Antimicrobial Potential of *Libidibia ferrea* Extracts

¹Melo, M. S., ¹Arruda, I. R. S., ²dos Anjos, J. V., ¹Silva, M. V., ¹Correia, M. T. S.

¹Departamento de Bioquímica, Centro de Ciências Biológicas, Universidade Federal de Pernambuco, Pernambuco, Brasil. ²Departamento de Química Fundamental, Centro de Ciências Exatas e da Natureza, Universidade Federal de Pernambuco, Pernambuco, Brasil.

Resistance to antibacterial agents has been an important global problem, leading to search new compounds with antibacterial properties. Medicinal plants represent a rich source of antimicrobial agents. The aim of this study was to investigate the *in vitro* antimicrobial activity of *Libidibia ferrea* extracts against gram-positive and gram-negative bacteria, and its toxicity. The extracts were prepared from the leaves of *L. ferrea* in soxhlet extractor, using the solvents cyclohexane, chloroform, ethyl acetate, methanol and water. The final concentration (100 mg/ml) these extracts were prepared by reconstituting with dimethylsulfoxide solvent. Antimicrobial activity was evaluated by broth microdilution technique for determining the Minimum Inhibitory Concentration (MIC) and minimum bactericidal concentration (MBC). The five leaves extracts of *L. Ferrea* were tested against *Bacillus subtilis*, *Escherichia coli*, *Proteus vulgaris*, *Pseudomonas aeruginosa* and *Staphylococcus aureus*. Clindamycin (25mg/ml) and Neomycin (25mg/ml) were used as positive control and dimethylsulfoxide solvent was used as negative control. Toxicity was evaluated by hemolytic activity. The extracts exhibited considerable inhibitory effects against all tested microorganisms with MIC ranging from 0.39 mg/ml to 12.5 mg/ml. Clindamycin and neomycin showed growth inhibition at concentrations of 0.19 mg/ml and 0.09 mg/ml respectively for all the tested microorganisms. Among the tested extracts, the cyclohexane extract showed highest antibacterial activity with MIC ranging from 0.39 mg/ml to 3.12 mg/ml, showing antibacterial potential when compared with standard antibiotics. Significant Hemolysis was not detected in tested concentrations. *L. ferrea* extracts showed potent antimicrobial activity without apparent toxicity.

Key Words: Antimicrobial activity, *Libidibia ferrea*, Natural products.
Supported by: CAPES, CNPq, FACEPE.