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ANTIMICROBIAL ACTIVITIES AND PARTIAL CHARACTERIZATION OF HEXANE AND ETHYL ACETATE EXTRACT OF MUSCA DOMESTICA LARVAE

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Background: *Musca domestica* larvae have been reported to be used traditionally for the effective management of several human ailments. To investigate the pharmacological justification for this use, the present work was designed to assess the antimicrobial and antioxidant activity of the crude methanol extract of *Musca domestica* larvae as well as to characterize the bioactive constituents in methanol and ethyl acetate fractions.

Materials/Methods: The antimicrobial screening of the extract was conducted against *Escherichia coli*, *Klebsiella pneumoniae*, *Salmonella typhi*, *Staphylococcus aureus* and *Pseudomonas aeruginosa* using agar well bioassay while 2, 2-diphenylpicryl-hydrazyl radical (DPPH) scavenging assay was employed in determining the antioxidant activities. The fractions were characterized using thin layer chromatography (TLC) and Gas chromatography– Mass Spectroscopy (GC-MS).

Results: The crude extracts showed a broad spectrum of antimicrobial activities with MICs of 80, 120, 80, 120, and 120 mg/mL against *P. aeruginosa*, *S. typhi*, *E. coli*, *S. aureus*, and *K. pneumoniae*, respectively. Antioxidant screening of the extract was positive, with IC₅₀ and antioxidant activities index (AAI) of 174.38 mg/mL and 0.29 respectively. TLC gave four fractions of each with R_f values in the range of 0.10 - 0.64 for methanol fraction and R_f values range of 0.10 - 0.44 for the ethyl acetate fraction. Further characterization by GC–MS chromatogram identified eleven (11) and thirteen (13) essential oils for ethyl acetate and methanol that can be grouped into oxygenated hydrocarbons of both saturated and unsaturated alkanates.

Conclusions: The occurrence of a variety of bioactive agents in *Musca domestica* extract is a justification for its potential to serve as a template for the development of drugs of pharmacological importance.