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Evaluation of the Antioxidant and Antimicrobial Activities of Clary Sage (Salvia sclarea L.)

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Abstract: The present work evaluates the antioxidant and antimicrobial activity of clary sage (CS) Salvia sclarea L. Antimicrobial, total antioxidant, DPPH radical scavenging, superoxide anion radical scavenging, hydrogen peroxide scavenging and metal chelating activities, reducing power, and total contents of phenolic compounds of dried herb samples extracted with chloroform and acetone were studied. The chloroform extract had stronger total antioxidant activity than the acetone extract and exhibited 93 and 68% inhibition of linoleic acid peroxidation, respectively. a-Tocopherol, quercetin, butylated hydroxyanisole and butylated hydroxytoluene were used as standard antioxidants. Antimicrobial activities of both CS extracts were examined by means of disk-diffusion methods with 11 microbial species (Bacillus megaterium NRS, Proteus vulgaris FMC 1, Listeria monocytogenes BRIE 1, Bacillus cereus FMC 19, Staphylococcus aureus FÜ, Bacillus brevis FMC 3, Klebsiella pneumoniae FMC 5, Micrococcus luteus LA 2971, Pseudomonas aeruginosa DSM 50071, Escherichia coli DM and Mycobacterium smegmatis CCM 2067) and 4 fungal species (Penicillum frequentans, Fusarium equiseti, Aspergillus candidus and Byssochlamys fulves). Both CS extracts were effective in inhibiting the growth of the organisms except for Escherichia coli DM. The antifungal activity of each of the above extracts is lower than the antimicrobial activity.

Key Words: Antioxidant activity, antimicrobial activity, clary sage, Salvia sclarea

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