Chemistry of Natural Compounds, Vol. 30, No. 2, 1994

FLAVONOID FROM *Scutellaria adsurgens*

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UDC 547.972

The epigeal part of *Scutellaria adsurgens* M. Pop, gathered in 1988 in Kazakhstan (Chimkent province, Western Tien-Shan, environs of the village of Kel'tymashat, on limestone outcrops) in the flowering period has been investigated.

The polyphenol complex was extracted from a sample with 70% aqueous ethanol and was first separated into fractions by the use of various solvents. The flavonoids were obtained from the extract by treatment with chloroform, and then the chloroform fraction was was chromatographed on a column of silica gel with the use of chloroform and a mixture of chloroform with ethanol as eluents. Thus chromatographic separation led to the isolation of flavonoids (**1**)-(**4**). The identification of compounds (**1**)-(**3**) with the aid of IR, UV, and PMR spectra and physical constants confirmed the presence in this species of chrysin, apigenin, and luteolin, which have been detected previously in a sample collected in the flora of the Uzbek SSR [1].

Flavonoid (**4**), mp 242°C, $C_{18}H_{16}O_8$, formed a triacetyl derivative with mp 189°C (ethanol). PMR spectrum (DMSO, δ, ppm): 3.82 (s, 6H, 2 × OCH_3); 4.00 (s, 3H, OCH_3); 6.34 (s, H-3); 6.45 (d, 2H, J = 8 Hz, H-3′, H-5′); 7.15 (t, J = 8 Hz, H-4′); 10.00 (broadened singlet, 2H, OH-2′,OH-6′); 12.70 (s, H. OH-5), where the signals at 6.45 and 7.15 ppm are characteristic for a 2′,6′-substituted ring *B* [2, 3]. This type of substitution of ring *B* is also in harmony with the UV spectrum: λ_{max}^{EtOH} 272, 317, 350 (logε 3.77; 3.41; 3.19). The bathochromic shift of the absorption maximum in the spectrum of (**4**) with NaOAc showed the substitution of the OH group at C-7.

Thus, the most probable structure for (**4**) is 2′,5,6′-trihydroxy-6,7,8-trimethoxyflavone*. The signals of the carbon atoms in the ^{13}C NMR spectrum correlated with the carbon aoms of a flavonoid having analogous substitution [4] and confirmed the proposed structure: 60.75; 61.64; 61.91 (OCH_3 × 3); 106.46 (C-10); 106.74 (C-3′, C-5′); 108.19 (C-1′); 111.88 (C-3); 132.35 (C-4′); 132.7 (C-6); 135.86 (C-8); 146.45 (C-5); 148.63 (C-9); 152.62 (C-7); 156.90 (C-2′, C-6′); 163.08 (C-2); 182.7 (C-4). This is the first time that 2′,5,6′-trihydroxy-6,7,8-trimethoxyflavone has been isolated from *Scutellaria adsurgens*. Its first source was the plant *Scutellaria alpina* [5].

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*Substance (**4**) gave no depression of the melting point in a mixture with a sample of 2′,5,6′-trihydroxy-6,7,8-trimethoxyflavone kindly supplied by Dr. Tomimori (Japan).

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0009-3130/94/3002-0263$12.50