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ANTIMICROBIAL ACTIVITY OF DRY EXTRACT OF MORINGA OLEIFERA LAM. LEAVES

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RESUMO

Introduction: *Moringa oleifera* Lam. is a tree native to the southern Himalayas, northeastern India, Bangladesh, Afghanistan, and Pakistan. It is now widely distributed in tropical and subtropical regions of the world and it is known as the 'miracle tree' due to its multiple nutritional and medicinal properties. Objective: This study aimed to evaluate the antimicrobial activity of dry hydroalcoholic extract of *Moringa oleifera* Lam. leaves against *Pseudomonas aeruginosa* ATCC® 27853™, *Escherichia coli* ATCC® 25922™, and Staphylococcus *aureus* ATCC® 25923™. Methods: The dry extract was obtained by concentrating in a rotary evaporatora 30° hydroalcoholic solution of the dried powdered leaves according to the updated version of the Argentine Pharmacopoeia. The Minimum Inhibition Dose (MID) was tested for all strains, and the inhibition diameters (ID) were measured. The effective dose used on each disc was 8; 4; 2; 1; 0.75; 0.5 and 0.25 mg. A disc impregnated with sterile water was used as a negative control. Commercial discs of erythromycin 15 µg (Britania S.A., Argentina) and amikacin 30 µg (Britania S.A., Argentina) were used as positive control. The Minimum Inhibitory Concentration (MIC) and Minimum Bactericide Concentration (MBC) were carried out only on the strains that showed antimicrobial susceptibility in the disc diffusion method and according to the Clinical and Laboratory Standards Institute guidelines. Each experiment was performed in triplicate. The mean and standard deviation (SD) were obtained. Results: The dry extract showed antimicrobial activity against *Staphylococcus aureus* ATCC® 25923™; with a MID = 2.0 mg (SD= 0.5), with an average ID = 8.0 mm (SD=1.0), a MIC = 32 mg mL^{-1} (SD=0.5) and a MBC > 128 mg mL^{-1}. However, it did not show antibacterial activity against *Escherichia coli* ATCC® 25922™ and *Pseudomonas aeruginosa* ATCC® 27853™. Conclusions: The results showed antibacterial activity of the dry extract against *Staphylococcus aureus*, but not against Gram-negative bacilli. This study representsan unprecedented contribution to the investigation of active metabolites of *Moringa oleifera* Lam.with possible antimicrobial effects in Argentina.

PALAVRAS-CHAVE: Anti-Bacterial Agents, Bacteria, Moringa oleifera, Plant Extracts, Plant Leaves

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