

COUMARINS OF *Ferulago turcomanica*

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From the roots of *Ferulago turcomanica*, Schischk. collected in the Turkmen SSR, by chromatography on a column of alumina, we have isolated five crystalline substances of coumarin nature.

Substance (I), $C_{15}H_{16}O_3$, mp 84–85.5°C, on oxidation with chromium trioxide in glacial acetic acid formed acetone and an acid with the composition $C_{12}H_{10}O_5$, mp 252–254°C. A comparison of the physicochemical properties and the IR spectrum of the acid with those of ostholic acid showed their identity [1]. The results obtained on oxidation show the identity of (I) with osthole; the IR spectra of (I) and of osthole also coincide [2].

Substance (II), $C_{16}H_{14}O_4$, mp 107–108.5°C, was identical in respect of its IR spectrum, composition, and melting point with isoimperatorin. A mixture with an authentic sample of isoimperatorin gave no depression of the melting point.

Substance (III), $C_{16}H_{14}O_5$, mp 141–142.5°C (ν_{\max} 1735, 1625, 1610, 1590, 1560 cm^{-1}), is also a furocoumarin. When (III) was heated with 10% sulfuric acid, a substance $C_{16}O_{14}O_5$ with mp 144–146°C identified as isooxypeucedanin was formed.

A comparison of the IR spectra of (III) and oxypeucedanin showed their identity. A mixture with a sample of oxypeucedanin gave no depression of the melting point.

Substance (IV) has the composition $C_{16}H_{16}O_6$, mp 131–133°C. When an ethanolic solution of (IV) was heated with fuming HCl, it was converted into isooxypeucedanin, identified by a comparison of physicochemical properties and also from the absence of a depression of the melting point with an authentic sample of isooxypeucedanin. These results and a comparison of the IR spectra of (IV) and of oxypeucedanin hydrate showed their identity.

Substance (V), $C_{16}H_{14}O_5$, mp 143–145°C, was isolated in very small amount. From its IR spectrum and the absence of a depression of the melting point in admixture with an authentic sample, (V) was identified as isooxypeucedanin.

The IR spectra were taken on a UR-20 spectrophotometer in paraffin oil.

LITERATURE CITED

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