

Title: ANTIMICROBIAL ACTIVITY OF EXTRACTS FROM *Bauhinia variegata*

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Abstract:

The genus *Bauhinia* is quite broad, popularly known as cow's paw by having bilobed leaves, it is widely distributed in Brazil. Among the species, *Bauhinia variegata* has shown several biological activities, such as cytotoxicity, anti-tumor, anti-inflammatory, anti-ulcerogenic, antiviral and antimicrobial. Thus, this study aimed to evaluate the antimicrobial activity of ethanol extracts of *Bauhinia variegata* (EEBV) from different cities of Paraná. Plants were collected in different parts of the State of Paraná-PR, defined with the letters A to K, and provided by the Laboratory of Chromatography and Natural Products (CRONAT) at the State University in the Midwest (UNICENTRO)/PR. The antimicrobial activity was tested against gram-positives bacteria: *Staphylococcus aureus* ATCC 6538, *Enterococcus faecalis* ATCC 29212 and gram-negative: *Pseudomonas aeruginosa* ATCC 25853 and *Escherichia coli* ATCC 8939. For assay, EEBVs were diluted in 10% DMSO and the antimicrobial activity was performed using microdilution assay with Resazurin staining to obtain the Minimum Inhibitory Concentration (MIC). The Minimum Bactericidal Concentration (MBC) was obtained by counting the colony forming units. Our data showed that the EEBV E from C. M. Rosa/PR showed the best antimicrobial activity against most of the tested bacteria (*S. aureus*, *E. faecalis* and a gram-negative bacteria, *E. coli*), with MIC and MBC values varying between 0.93 to 0.46 mg/ml. In addition, the extracts C (Paranavaí/PR) and I (Maringá/PR) also showed excellent antimicrobial activity against the gram-positive bacteria, *S. aureus*, with values of MIC and MBC of 0.93 mg/ml and lower than 0,46mg/ml, respectively. An important aspect, none of the extract was efficient in inhibiting the *P. aeruginosa* growth. Thus, we concluded that, in general, the EEBV has good antimicrobial activity, mainly against gram-positive bacteria. However, this efficiency of the extracts in inhibiting or killing the bacteria varied according to the regions characteristics in which plants were collected.

Keywords: antimicrobial activity, *Bauhinia variegata*, cow's paw, gram-positive bacteria

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