

Antimicrobial Activity of Curry Leaf (*Murraya keonigii*) Extracts: An In-Vitro Study

•Oluchi Judith Osuala¹; Amarachi Goodnes Mmezi¹; Chinyere Constance Ezemba²; *Chukwuma Chukwuemeka Chukwuma¹; Nnadi Charles Okeke³; *Angus Nnamdi Oli⁴

¹Madonna University Elele Rivers State Nigeria; ²Success Education Colleges; Marsha Furest School of Nursing Riverside, California; ³Department of Pharmaceutical and Medicinal Chemistry, University of Nigeria Nsukka, Nigeria.; ⁴Department of Pharmaceutical Microbiology and Biotechnology, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria

INTRODUCTION & AIM

- Curry leaves, scientifically known as *Murraya keonigii* (L.) Spreng, is well-known due to their strong fragrance, their role in Asian cooking, and their many therapeutic benefits, which include being anti-diabetic, antioxidant, antibacterial, and anti-inflammatory.
- This research examines the antibacterial activities of curry leaf extracts against different bacterial strains in a laboratory setting, utilizing ethanol and aqueous solvents.

METHOD

Sample Collection

- The plants were collected, dried and authenticated (code: FPI 2472) and pulverised.

Extraction

- The grounded plants were macerated in water and ethanol to get aqueous (1.53%) and ethanol (2.6%) extracts respectively for 48hrs

Antimicrobial Susceptibility (AST)

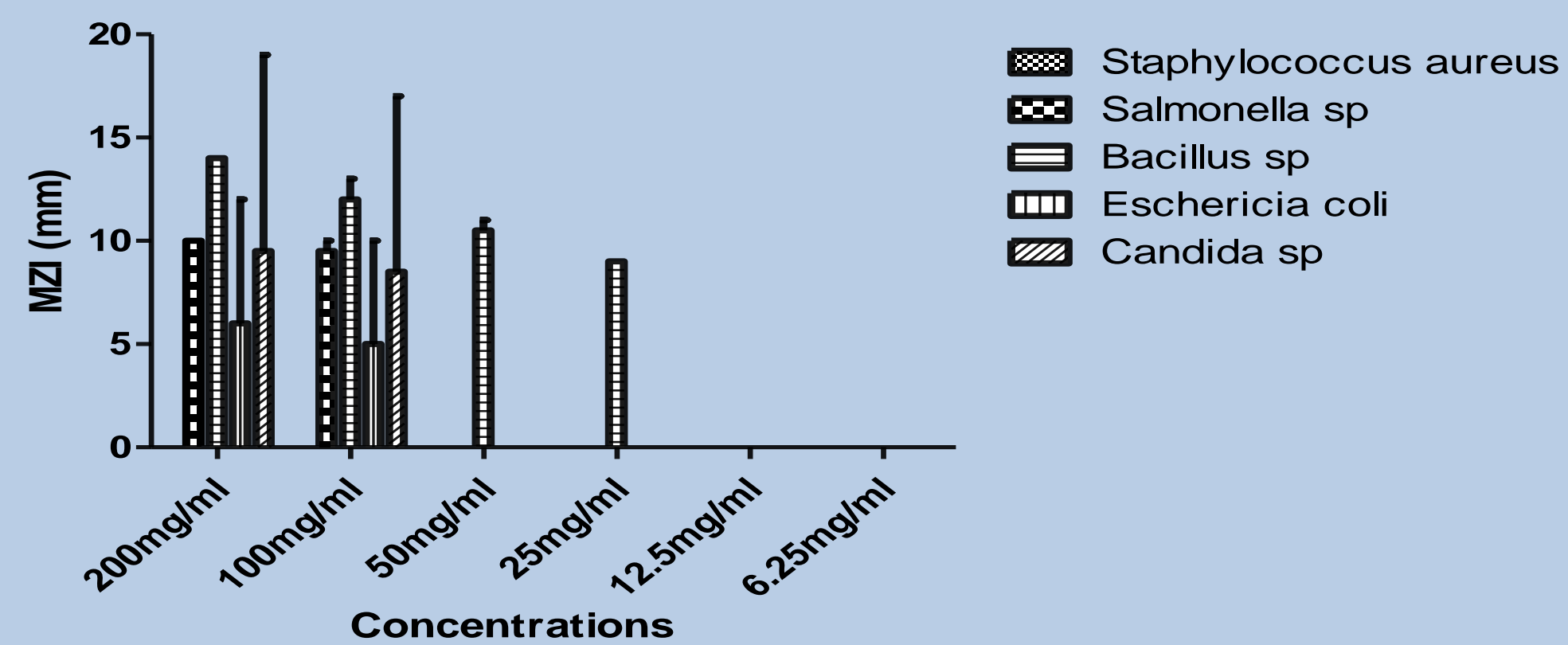
- AST was carried out using agar well diffusion method
- Minimum inhibitory concentration and Bactericidal Concentration was determined using agar dilution method

Gas chromatography mass spectrometry

- The active ingredients of the extracts were analysed using the gas chromatography mass spectrometry method using the procedure from Otolorin et al (2020)

RESULTS

Ethanol extract of *Murranya keonigii*



Aqueous Extracts of *Murraya Koenigii*

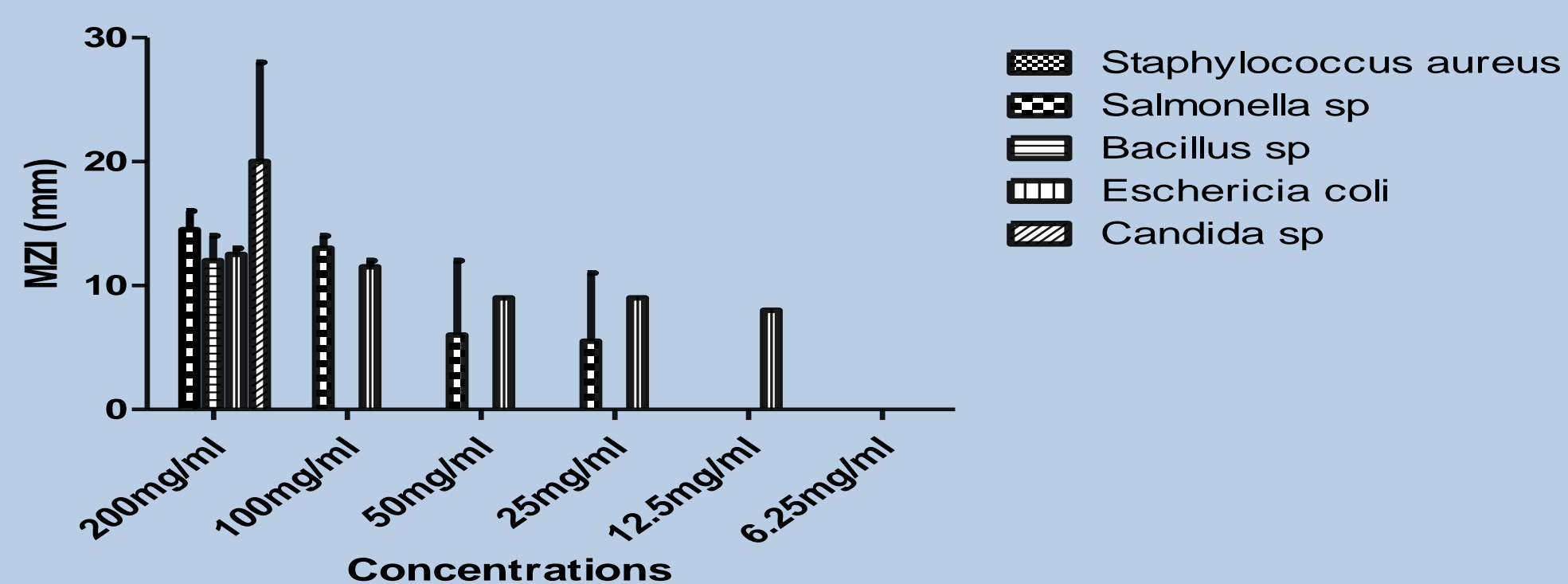


Table 1: Minimum inhibitory concentration (MIC) of the extracts of curry leaf (*Murraya keonigii*) on isolates

Isolates	Ethanol extract	Aqueous extract
<i>Escherichia coli</i>	100mg/ml	12.5mg/ml
<i>Bacillus sp.</i>	25mg/ml	200mg/ml
<i>Salmonella typhi</i>	100mg/ml	25mg/ml
<i>Staphylococcus aureus</i>	-	-
<i>Candida albicans</i>	100mg/ml	200mg/ml

Table 2: Minimum Bactericidal (MBC) of the extracts of curry leaf (*Murraya keonigii*) on isolates

Isolates	Ethanol extract	Aqueous extract
<i>Escherichia coli</i>	-	25mg/ml
<i>Bacillus sp.</i>	50mg/ml	200mg/ml
<i>Salmonella typhi</i>	100mg/ml	100mg/ml
<i>Staphylococcus aureus</i>	-	-
<i>Candida albicans</i>	200mg/ml	200mg/ml

important chemicals, including hexadecanoic acid, methyl ester, and cyclotetrasiloxane, octamethyl, in the extracts.

- These compounds are likely responsible for the antibacterial activities.
- The statistical analysis validated the significance of the data ($p < 0.05$).

CONCLUSION

This work emphasizes the potential of *Murraya keonigii* extracts as natural antibacterial agents, supporting their need for future investigation in pharmaceutical applications.