

TITLE: EVALUATION OF THE ANTIMICROBIAL POTENTIAL OF *ANACARDIUM OCCIDENTALIS* AND *CAESALPINIA LEIOSTACHYA* EXTRACTS

AUTHORS: EMMANUELI IRACEMA FARAH¹, MONTEIRO, J. M¹.; PORTELA, C. E¹.; MENDES, A. R. S¹.; RABELO, H. P. S. M¹.; CARVALHO, M. J. F¹.; SOUZA, M.V.D².; SANTOS, V.L².; FERREIRA, G. F³.; MONTEIRO, A. S¹.

INSTITUTION: 1-UNIVERSIDADE CEUMA, SÃO LUÍS MA (RUA JOSUÉ MOTELLO, 1, RENASCENÇA II, CEP 65075-120)

2 UNIVERSIDADE FEDERAL DE MINAS GERAIS, BELO HORIZONTE (AV. PRES. ANTÔNIO CARLOS, 6627, 31270-901)

3 UNIVERSIDADE FEDERAL DE JUIZ DE FORA, GOV.VALADARES (AV.DR RAIMUNDO REZENDE, 330- CENTRO, 35012-140)

ABSTRACT:

Staphylococcus aureus is a bacterial species classified as an opportunistic pathogen, present in the skin and nasal mucosa, which can cause from simple to severe infections. To address *S. aureus* infections, medical staff must choose an effective antimicrobial agent. However, excessive or erroneous use increases the risk of treatment failure by potentiating the high ability of these microorganisms to develop antimicrobial resistance. The aim of this study was to evaluate the antimicrobial potential of the hydroalcoholic extracts of leaves of *Anacardium occidentale* Linn and stem bark of *Caesalpinia leiostachya* Linn, against *Staphylococcus aureus*. In order to evaluate the minimum inhibitory concentration (MIC) of the hydroalcoholic extracts, the broth microdilution methodology was used, according to the Clinical and Laboratory Standards Institute (CLSI, 2016). The bacterial inoculum consisted of suspensions of 22 *S. aureus* strains in Mueller-Hinton broth with addition of 1% glucose, at the cellular concentration of 1.5×10^5 CFU/ml. The MIC assays were conducted using with different concentrations (2-1,024 µg/mL). After the dilutions were carried out, each well received 5 µL of the standardized bacterial suspension. The microplates were incubated at 35 ± 2 °C for 24 h. The determination of the presence of bacterial growth was performed by visualizing turbidity in the wells. MIC results indicated that the extracts significantly inhibited the majority of *S. aureus* isolates tested at the concentration of 256 µg/mL (86%), and the highest concentration of inhibition was 512 mg/mL (14%). Only three *S. aureus* isolates were inhibited at a concentration of 1024 µg/mL (14%) using the extract of *C. leiostachya* L., which was effective to inhibit most of the isolates. The extracts were effective against *S. aureus*, and further studies are necessary for their use in clinical treatments.

Keywords: *Staphylococcus aureus*, antimicrobial, hydroalcoholic extracts, *Anacardium occidentale*, *Caesalpinia leiostachya*

Development Agency: Fundação de Amparo à Pesquisa e ao Desenvolvimento Científico e Tecnológico do Maranhão – FAPEMA

