

# IN-VITRO ANTIBACTERIAL, PHYTOCHEMICAL, ANTIMYCOBACTERIAL ACTIVITIES AND GC-MS ANALYSES OF *Bidens pilosa* LEAF EXTRACT.

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- **Abstract:** The phytochemical constituents, antimicrobial activity, anti-mycobacterial activity and gas chromatography-mass spectrometry (GCMS) analysis of the West African ecotype of *Bidens pilosa* was investigated for possible medicinal properties. The antimicrobial activity of the hexane, dichloromethane, ethyl acetate and methanol extracts from the leaf of *Bidens pilosa* was evaluated using agar dilution method. The qualitative and quantitative phytochemical screening was carried out according to standard procedures. Partitioned fractions of the methanolic extract was subjected to anti-mycobacterial bioassay. Different fractions of the leaf were subjected to GCMS to ascertain the compounds present. The antimicrobial analysis revealed the methanolic fraction as having the highest number of activity against test organisms such as: *Bacillus subtilis*, *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Candida albicans* and *Rhizopus sp.* between 10 - 40 mm. The minimum inhibitory concentration showed the methanolic fraction to be active against *Candida albicans* and *Rhizopus sp.* at the concentration of 6.25 g/ml and 3.25 g/ml respectively. The phytochemical screening revealed the presence of alkaloids, cardiac glycosides and terpenoids in all the solvents. Tannin was present in all the solvent fractions except hexane fraction. Saponin was not found in any of the solvents. The hexane-methanol interface of the partitioned solvents was sensitive to the anti-mycobacterial activity while other solvents showed resistance. The GC-MS and the chromatogram gave insight into the volatile components of the leaf extract. The findings reveals *Bidens pilosa* as a medicinal plant with potentials for the treatment of tuberculosis.
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