

PP102. Composition and AChE-inhibitory properties of *Hypericum calycinum* L. essential oil

Semra Ekinici^{1*}, Yasemin Yücel Yücel², Hüseyin Servi³, Kaan Polatoğlu⁴

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The genus *Hypericum* (Hypericaceae) is represented by 94 taxa in Turkey. *Hypericum* species are very well known due to their uses in folk medicine. There is a considerable number of studies done on *Hypericum* species available in the literature. Previously, the essential-oil composition of *Hypericum calycinum* L. obtained by microdistillation was reported. According to this report, the main components of the oil were α -pinene (24.2%), β -pinene (14.2%), myrtenal (4.5%), verbenone (4.5%), and *trans*-pinocarveol (4.2%) [1]. In the current study, the essential-oil composition *H. calycinum* collected from Şile–İstanbul was determined. The essential oil was obtained by hydrodistillation from aerial parts of the plant with a Clevenger apparatus for 3 h. The essential oil yield was 0.7% (v/w). The oil was dried over anhydrous Na₂SO₄. The essential oil was diluted 1:10 (v/v) in *n*-hexane and analyzed by 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 μ m 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 (C₅ to C₃₀), with the literature values, as well as by mass spectral comparison. Fifty-four compounds were identified that represented 98.9% of the detected GC-peak areas. The main components of the oil were β -pinene (40.8%), α -pinene (17.7%), limonene (11.9%), and germacrene D (3.3%). The amounts of α - and β -pinene quantified in the oil obtained from Istanbul were found to be different from the previously reported for *H. calycinum* oil. The essential oil obtained from *H. calycinum* originating from Istanbul was characterized by a very high amount of β -pinene. The essential oil caused an 86 \pm 1% (*n*=3) AChE activity inhibition at the concentration of 5 mg/mL.

Reference:

[1] Erken, S. et al., 2001. Chem. Nat. Compd. 37, 434–438.

¹Altınbas University, School of Pharmacy, Istanbul, Turkey; ²Altınbas University, Faculty of Pharmacy, Dept. of Biochemistry, Istanbul, Turkey; ³Altınbas University, Faculty of Pharmacy, Dept. of Pharmaceutical Botany, Istanbul, Turkey; ⁴Altınbas University, Natural Product Research & Development Centre, Istanbul, Turkey.

*Corresponding author: semraekincii@hotmail.com