FLAVONOIDS OF Dracocephalum nutans

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Five flavonoids have been found in the herbage of Dracocephalum nutans L. by two-dimensional chromatography on paper. Two substances of flavonoid nature have been isolated from an ethanolic extract (70% ethanol) by chromatography on a polyamide sorbent.

The first substance had the composition $C_{21}H_{20}O_{10}$, mp 228-232°C, R_f 0.2 (15% acetic acid), UV spectrum: λ_{max} (ethanol) 338, 269 nm. Acid hydrolysis gave the aglycone, which was identified as apigenin, and D-glucose. The IR spectrum of the glucoside showed characteristic bands at (cm^{-1}) 1080, 1050, and 780 (the vibrations of the pyranose ring of a sugar), and 890 cm^{-1} – the β configuration of a glycosidic bond, which was confirmed by the hydrolysis of the glycoside by rhamnodiastase [1, 2].

On the basis of the above facts and the UV spectra with complex-forming and ionizing additives, the substance was characterized as apigenin 7-β-D-glucopyranoside (cosmiin) [3].

The second substance had the composition $C_{21}H_{20}O_{11}$, mp 239-243°C, R_f 0.10 (15% acetic acid), UV spectrum: λ_{max} (ethanol) 352, 268, 257 nm. In the products of acid hydrolysis were found an aglycone, identified as luteolin, and D-glucose. The results of IR spectroscopy and enzymatic hydrolysis showed the pyranose form of the sugar and the presence of β-glycosidic bond. The UV spectra with complex-forming and ionizing additives and the results of a direct comparison of the substance with luteolin 7-β-D-glucopyranoside (cynaroside) confirmed their identity [4].

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