterial activity against *P. aeruginosa* (both extracts - CIM and CBM = 390 µg/ml) and *E. faecalis* (EAeCSP - MIC and CBM = 780 µg/ml and EMCSP - MIC and CBM = 1560 µg/ml). In addition, these bark extracts were inactive against *E. coli* (MIC and MIC ≥1560 µg/ml). While, leaf extracts of *Stryphnodendron* sp (EAeFSP and EMFSP) also did not have antimicrobial action against all bacteria tested (MIC and CBM > 1560 µg/ml). Therefore, we concluded that stem bark extracts from *Stryphnodendron* sp were the most effective in inhibiting bacterial growth, mainly against *S. aureus*, and the tannins may be the probable components associated with this activity. Thus, future research is being carried out in order to isolate and characterize these

componentes, which can be of great interest to scientific and technological innovation.

Keywords: antimicrobial activity, *Stryphnodendron* sp, ethyl acetate extract, methanolic extract

Development Agency: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), CNPq and FAPESPA.