

**CHARACTERIZATION OF ANTIMICROBIAL PROFILES
OF LAUNAEA CORNUTA**

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ABSTRACT

CHARACTERIZATION OF ANTIMICROBIAL PROFILES OF *LAUNAEA CORNUTA*

This was a bioassay directed investigation of crude extracts from dried *Launaea cornuta* plant powder. Particular reference was by using less polar to more polar solvents in succession, namely; Petroleum ether, Ethyl acetate, Dichloromethane, and an extract of Methanol done separately on the same plant material. Selected bacteria and yeasts were subjected to these extracts at a predetermined concentrations aimed at establishing any antimicrobial activity of the plant.

Total extracts of *Launaea cornuta* using Methanol and sequential extracts of Petroleum ether, Ethyl acetate and Dichloromethane were obtained by Soxhlet extraction. The extracts were analyzed by Thin Layer Chromatography (TLC). The TLC plates were subjected to Vanillin, Dragendorff and Ferricyanide reagents. Visualization of the developed plates was done by both naked eye and under UV light. The extracts were also subjected by Disc Diffusion Methods to cultures of *Staphylococcus aureus*, Methicillin Resistant *Staphylococcus aureus*, *Escherichia coli* on Muller Hinton Agar; and two yeasts; *Candida albicans* and *Cryptococcus neoformans* on Sabouraud Dextrose Agar. The positive control was chloramphenicol and the negative control was 1 % DMSO impregnated Discs.

General chemical profiling of the crude extracts showed the presence of alkaloids, phenolics and other organic compounds. Methanol extracts had no antimicrobial activities against the tested microorganisms. Dichloromethane extracts were active against *Staphylococcus aureus* (33 %) out of three bacteria species tested but had no activity against *E. coli*, *C. albicans* and *Cryptococcus neoformans*. Ethyl acetate extract had the widest antimicrobial activity against three bacteria (3/5, 60 %): a Gram negative, *Escherichia coli* (mean inhibition zone of 7 mm); Gram positive, *Staphylococcus aureus* (mean inhibition zone of 9.33 mm), and also had activity against one yeast; *Cryptococcus neoformans* (mean inhibition zone of 7 mm). Petroleum ether crude extract had activity only against *Staphylococcus aureus* (mean inhibition zones of 7 mm).

The hypothesis stated at the beginning of this research was "Extracts of *Launaea cornuta* have no antimicrobial activity" was confirmed by the results of the study. Further work is recommended using a wider range of solvents, microorganisms, use of fresh extracts, and extraction of pure plant fractions as well as using other methods such as Preparative TLC and HPLC. Possible isolation and development of an active compound as a new antibiotic is suggested.