

MINOR PHENOLIC COMPOUNDS FROM *Teucrium hyrcanicum*

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Teucrium hyrcanicum L. (Lamiaceae) is an endemic species, the name of which is derived from the ancient Latin name for the Caspian Sea, *Marum Hyrcanum*. The chemical composition and hypotensive and coagulatory activities of flavonoids from this plant have been reported [1-3].

In continuation of research on biologically active flavonoids, a minor flavonoid component (cyanidin reaction and IR and UV spectra) was isolated from the ethylacetate fraction of the methanol extract of *T. hyrcanicum* [4] by column chromatography (CC) over polyamide with subsequent CC over silica gel L (40/100 μ) with elution by CHCl_3 (3% MeOH).

Compound **1**, $\text{C}_{16}\text{H}_{12}\text{O}_6$, fine light-yellow needle-like crystals, mp (subl. 260°C) 290-291°C, R_f 0.26 (Silufol UV-254, CHCl_3 : CH_3OH , 19:1, system 1), 0.31 (CHCl_3 : CH_3OH , 9:1, system 2). UV spectrum (CH_3OH , λ_{max} , nm): 219, 232 sh, 287, 333 (log ϵ 4.51, 4.32, 4.38, 4.45). Mass spectrum (EI, 70 eV, m/z , I_{rel} , %): 300 (100) $[\text{M}]^+$.

Comparison of TLC using system 1 found that **1** is colored brown by aqueous FeCl_3 (9%) and has a chromatographic mobility between those of cirsiol and pedalitin.

The UV spectrum of **1** with ionizing and complexing reagents according to the literature [5]: (+MeONa) 231, 253 sh, 314 sh, 375 (log ϵ 4.37, 4.16, 4.26, 4.52); (+AcONa) 237, 287, 363, 382 (10') 237, 286, 341, 382 sh; (+AcONa + H_3BO_3) 232, 286, 337; (+ AlCl_3) 232, 303, 366; (+ AlCl_3 + HCl) 238, 301, 361; demonstrated the presence of 4'-OH, 5-OH, and 6-OH groups [6, 7] in addition to a substituted hydroxyl on C-7.

The mass spectrum of **1** contains fragments with m/z 182 (4) (ring A), 121 (6), 119 (12), and 118 (6) (ring B). The weakness of the quinoid ions with m/z 181 (3), 167 (3), 153 (5.5), 152 (9), 139 (9), and especially the ions for $[\text{M} - \text{CH}_3]^+$ with m/z 285 (1) and $[\text{M} - \text{CH}_3\text{CO}]^+$ with m/z 257 (7) and the corresponding ions for ring A demonstrate the important difference of a flavone with a 6-OCH₃ (hypsudulin) and a 3-OCH₃ and 8-OCH₃ from that with a 7-OCH₃ [8] and confirm that the structure of **1** is 5,6,4'-trihydroxy-7-methoxyflavone (7-methylscutellarein).

7-Methylscutellarein was observed in the genus *Teucrium* for the first time.

The more polar CHCl_3 fractions (6% CH_3OH) afforded pedalitin, luteolin, caffeic acid, and 3,4-dihydroxy- β -phenylethanol, which were identified by mixed melting points with authentic samples, comparative TLC, and mass spectrometry.

The methylated flavones pedalitin (5,6,3',4'-tetrahydroxy-7-methoxyflavone) [4] and 7-methylscutellarin that were isolated from *T. hyrcanicum* differ from each other by one hydroxyl group, analogously to the pair cirsiol and cirsimaritin from *T. polium* L. [9]. The more oxidized pedalitin and cirsiol (6-hydroxyluteolin derivatives) dominate quantitatively over the scutellarin derivatives.

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