

عنوان مقاله:

Chemical Analysis, Antioxidant, Antimicrobial and Enzyme Inhibitory Effects of *Daucus Virgatus* (Poir.) Maire
Essential oil from Algeria

محل انتشار:

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خلاصه مقاله:

Essential oils (EO) represent an important source of bioactive molecules and are widely used for their great efficacy relating to their different therapeutic properties. Maire, an aromatic and native plant spontaneously growing in the North-Eastern regions of Algeria, by analyzing the chemical composition of its essential oil and evaluating the antioxidant and antimicrobial activities, together with the assay of the enzyme inhibitory effects against α -glucosidase and cholinesterase. *Daucus virgatus* EO was extracted by hydrodistillation and analyzed by gaschromatography-mass spectrometry analysis (GC-MS). Twenty-one constituents accounting for 98% of the whole components were identified. β - pinene (77.9%) and α -pinene (7.6%) were the most abundant components. The antimicrobial activity against the pathogen microorganisms *Listeria innocua*, *Salmonella typhimurium*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Bacillus subtilis*, *Escherichia coli* and *Candida albicans* was investigated. The best antimicrobial effect was observed against *S. typhimurium* and *C. albicans*, which showed high sensitivity, with inhibition zones ranging between 27.3 and 25 mm; the minimum inhibitory concentrations were 15.63 and 31.25 μ g ml⁻¹, respectively. In the DPPH test, the essential oil showed a moderate antioxidant effect, with an IC₅₀ value of 39.61 mg ml⁻¹. *D. virgatus* EO exhibited an interesting inhibitory effect against α -glucosidase enzyme (IC₅₀ = 0.35 mg ml⁻¹) compared with the positive control Acarbose (IC₅₀ = 0.24 mg ml⁻¹), and a moderate inhibitory effect against cholinesterases enzymes, with IC₅₀ values of 0.33 and 0.20 mg ml⁻¹ for acetylcholinesterase and

butyrylcholinesterase, respectively. *D. virgatus* EO might be used as a promising source of natural products with potential antimicrobial, antihyperglycemic and anti-Alzheimer effects

کلمات کلیدی:

Daucus virgatus, Essential oil, Antimicrobial, Anti-cholinesterases, α -Glucosidase inhibition, Antioxidant

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