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In a study of the lactones of the epigeal part of *Artemisia santolina* Schrenk [1, 2] and *A. scotina* Nevski [3], as an accompanying component we isolated a substance with the composition $C_{10}H_{12}O_4$, mp 79–80°C (from ethanol). The yield from the first plant was 0.22% and from the second 0.01% (of the weight of the dried plant).

The substance was isolated by treating chloroform extracts with petroleum ether and also by chromatography on neutral alumina or silica gel.

The IR spectrum of the substance shows the absorption bands of stretching vibrations at ν_{\max} 2955 and 2840 cm^{-1} (methoxy groups), a broad band at 1580–1620 cm^{-1} (carbonyl group conjugated with an aromatic nucleus) and 1510 and 1460 cm^{-1} (–CH=CH– bond of a benzene nucleus), and a weak band at 3450 cm^{-1} corresponds to a phenolic hydroxyl.

The UV spectrum of the compound isolated (λ_{\max} 213, 225, 290 nm; log ϵ 4.05, 3.99, 4.10, respectively) confirms the presence of a conjugated carbonyl group.

The NMR spectrum of the substance ($CDCl_3$, taken on a C-60HL instrument with HMDS as internal standard; here and below, the δ scale) showed a singlet (3H) at 2.48 ppm assigned to the protons of an acetyl group (CH_3CO-) attached to an aromatic ring. Two singlets in the 3.65 and 3.68 ppm region (each of three proton units) show the presence of two methoxy groups. Two doublets at 5.72 and 5.86 ppm (each of one proton unit, $J=4$ Hz), from the nature of their splitting, show the meta position of these protons in the benzene ring. The proton of the phenolic hydroxy group appears in the form of a singlet (1H) in the 13.8 ppm region.

On acetylation with acetic anhydride in pyridine, the substance formed a monoacetyl derivative, $C_{11}H_{14}O_5$, mp 105–107°C (from ethanol), the IR spectrum of which lacked the absorption band of a hydroxy group but showed new maxima at 1752 and 1220 cm^{-1} , which are characteristic for an acetyl group.

Thus, the substance that we have isolated is 2-hydroxy-4,6-dimethoxyacetophenone and is identical with the xanthoxylum isolated previously from *Xanthoxylum alatum* Roxb. and from other plants [4].

This is the first time that xanthoxylum has been isolated from *A. santolina* and *A. scotina*.

LITERATURE CITED

1. B. Akyev, Sh. Z. Kasymov, and G. P. Sidyakin, *Khim. Prirodn. Soedin.*, 730 (1972).
2. B. Akyev, Sh. Z. Kasymov, and G. P. Sidyakin, *Khim. Prirodn. Soedin.*, 733 (1972).
3. M. I. Yusupov and G. P. Sidyakin, *Khim. Prirodn. Soedin.*, 667 (1972).
4. W. Karrer, *Konstitution und Vorkommen der organischen Pflanzenstoffe*, Birkhauser Verlag, Basel (1958), p. 181.

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