FACTA UNIVERSITATIS
Series: **Physics, Chemistry and Technology** Vol. 16, N° 1, Special Issue, 2018, p. 171
49th International Symposium on Essential Oils (ISEO2018) • Book of Abstracts

49th ISEO

PP107. AChE-inhibitory properties and the chemical composition of *Salvia aethiopis* L. essential oil

Arkan Yashar[1], *Sibel Barbaros*[2]*, Yasemin Yücel Yücel[3], Mustafa Alkan[4], Kaan Polatoğlu[5]

Keywords: essential oil, *Salvia aethiopis*, AChE, germacrene D, α-copaene

Previously, the hydrodistilled essential oil of the aerial parts of *Salvia aethiopis* L. (Lamiaceae) from Erzurum–Turkey was reported to contain germacrene D (29.0%), α-copaene (19.8%), β-cubebene + β-elemene (9.9%), bicyclogermacrene (9.3%), δ-cadinene (8.7%), and β-caryophyllene (7.3%) [1]. The current study aims to provide information on the essential-oil composition of the aerial parts of *S. aethiopis* from another location in Turkey. The plant material used in this study was collected from Tokat in June 2017. The essential oil was obtained by hydrodistillation (3 h) of air-dried aerial parts using a Clevenger-type apparatus, in a yield of 0.09 mL per 100 g of plant material. The essential oil was diluted with *n*-hexane 1:10 (*v/v*) and used as such for the 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, afterwards 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 (C_5 to C_{30}), with the literature values, as well as by mass spectral comparison. Eighty-one compounds were identified comprising 90.1% of the detected oil constitutes. The main components of the oil of *S. aethiopis* from Tokat were α-copaene (17.8%), germacrene D (12.7%), bicyclogermacrene (11.8%), β-caryophyllene (6.9%), and δ-cadinene (4.3%). The results agreed generally with the literature ones except for the variation in the percentage of the main components. Additionally, AChE-inhibitory properties of the essential oil were investigated and the oil was demonstrated to inhibit 46.4±0.8% (n = 3) of AChE activity, at 1 mg/mL.

Reference:
[1] Güllüce, M. et al., 2007. Turk. J. Biol. 30, 231–233.

[1]Altinbas University, School of Pharmacy, Istanbul, Turkey; [2]Altinbas University, Faculty of Pharmacy, Department of Analytical Chemistry, Istanbul, Turkey; [3]Altinbas University, Faculty of Pharmacy, Department of Biochemistry, Istanbul, Turkey; [4]Plant Protection Central Research Institute, Ankara, Turkey; [5]Altinbas University, Natural Product Research & Development Centre, Istanbul, Turkey.
*Corresponding author: sibel.barbaros@altinbas.edu.tr