OXYPEUCEDANIN HYDRATE ACETONIDE — A NEW COMPONENT FROM *Peucedanum turcomanicum*

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During the study of the chemical composition of a chloroform extract from the endemic species *Peucedanum turcomanicum* collected in the Turkmen SSR, we have isolated a substance with the composition $C_{19}H_{20}O_6$ (I) with mp 157.5-159°C (from ethanol). This substance exhibits properties characteristic for linear furocoumarins and corresponds in its physicochemical constants to oxypeucedanin hydrate acetonide (previously [1] synthesized by one of us), as follows from the results of investigations of the IR and PMR spectra of (I), and also from chemical transformations.

The IR spectrum of (I) has characteristic absorption bands at (cm^{-1}) 1725 (CO of an α-pyrone), 1625, 1610, 1585 (aromatic nucleus), 1380 and 1345 (gem-dimethyl grouping).

In the PMR spectrum of (I) (Fig. 1) the signals of the protons of a linear furocoumarin nucleus substituted in position 5 can be seen in the weak field, and in the strong field

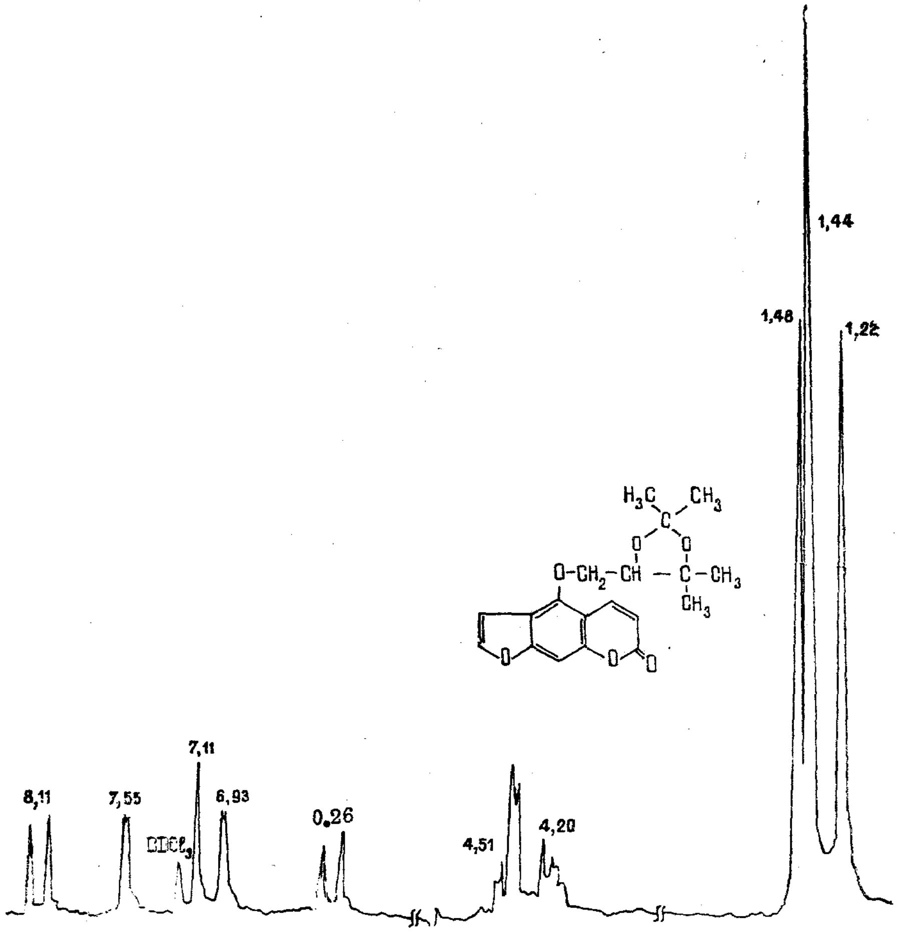

Fig. 1. PMR spectrum of oxypeucedanin hydrate acetonide in $CDCl_3$; 0 — TMS.

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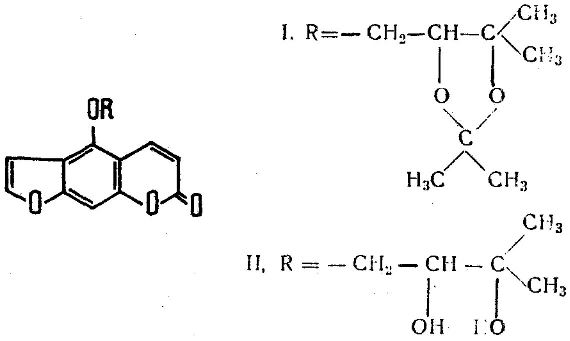
there are the signals of the protons of four methyl groups attached to quaternary carbon atoms with hydroxy groups (singlets at 1.22 and 1.48 ppm, 3 H each, and 1.44 ppm, 6 H) and of a $Ar{-}O{-}CH_2{-}CH{-}$ grouping (multiplet at 4.20-4.51 ppm, 3 H). These facts agree completely with the structure of oxypeucedanin hydrate acetonide, as was confirmed by the results of the treatment of (I) with a mixture of acetic and hydrochloric acids in a ratio 3:1. This led to the formation of oxypeucedanin hydrate (II), $C_{16}H_{16}O_6$, mp 132-133°C and of isooxypeucedanin (III), $C_{16}H_{14}O_5$, with mp 145-146°C, both of which were identified by their IR and PMR spectra.

Thus, the compound investigated must be regarded as oxypeucedanin hydrate acetonide (I). This is the first time that it has been found in nature.



The IR spectra were taken on a UR-20 (in paraffin oil) and the PMR spectra on a HX-90 spectrometer (in $CDCl_3$, 0 — TMS). Melting points were determined on a Kofler block.

LITERATURE CITED

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COUMARINS FROM THE ROOTS OF Prangos arcis-romanae

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We have analyzed for the first time the qualitative composition of the combined coumarins obtained by Svendsen's method [1] and of an ethanolic extract from the roots of *Prangos arcis-romanae* Boiss. et Huet collected in the budding stage on Mount Arganats in the environs of the village of Sevan, Armenian SSR. The roots contained 1.20% of coumarins.

The coumarins were identified (with markers) by gas–liquid chromatography in a column (*l* 1.5 m) containing the stationary phase OV-17 (3%), as previously [2], and also by paper chromatography in two systems [3] before and after treatment with solutions of alkali and diazo compounds.

The following natural coumarins were detected in the roots of *P. arcis-romanae*: osthole, meranzin, meranzin hydrate, and suberosin. The following furocoumarins were found: psoralen and its 5- and 8-substituted derivatives: bergapten (traces), isoimperatorin, oxypeucedanin, oxypeucedanin hydrate, pranferol (traces), an isomer of pranferol (traces), xanthotoxin (traces), and imperatorin. Of linear dihydrofurocoumarins we identified marmezin and pranchimgin (traces).

Osthole is the main component of the total coumarins from roots of *P. arcis-romanae*.

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