

# **Bacteriological profile and in vitro antibacterial activities of some liquid herbal preparations sold in Abia State, south-eastern Nigeria**

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## **Abstract**

**Background:** The use of liquid herbal preparations in the treatment and management of human diseases has long been practiced before the advent of chemotherapy and is a fundamental component of the African traditional healthcare system.

**Objectives:** The objective of this study is to analyze the bacteriological profile and *in vitro* antibacterial activities of selected indigenous liquid herbal products sold in Abia State, Nigeria. **METHODS:** A total of 315 bacterial strains were isolated from 150 therapeutic liquid herbal preparations (LHPs) sold in different parts of Abia State. Pathogenic bacteria were isolated from these products; the isolates were evaluated for total aerobic plate count, Gram's reaction, biochemical reaction. Antibacterial activity was assessed using minimum inhibitory concentration (MIC), minimum bactericidal concentration (MBC) and inhibitory zone diameter (IZD). The MBC, MIC and invitro antibacterial activities of LHPs were carried out against 3 test clinical bacterial isolates; *Staphylococcus aureus*, *Escherichia coli* and *Pseudomonas aeruginosa*, using agar well diffusion methods.

**Results:** The number of isolates obtained in this study were; 100 (31.4%), 84 (26.7%) 131 (41.6%) from Umuahia, Ohafia and Aba respectively. The genera isolated included *Salmonella*, *Bacillus*, *Escherichia*, *Klebsiella*, *Proteus*, *Staphylococcus*, *Streptococcus*, *Citrobacter* and *Pseudomonas*. Out of 150 LHPs processed, 20 showed no bacterial growth. Different concentrations of these LHPs were evaluated for their antibacterial activities. MIC for LHPs with antibacterial activities range from 6.25-100%. MBC ranged from 12.5-100%, while IZD had range of 6-20mm.

**Conclusion:** The study revealed that some tested liquid herbal preparations were grossly contaminated with bacteria while some had antibacterial activities.

**Key words:** Liquid herbal preparations, Antibacterial activity

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