

THE FLAVONOIDS OF *Jasione montana*
AND *Melittis sarmatika*

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From the epigeal part of *Jasione montana* L. (sheepsbit jasione) in the full flowering phase we have previously [1] isolated two substances of flavonoid nature: (I) with mp 320-326°C (decomp.) and (II) with mp 240-245°C (decomp.). The present paper gives the results of a further study of these compounds.

Substance (I), composition $C_{15}H_{10}O_6$, mol. wt. 286 (mass spectrometry), λ_{\max} (absolute ethanol) 210, 255, 268 (shoulder), 350 nm (log ϵ 4.55, 4.25, 4.22, 4.31); tetraacetate with the composition $C_{23}H_{10}O_{10}$, mp 223-225°C.

The results of a comparison of the physicochemical constants with literature data [2, 3], have enabled it to be identified as 3',4',5-7-tetrahydroxyflavone (luteolin).

Substance (II), composition $C_{21}H_{20}O_{11} \cdot 3/2 H_2O$, λ_{\max} (absolute ethanol) 209, 258, 352 nm (log ϵ 4.49, 4.26, 4.30). The absence of a bathochromic shift of the 258-nm band on the addition of sodium acetate (λ_{\max} 212, 258, 355) shows the substitution of the 7-OH group [3]. Acid hydrolysis formed equal amounts of glucose and an aglycone with mp 319-326°C, identified as luteolin.

In the NMR spectrum of substance II (DMSO), the signals of the protons of rings B and C are practically unchanged in comparison with those of the aglycone: δ 6.93 (H-5'), 7.43 (H-2'), 7.48 (H-6'), and 6.76 ppm (H-3). The signals of ring A are shifted downfield to δ 6.47 (H-6) and 6.81 ppm (H-8, doublets $J=2$ Hz), which is characteristic for compounds in which the hydrogen of the 7-OH group has been replaced by a sugar residue. The broad signal with δ 5.01 ppm ($J=6$ Hz) of the proton at C-1 of the glucose shows the β configuration of the glycosidic bond [2].

On the basis of the facts given, substance (II) was identified as luteolin 7-O- β -D-glucoside, as was confirmed by a direct comparison of the substances isolated with samples from E. T. Oganesyana (Pyatigorsk).

Melittis sarmatika Klok in the full-flowering phase had earlier [1] yielded coumarin with the composition $C_9H_6O_2$, mp 68-70°C (yield 0.93%) and a flavonoid in the form of light yellow crystals with mp 239-245°C (decomp.) giving no depression of the melting point with substance (II) from *J. montana*. Hydrolysis and acetylation of the aglycone gave similar products.

Thus, luteolin and luteolin 7-O- β -D-glucoside have been isolated from the herb *Jasione montana* L. and coumarin and luteolin 7-O- β -D-glucoside from the herb *Melittis sarmatika* Klok.

LITERATURE CITED

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