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FLAVONOID GLYCOSIDES OF *Dracocephalum multicaule*

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Continuing an investigation of the epigeal part of *Dracocephalum multicaule* Montbr. et Auch. ex Benth., family *Lamiaciae* [1, 2], from the ethyl acetate fraction of a methanolic extract of the plant, by column chromatography (CC) on silica gel (Czechoslovakia, 40/100 mesh) in the solvent system chloroform–methanol (10%), we have isolated the flavonoid glycosides (I) and (II) and a mixture of the unresolved glycosides (I) and (III), which was acetylated and the resulting peracetates of (I) and (III) were separated by CC on silica gel in the solvent system chloroform–ether (15%).

Compound (I) had the composition $C_{21}H_{20}O_{10}$, mp 188-190°C (methanol), λ_{max}^{MeOH} 269, 333 nm, R_f 0.39 (Silufol UV-254; ethyl acetate–methanol–water (9:1:0.5). Hexaacetate with the composition $C_{33}H_{32}O_{16}$, mp 181-184°C (chloroform).

Compound (II) had the composition $C_{21}H_{20}O_{10}$, mp 283-295°C (ethyl acetate–methanol, λ_{max}^{MeOH} 261, 333 nm, R_f 0.27. The heptaacetate of compound (III) had the composition $C_{35}H_{34}O_{18}$, mp 242-244°C (chloroform–ether).

The compounds isolated were identified by the use of qualitative reactions, the results of chemical transformations (acetylation followed by the acid hydrolysis of the glycoside peracetates and identification of the sugars and aglycons by comparison with authentic specimens through PC, TLC, and melting points), the IR and UV (with diagnostic reagents) spectra for flavonoids (I) and (II), and the ^1H and ^{13}C NMR and mass spectra of the flavonoids and their peracetates.

The results obtained permitted the glycosides isolated to be identified as cosmosin (apigenin 7-O-β-D-glucopyranoside), apigenin 5-glucoside (apigenin 5-O-β-D-glucopyranoside) and cynaroside (luteolin 7-O-β-D glucopyranoside) [3], which have not previously been isolated from this plant.

The above-mentioned glycosides were also detected chromatographically in the voluminous deposit (yield 0.9%) from the ethyl acetate and polar (aqueous) fractions of the methanolic extract of the plant.;

REFERENCES

1. G. B. Oganesyan, V. A. Mnatsakanyan, and É. Gach-Baitts, Arm. Khim. Zh., **42**, No. 11, 717 (1989).
2. G. B. Oganesyan and V. A. Mnatsakanyan, Khim. Prir. Soedin., No. 6, 719 (1992).
3. L. K. Klyshev, V. A. Bandyukova, and L. S. Alyukina, Plant Flavonoids [in Russian], Nauka, Alma-Ata (1978), p. 59; A. A. Shamyrina, V. A. Peshkova, and N. I. Shergina, Khim. Prir. Soedin., No. 2, 255 (1975).

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