# PULCHELLIN C FROM Inula caspica

S. M. Adekenov and M. A. Abdykalykov

UDC 547.314

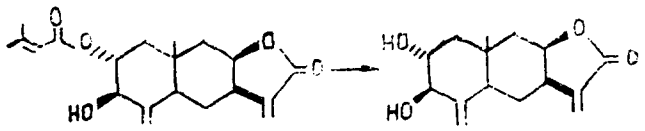
The isolation from a chloroform extract of the flower heads and leaves of the Caspian inula, Inula caspica Blume, of the sesquiterpene lactones in incaspin, britannin, and 3β-hydroxy-2α-senecioyloxyisoalantolactone has been reported previously [1, 2].

The chemical study of this plant has been continued by the flash chromatography of the ether–ethyl acetate fractions obtained on the chromatographic separation of a chloroform extract by a method described previous to [1]. When the column was eluted with ether–ethyl acetate (1:1) we isolated a colorless crystalline substance which, after recrystallization from alcohol, had the composition $C_{15}H_{20}O_4$, $M^+$ 264, mp 200-203°C, $[\alpha]_D^{20}$ +92.8° (c 0.0045; chloroform). According to its IR and PMR spectra its molecule contained two hydroxy groups and two exomethylene groups, one of which was conjugated with a γ-lactone carbonyl group. The yield amounted to 0.02% calculated on the air-dry raw material.

Acetylation with acetic anhydride in pyridine of the substance isolated gave a derivative with the composition $C_{19}H_{24}O_6$, mp 192-194°C (from alcohol). The IR spectrum of the acetyl derivative lacked the absorption bands characteristic for hydroxy groups, and in the PMR spectrum there were signals of two vicinally located hemiacyl protons.

From its physicochemical constants and spectral characteristics and a comparison of them with literature information [3], the substance isolated from Caspian inula was identified as the sequiterpene lactone pulchellin C. This is the first time that it has been detected in the plant species studied.

On the basis of biogenetic considerations it is possible to suggest that pulchellin C is perhaps formed from 3β-hydroxy-2α-senecioyloxyisoalantolactone on the enzymatic hydrolysis of the latter in the plant organism. The interaction of 3β-hydroxy-2α-senecioyloxyisoalantolactone with 4% KOH gave a derivative identical in elementary composition, melting point, and spectral characteristics with puchellin C.

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Institute of Organic Synthesis and Coal Chemistry, Kazakh SSR Academy of Sciences, Karaganda. Translated from Khimiya Prirodnykh Soedinenii, No. 3, pp. 405, May-June, 1990. Original article submitted August 30, 1989.

 0009-3130/90/2603-0338$12.50 