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SESQUITERPENE LACTONES OF *Pseudohandelia umbellifera*

F. F. Urmanova, Sh. Z. Kasymov,
and G. P. Sidyakin

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Pseudohandelia umbellifera (Boiss.) Tzvel., family Compositae, is a plant that grows widely in Uzbekistan.

Flowerheads of *P. umbellifera* collected in May 1976 in the Dzhizak oblast in the budding flowering phase were extracted with chloroform. The concentrated extract was dissolved in ethanol and the solution was diluted with water to give a 60% ethanolic solution. After a day, the precipitate that had deposited was separated off. The combined lactones were extracted with benzene from the filtrate after it had been treated with petroleum ether (to eliminate essential oil). The mixture of substances isolated was separated by chromatography on a column of alumina (activity grade IV) in a ratio of 1:10.

By elution with benzene-hexane (7:3) substance (I) was isolated with the composition $C_{15}H_{20}O_3$, mp 191°C (previously heated metal block); R_f 0.51 in the chloroform-methanol (8.5:1.5) system on "Silufol" plates (chromogenic agent 0.5% solution of vanillin in concentrated sulfuric acid); M^+ 248. IR spectrum: λ_{\max}^{KBr} 3490 cm^{-1} (OH), 1750 cm^{-1} (carbonyl of a γ -lactone ring conjugated with an exomethylene group), 1665 and 1640 cm^{-1} (C=C).

On the basis of the mixed melting point and an analysis of its spectral characteristics it was identified as the germacranolide hanphyllin [1].

From the subsequent eluates a substance (II) crystallized with the composition $C_{15}H_{20}O_4$, mp 224°C; R_f 0.66; M^+ 264. IR spectrum: λ_{\max}^{KBr} 3500 cm^{-1} (OH), 1756 cm^{-1} (carbonyl of a γ -lactone ring conjugated with an exomethylene group), and 1700 cm^{-1} (C=O in a six-membered ring). By a mixed melting point and a comparison of IR spectra, substance (II) was identified as a lactone of the eudesmane type - artecalin [2, 3].

This is the first time that hanphyllin and artecalin have been isolated from *Pseudohandelia umbellifera*.

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