

PP16. Essential oil composition of *Salvia sclarea* L. aerial parts and its AChE inhibitory properties

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Previously, the hydrodistilled essential oils of the aerial parts of wild-growing *S. sclarea*, originating from two localities in Greece, were analyzed by GC-MS and it was found that the oils were rich in linalyl acetate, linalool and geranyl acetate [1]. The current study aims to provide information on the essential-oil composition of the aerial parts of *S. sclarea* from Turkey. The essential oil was obtained by hydrodistillation from air-dried aerial parts of the plant, collected in Turkey, using a Clevenger-type apparatus in the duration of 3 h. The essential oil yield was 0.23 mL per 100 g of plant material. The essential oil was diluted with *n*-hexane 1:10 (*v/v*) and used as such for GC-MS analysis. The essential oil was analyzed with an Agilent 5977 MSD GC-MS system operating in EI mode; injector and MS transfer line temperatures were set at 250 °C. Splitless injection was used in the analysis. Innowax FSC column (60 m x 0.25 mm, 0.25 µm film thickness) and helium as the carrier gas (1 mL/min) were used in GC-MS analyses. The oven temperature program was: 60 °C for 10 min and then raised to 220 °C at a rate of 4 °C/min, afterward the temperature was kept constant at 220 °C for 10 min and then raised to 240 °C at a rate of 1 °C/min. Mass spectra were recorded at 70 eV with the mass range *m/z* 35-425. Relative amounts of the separated compounds were calculated from the integration of the peaks in MS chromatograms. Identification of essential-oil components was carried out by comparison of their retention indices (RI), relative to a series of *n*-alkanes (C₅ to C₃₀), with the literature values, as well as by mass spectral comparison. The aerial parts essential oil of *S. sclarea* was found to contain linalyl acetate (9.8%), linalool (7.4%), germacrene D (6.0%), caryophyllene oxide (6.0%), β-caryophyllene (5.6%), α-terpineol (4.3%), and spathulenol (3.4%). The obtained results were in general accordance with the results given in the literature. Additionally, AChE-inhibitory property of the essential oil was investigated and the oil was found to inhibit AChE activity by 11.23 ± 0.003% (*n* = 3) at a concentration of 1 mg/mL.

References:

[1] Pitarokili, D. et al., 2002. J. Agr. Food. Chem. 50, 6688–6691.

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