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QUERCETAGETIN 6,7,3′,4′-TETRAMETHYL ETHER: A NEW FLAVONOL FROM *ARTEMISIA ANNUA*

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Plant. Artemisia annua L., voucher No. 220-a. Faculty of Sciences, Department of Botany, Belgrade. *Source.* South of Belgrade. *Previous work.* Artemisia ketone and iso-artemisia ketone [1], pontica epoxide [2], arteannuin B [3], arteannuin A [4].

Present work. A $CHCl_3$ extract of the whole plant yielded after chromatography a new polar flavonol (**1**), yellow crystals, mp 171–172°. M^+, *m/e* 374, $C_{19}H_{18}O_8$. The compound contained a free 3-OH group as shown by both UV-spectrum (λ_{max} at 358 nm) and shift with $AlCl_3$ and the pattern of mass fragmentation (characteristic peak of flavonol *m/e* 165 belonging to $(H_3CO)_2$–$C_6H_3C{\equiv}O$ fragment, and also the peaks at *m/e* 187, *m/e* 178, *m/e* 173, etc. [5]. The presence of a free 5-OH group was indicated by the UV spectrum (λ_{max} at 265 nm [6]), and the positions of the remaining 4 –OMe groups, was proved by NMR. Methylation of (**1**) with CH_2N_2 in MeOH gave a hexamethyl ether identical in all respects (mmp, TLC, IR, NMR, UV, MS) to the known quercetagetin hexamethyl ether [7], obtained from an authentic source. Compound **1** is thus 6,7,3′,4′-tetra-*O*-methyl quercetagetin.

EXPERIMENTAL

The dried (28–30°), powdered plant, was extracted with $CHCl_3$ at room temp. for 1 week. The extract was worked up in the usual manner [8], leaving oily residue which was chromatographed on Si gel. Compound **1** was obtained from the C_6H_6–EtOAc eluates (7:3) and recrystallized from MeOH, mp 171–172° (Found: C, 61·0; H, 5·1. $C_{19}H_{18}O_8$ requires: C, 61·0; H, 4·9). UV λ_{max} (MeOH) 210, 265, 352; (NaOMe) 210, 272, 403; ($AlCl_3$) 210, 272, 390; ($AlCl_3$–HCl) 210, 272, 388 nm. NMR ($CDCl_3$): δ 3·89, 3·95, 3·98 and 4·00 (4 *s*, four OMe groups), 6·50 (*s*, H-8), 7·01 (*dd*; 5′-H; *J* 4 Hz), 7·70 (*m*, 2′-H and 6′-H; *J* 9 Hz). MS: *m/e* 374 M^+, other prominent peaks at 359, 355, 341, 331, 231, 187, 178, 165, 136, and 105. The hexamethyl ether of quercetagetin was obtained on methylation, mp 140° (lit. 141–142° [7]), the IR, UV, NMR spectra of which were essentially superimposable with those of an authentic specimen.

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