FLAVONOIDS OF Astragalus dasyanthus

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Kaempferol and quercetin have previously been isolated from the epigeal part of Astragalus dasyanthus Pall. [1]. Continuing an investigation of the flavonoids of this species of Astragalus, we have isolated another two compounds – isorhamnetin and astragaloside.

Isorhamnetin, $C_{16}H_{12}O_7$, mp 302-305°C, which was identified on the basis of its IR, UV, and NMR spectra and by comparison with an authentic sample, is a minor component, which is always present in the raw material obtained from the cultivated plant.

Astragaloside, $C_{28}H_{32}O_{17} \cdot H_2O$, mp 194-197°C, λ_{max} 255, 265, 364 nm. Acid hydrolysis of the compound gave the aglycone $C_{16}H_{12}O_7$, mp 302-305°C, identical with isorhamnetin. D-Glucose was found in the mother liquor after hydrolysis. The NMR spectrum of the trimethylsilyl derivative of the glycoside investigated had the following signals: doublet at 7.68 ppm (1H), J = 2.5 Hz (H-2'); quartet at 7.34 ppm, J_1 = 2.5 Hz, J_2 = 8 Hz (1H), due to the signal from H-6'; doublet at 6.80 ppm (1H), J = 8 Hz (H-5'), two doublets at 6.55 and 6.24 ppm (1H), J = 2.5 Hz (H-8 and H-6); doublet at 5.86 ppm (1H), J = 9 Hz, relating to the signal of the proton of the glycosidic center of β-glucose in position 3 of isorhamnetin; doublet at 4.84 ppm (1H), J = 9 Hz, due to the proton of the glycosidic center of β-glucose attached in position 6 of glucose; a singlet at 3.82 ppm (3H) relating to the signal of a methoxy group; and signals in the 3.2-3.7-ppm region corresponding to 12 glucose protons.

The facts mentioned indicate that the substance is isorhamnetin 3β-glucobioside, which has been described previously under the name of astragaloside [2].

LITERATURE CITED

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