HP-29: Evaluation of the antibacterial activity of extracts from two species of the *Acacia* genus

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Subject description: *Acacia* species plants of the Fabaceae family, have been utilized as medicinal plants since ancient civilizations. They have been employed in the treatment of a broad spectrum of disorders, including gastrointestinal, respiratory, ocular, and uterine ailments.

Objective: The objective of the present study is the evaluation of antibacterial activity of extracts from two species of the *Acacia* genus against four strains: *Staphylococcus aureus* ATCC 25923, *Pseudomonas aeruginosa* ATCC 9027, *Bacillus subtilis* ATCC 6633 and *Escherichia coli* ATCC 25922 by the disk diffusion method.

Methods: The three extracts (chloroform, ethyl acetate, and butanol) were obtained by macerating the leaves of both species in a hydro-alcoholic mixture (Methanol-Water, Me-OH/H_2O), followed by liquid-liquid extraction. Discs with a diameter of 6mm, saturated with 10µl of the extract, were placed on the surface of Petri dishes containing Muller Hinton medium inoculated with the test bacteria. The Petri dishes were then placed in a refrigerator at 4°C for 2 hours to allow for extract diffusion, after which they were incubated at 37°C for 24 hours.

Results and discussion: The obtained results indicate that the ethyl acetate and butanol extracts from both plants exhibit moderate antibacterial activity (average diameter of inhibition zones ranging from 7 to 10 mm) against both *Bacillus subtilis* and *Staphylococcus aureus* strains, while the dichloromethane extracts show no activity against all strains.

Conclusion: Based on the obtained results, it would be interesting to extend our research to try to isolate, purify and identify the active compounds responsible for this effect with the aim of developing new antibiotic molecules.

Keywords: Antibacterial activity, *Acacia*, Extracts, ATCC strains.