QUERCETIN GLYCOSIDES FROM Onobrychis sosnowskyi AND O. kachetica

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By paper chromatography we have established that the leaves of O. sosnowskyi Grossh. contain six substances of flavonoid nature. The combined flavonoids were obtained from an aqueous ethanolic extract of the raw material, which was then purified and separated on Sephadex G-75. This led to the isolation of four individual flavonoids: A, B, C, and D.

Similarly, flavonoid A was isolated from the leaves of O. kachetica Boiss., and five flavonoids from the flowers. (Four of them were kaempferol derivatives [1] and the fifth flavonoid, E, a quercetin glycoside.)

To determine the nature of these compounds we studied their physicochemical properties and those of the products of their hydrolysis. Their R_f values (on paper chromatography in various solvent systems in the presence of standard flavonoids), their melting points, and their UV and IR spectra were determined.

From the products of acid hydrolysis we isolated and identified the aglycones. The acid aqueous filtrates remaining after the separation of the aglycones were neutralized on AV-17 anion-exchange resin and evaporated, and the nature of the carbohydrates was determined. The position of attachment of the sugar residues was found by stepwise hydrolysis and also by UV spectroscopy with ionizing and complex-forming additives.

Flavonoid A from O. sosnowskyi (mp 216-217°C, λ_{max}^{init} 255, 362 nm) is quercetin 3-glucoside (isoquercitrin) [2].

Flavonoid B (mp 186-187°C, λ_{max}^{init} 256, 359 nm, $[\alpha]_D^{20}$ −39.4°) is quercetin 3-rutinoside (rutin).

Flavonoid C (mp 206-207°C, λ_{max}^{init} 255, 360 nm) was characterized as quercetin 3-β-L-arabinofuranoside-7-β-D-glucopyranoside (ochroside) [3].

Flavonoid D was not identified.

Flavonoid A from the leaves of O. kachetica (mp 223-224°C, λ_{max}^{init} 259, 354 nm) proved to be quercetin 3-glucoside-7-rhamnoside [4].

Flavonoid E from the flowers of O. kachetica (mp 184-185°C, λ_{max}^{init} 256, 354 nm) was identified as quercetin 3-rutinoside (rutin).

LITERATURE CITED

1. I. I. Moniava and É. P. Kemertelidze, Khim. Prirodn. Soedin., 7, 528 (1971).
2. I. M. Mukhamed'yarova, Khim. Prirodn. Soedin., 4, 131 (1968).
3. G. N. Zemtsova, V. A. Bandyukova, and A. L. Shinkarenko, Khim. Farmats. Zh., 2, No. 2, 29 (1968).
4. K. Jasques, Phytochemistry, 7, 1205 (1968).

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