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ANTIBACTERIAL ACTIVITY OF THE HYDROETHANOLICEXTRACT MORINGA OLEÍFERA LAM. SEEDS

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RESUMO

Introduction: *Moringa oleifera* Lam. is a tropical tree that belongs to the *Moringaceae* family. Previous studies indicated the multiple nutraceutical or pharmacological functions including anti-inflammatory, antioxidant, anti-cancer, hepatoprotective, neuroprotective, hypoglycemic, and antimicrobial activity. Objective: The aim of this work was to study the antibacterial activity of the hydroethanolic extract of *Moringa oleifera* Lam. seeds against *Pseudomonas aeruginosa* ATCC® 27853™, *Escherichia coli* ATCC® 25922™ y *Staphylococcus aureus* ATCC® 25923™. Methods: The hydroethanolic extract was obtained by the L method (leaching) from *Moringa oleifera* Lam. dried seeds, collected in "El Moringuero" greenhouse, Posadas, Misiones Province, Argentina. The Minimum Inhibitory Dose (MID) was determined by the disc diffusion method, 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 ciprofloxacin 5 µg (Britania S.A., Argentina), colistin 10 µg (Britania S.A., Argentina), and erythromycin 15 µg (Britania S.A., Argentina) were used as a positive control. The Minimum Inhibitory Concentration (MIC) and the Minimum Bactericidal Concentration (MBC) were performed by the broth dilution method 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 hydroethanolic extract showed a MID= 2.0 mg, an average ID= 14.70 mm (SD=0.6). The MIC and MBC were 8.0 mg mL^{-1} (SD=0.1) and 26.7 mg mL^{-1} against *Staphylococcus aureus* ATCC® 25923™, respectively. The MBC/MIC ratio (MICI) was 3.3 (SD=1.1) qualified the action of the extract as bacteriostatic. Whereas showed no inhibitory activity against *Pseudomonas aeruginosa* ATCC® 27853™ and *Escherichia coli* ATCC® 25922™. Conclusions: These results suggest that the hydroethanolic extract of *Moringa oleifera* Lam. seeds would be a potential source of antimicrobial agents to be applied in the treatment of infections caused by *Staphylococcus aureus.* Further studies are needed to isolate the responsible metabolites of this activity. It is noted that these results obtained by the group of researchers represent the first data of antimicrobial activity of this plant species for the Argentine Republic.

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

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