

On studying the composition of the polyphenols of *Inula grandis* we found that its leaves contain five and the flowers six flavonoids. The present paper gives the results of an investigation of one of them, isolated from the leaves.

An ethanolic extract was evaporated to small volume and passed through a column of polyamide, which was then washed first with benzene and then with methanol. The methanolic eluate was concentrated and chromatographed on a column of KSK silica gel, elution being performed first with chloroform and then with chloroform-butanol (9:1).

The precipitate that deposited when the latter was concentrated, was recrystallized from a mixture of ethyl acetate, benzene, and methanol (1:10:1). This gave a flavonoid with the composition $C_{17}H_{14}O_7$, mol. wt. 330, in the form of yellow acicular crystals with mp 228-230°C, readily soluble in ethanol, ethyl acetate, and acetone, and insoluble in water. In the air, aqueous ethanolic solutions of the substance readily oxidized, acquiring a green coloration, and in the presence of sodium bicarbonate they turned brown, showing the presence of an ortho-dihydroxy grouping in them.

The UV spectrum of the flavonoid [λ_{\max} 283, 343 nm (log ϵ 3.69, 3.76)] is characteristic for the chromophore of a 3,4',5,6,7-O-substituted flavone [1].

NMR spectrum (δ scale, in DMSO): singlet at 12.1 ppm (C_5 -OH), 10 ppm (C_4' -OH), doublets at 7.78 and 6.78 ppm, $J = 8.5$ Hz (2 H each: H'-2, H'-6 and H'-3, H'-5, respectively), singlet at 3.83 and 3.84 ppm (Ar-OCH₃).

The mass spectrum of the flavonoid contained, in addition to the peak of the molecular ion M^+ 330, peaks with m/e 184 and 150, showing that ring A contains two hydroxy and one methoxy groups. The second methoxy group is present at C_3 . The substance gives a bathochromic shift with sodium ethoxide but not with sodium acetate, which shows the presence of a hydroxyl at C_4' and a methoxyl at C_7 .

On the basis of what has been said, it follows that the flavonoid investigated has the structure of 4',5,6-trihydroxy-3,7-dimethoxyflavone. This is the first time that this flavonoid has been isolated as a natural compound.

LITERATURE CITED

1. S. E. Flores and J. Herran, *Tetrahedron*, 2, Nos. 3-4, 308 (1958).

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