

## ANTIMICROBIAL ACTIVITY OF ETHYL ACETATE FRACTION OF URUCUM EXTRACT IN HUMAN PATHOGENIC BACTERIA.

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*Bixa orellana* L. or urucum, a native tropical tree of Central and South American rain forests is used to treat various diseases in popular medicine. In Brazil, urucum seeds are used for treating elevated blood lipidic levels, as colorants for foods among other applications. Published studies have indicated an antioxidant effect, antibacterial, antifungal, analgesic and anti-inflammatory action. Due to widespread use of urucum for a large medicinal application, it is necessary to investigate its antimicrobial efficacy over infectious agents. This study was performed to determine the antimicrobial activity of ethyl acetate fraction of urucum extract (BoEtOAc) against some bacteria human pathogens. The leaves of urucum were collected, dried at room temperature and extracted with ethanol. The ethanol extract was dried and resuspended in a methanol/water solution (9:1) and the ethyl acetate (EtOAc) fraction was obtained by partitioning of the methanol/water solution with different polarity solvents (i.e., ethyl acetate). The antimicrobial activity was evaluated by agar diffusion method to BoEtOAc extract in Muller Hinton plates which were scattered each studied bacteria for 24h. The assays according to Clinical Laboratory Standards Institute (CLSI) were used to test the antimicrobial activity of the BoEtOAc extract the concentrations of the EtOAc fraction tested ranged from 3,33 to 33,3 mg/ml against *S. aureus* (ATCC25923), and *S.pyogenes* (ATCC19615). The tests were performed in triplicate and the results expressed as the arithmetic average of the diameter of the inhibition zones formed around the disks in the three replications in millimeters. Data were analyzed by test “t” of student at 5% significance level. The BoEtOAc extract was effective to inhibit the growth of *S. pyogenes* at concentrations of 16.6 mg/mL and 33,3 mg/mL (inhibition zones 10,22±0,2; 13,08±0,2 mm, respectively p=0,003). On the other side, as *S. aureus* presented more resistance to tested concentrations of BoEtOAc to achieve an antimicrobial activity, concentrations 33,3 mg/mL to 400 mg/mL (inhibition zones 9,7±0,2; 22,9±3,0 mm, respectively p=0,02) successful outcomes. In summary, the *in vitro* results suggest that BoEtOAc extract presented antimicrobial activity against human pathogenic bacteria.

Keywords: Antimicrobial activity; ethyl acetate fraction; pathogenic bacteria.

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