

# IN VITRO ANTIMICROBIAL ACTIVITY OF HYDROETHANOLIC EXTRACT FROM MORINGA OLEÍFERA LAM. FRUITS

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## RESUMO

**Introduction:** The increase of resistant bacteria against commonly used antibiotics guides the search of active phytochemicals in medicinal plants that are a potential and alternative source of new antibacterial drugs according to their popular use. **Objective:** The aim of this work was to study the antimicrobial properties of hydroethanolic extract of *Moringa oleifera* Lam. fruits on *Staphylococcus aureus* ATCC® 25923™, *Escherichia coli* ATCC® 25922™ and *Pseudomonas aeruginosa* ATCC® 27853™. **Methods:** The extract was obtained according to the methodology described in the Argentine Pharmacopoeia; the dry powder of *Moringa oleifera* Lam. fruits were extracted by maceration and percolation. The solvent was partially removed, and the extract concentrated using a rotary evaporator, then placed on a glass plate which was incubated at 37° C. The antimicrobial activity of hydroethanolic extract was determined by the disc diffusion method. The effective dose used on each disc was 8; 4; 2; 1; 0.75; 0.5 and 0.25 mg and the inhibition diameters (ID) were measured. 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. This test was performed in triplicate. The mean and standard deviation (SD) were obtained. The Minimum Inhibitory Concentration (MIC) was determined by the broth dilution method in Müeller-Hinton (Britania S.A., Argentina), range between 128 and 0.0625 mg mL<sup>-1</sup>. The Minimum Bactericidal Concentration (MBC) was determined by seeding the tubes of MIC without visible development to nutritious agar plates (Britania S.A., Argentina) and cultivation at 37°C. **Results:** The extract showed a MID = 8.0 mg, an ID = 8 mm (SD=0.0), a MIC = 64 mg mL<sup>-1</sup> and aMBC > 128 mgmL<sup>-1</sup> against *Staphylococcus aureus* ATCC® 25923™. While showed no inhibitory activity against *Escherichia coli* ATCC® 25922™ and *Pseudomonas aeruginosa* ATCC® 27853™. **Conclusions:** This unpublished study for Argentina indicates that the extract from *Moringa oleifera* Lam. fruits could be a good source of antibacterial phytochemicals against infections caused by *Staphylococcus aureus*.

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

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