FLAVONE GLYCOSIDES OF SOME SPECIES OF THE GENUS Thymus

A. V. Simonyan

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We have previously reported the flavone aglycones of some representatives of the genus Thymus L. growing in the Caucasus [1].

From aqueous extracts of Thymus nummularius Bieb., Th. marschallianus Willd., and Th. collinus Bieb., by chromatography on polyamide sorbent with mixtures of ethanol and water containing increasing concentrations of ethanol, we have isolated two individual compounds which we have provisionally called substances (I) and (II).

Substance (I), with the composition $C_{21}H_{20}P_{10}$, forms a yellow crystalline powder with mp 178-179°C (50% ethanol), $[\alpha]_D^{20}$ −81° (c 0.1; methanol). UV spectrum: λ_{max} 270, 366 nm. Its quantitative acid hydrolysis formed equimolecular amounts of apigenin and D-glucose.

IR spectroscopy showed the pyranose form of the D-glucose (1095, 1035, 1010 cm^{-1}) and the β configuration of the glycosidic linkage, which was confirmed by hydrolysis with the β-hydrolase from the fungus Aspergillus oryzae.

The facts given, and also a mixed melting point enabled substance (I) to be identified as apigenin 7-O-β-D-glucopyranoside [2].

Substance (II), with the composition $C_{21}H_{20}O_{11}$, has mp 256-258°C (from aqueous acetone); UV spectrum: λ_{max} 257, 268, 350 nm. The quantitative acid hydrolysis of the substance formed luteolin and D-glucose (1:1). The IR spectrum showed the pyranose form of the D-glucose and the β configuration of the glycosidic linkage, which was confirmed by enzymatic hydrolysis with the β-hydrolase from the fungus Aspergillus oryzae.

These facts show that substance (II) is luteolin 7-O-β-D-glucopyranoside, and a mixture with an authentic sample of this substance gave no depression of the melting point.

LITERATURE CITED

1. A. V. Simonyan and V. I. Litvinenko, Rast. Res., 4 (1971).
2. V. I. Litvinenko and I. T. Zoz, Rast. Res., 4 (1969).

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