COUMARINS OF Seseli foliosum

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We have investigated the plant *Seseli foliosum* (Somm. et Lev.) Manden, family Apiaceae, growing in the Georgian SSR for its coumarin content. The purified total coumarins isolated from the air-dry roots by the usual method were separated on a column of silica gel. Hexane, benzene, ether, and chloroform were used successively as the mobile phases.

The combined coumarins from the epigeal part were first purified on a column of Sephadex LH-20. Here, the organic layer of the chloroform-butan-1-ol-water (2:1:2) system was used for swelling the adsorbent and as the inorganic phase for elution.

From the combined coumarins of the roots of the plant we obtained three individual substances (I, II, and III); from the seed, one (IV); and from the epigeal part, two (IV) and (V).

The simultaneous separation of the combined material from the roots and epigeal part was carried out on a Du Pont M8843 high-performance liquid chromatograph with a UV detector at a wavelength of 280 nm using a 4.6 mm (internal diameter) by 250 mm column with the sorbent Zorbax C-8 (reversed phase).

Separation was performed under the conditions of gradient elution beginning with the methanol-hexane (99:1) system and ending with 2% hexane. The rate of flow of the mobile phase was 0.5 ml/min, power of the detector 0.16 D, temperature 35°C. For separation, 2 mg of the purified total material was dissolved in 5 ml of methanol and deposited on a column in $50-\mu l$ portions. The retention times of the coumarins were (min): (I) 6.7, (II) 7.0-7.1, (III) 8.1-8.2, (IV) 6.5, (V) 6.0.

Substance (I): C₁₅H₁₆O₃, mp 86-88°C (from methanol).

Substance (II): C15H1603, mp 83-84°C.

Substance (III): C₂₁H₂₂O₇, mp 165°C.

Substance (IV): $C_{10}H_8O_4$, mp 203-204°C.

Substance (V): $C_9H_6O_3$, mp 230-231°C.

From their elementary compositions, physicochemical constants, and NMR, IR, and UV spectra, and also from the absence of depressions of the melting points of mixtures with authentic samples, substance (I) was identified as suberosin, (II) as osthole; (III) as edultin, (IV) as scopoletin, and (V) as umbelliferone [1-5].

D-Mannitol and sucrose were isolated as accompanying substances from the epigeal part of S. foliosum.

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