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Antimicrobial, Antioxidant and Cytotoxic Activities of Cleoma viscosa Linn. Crude Extracts

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Abstract : The bioactivity studies from the weed ethanolic crude extracts from leaf, stem, pod and root of wild spider flower; Cleoma viscosa Linn. were analyzed for the growth inhibition of 6 bacterial species; Salmonella typhimurium TISTR 5562, Pseudomonas aeruginosa ATCC 27853, Staphylococcus aureus TISTR 1466, Streptococcus epidermidis ATCC 1228, Escherichia coli DMST 4212 and Bacillus subtilis ATCC 6633 with initial concentration crude extract of 50 mg/ml. The agar well diffusion results found that the extracts inhibit only gram positive bacteria species; S. aureus, S. epidermidis and B. subtilis. The minimum inhibition concentration study with gram positive strains revealed that leaf crude extract give the best result of the lowest concentration compared with other plant parts to inhibit the growth of S. aureus, S. epidermidis and B. subtilis at 0.78, 0.39 and lower than 0.39 mg/ml, respectively. The determination of total phenolic compounds in the crude extracts exhibited the highest phenolic content was 10.41 mg GAE/g dry weight in leaf crude extract. Analyzed the efficacy of free radical scavenging by using DPPH radical scavenging assay with all crude extracts showed value of IC50 of leaf, stem, pod and root crude extracts were 8.32, 12.26, 21.62 and 35.99 mg/ml, respectively. Studied cytotoxicity of crude extracts on human breast adenocarcinoma cell line by MTT assay found that pod extract had the most cytotoxicity CC50 value, 32.41 µg/ml. Antioxidant activity and cytotoxicity of crude extracts exhibited that the more increase of extract concentration, the more activities indicated. According to the bioactivities results, the leaf crude extract of Cleoma viscosa Linn. is the most interesting plant part for further work to search the beneficial of this weed.

Keywords : antimicrobial, antioxidant activity, Cleoma viscosa Linn., cytotoxicity test, total phenolic compound
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