

2. B. H. Budzihiewiz, J. M. Wilson, and C. Djerassi, *J. Am. Chem. Soc.*, **85**, 2688 (1963).
3. K.-H. Lee, T. Ibuka, H. Furukova, M. Huzuka, R.-Y. Wu, H. Halliris, and H.-C. Huang, *J. Pharm. Sci.*, **69**, No. 9, 1050 (1980).
4. R. Razakov, A. K. Kasimov, Kh. A. Aslanov, and A. S. Sadykov, *Khim. Prir. Soedin.*, **81** (1981).
5. L. Farkas, M. Nogradi, V. Sudarsanem, and W. Herz, *J. Org. Chem.*, 3228 (1966).
6. Y.-L. Liu and T. T. Mabry, *Phytochemistry*, **20**, No. 6, 1368 (1981).
7. L. P. Smirnova, G. G. Zapesochayaya, V. I. Sheichenko, and A. I. Ban'kovskii, *Khim. Prir. Soedin.*, 313 (1974).

COMPONENTS OF *Tanacetopsis mucronata*

B. Kh. Abduazimov, A. I. Yunusov,
and G. P. Sidyakin

UDC 547.314+582,998

We have continued the separation of the combined nonpolar sesquiterpene lactones from the epigeal part of *Tanacetopsis mucronata* (Regel et Schmalh.) S. Kovalevsk. [1, 2].

On the chromatographic separation of the nonpolar fraction of the chloroform extract on a column of silica gel (1:30) with elution by hexane-ethyl acetate (93:7), from fractions 30-40 we isolated acicular crystals with mp 108°C (from hexane-ethyl acetate), with the composition $C_8H_8O_2$ (I), M^+ 136, R_f 0.75 [Silufol UV-254 plates, ethyl acetate-hexane (3:2) system].

The IR spectrum of (I) (ν_{max} , KBr) had absorption bands of a conjugated carbonyl (1672 cm^{-1}), of a hydroxy group (3400 cm^{-1}), and of an aromatic ring (1610, 1590 cm^{-1}).

The PMR spectrum of (I) (δ scale, JNM-4-H-100 MHz, 0 - HMDS, deuteropyridine) showed the signals of the protons of a methyl group (singlet, 2.36 ppm) and of aromatic protons (doublets at 6.69 and 7.87 ppm).

On the basis of the results obtained and also of its mass-spectrometric fragmentation, substance (I) was identified as p-hydroxyacetophenone [3].

The mother solutions from mucrin [2] were chromatographed on a column of silica gel (1:30). On elution with the hexane-methyl ethyl ketone (9:1) system, fractions 35-37 deposited crystals with mp 204°C (from a mixture of hexane and ethyl acetate); composition $C_{10}H_8O_4$ (II), M^+ 192, R_f 49. IR spectrum (cm^{-1}): 3350 (OH), 1715 (C=O), 1640 (C=C), 1620 and 1575 (aromatic ring).

Substance (II) proved to be identical with the coumarin scopoletin [4].

Fractions 39-54 yielded mucronin, and fractions 58-67 a substance (III) with mp 167°C (from a mixture of hexane and ethyl acetate) with the composition $C_{15}H_{18}O_4$, M^+ 262, R_f 0.40.

The IR spectra of (III) showed the absorption bands of a hydroxy group (3550 cm^{-1}), of the carbonyl of a γ -lactone ring (1760 cm^{-1}), and of a ketone carbonyl (1680 cm^{-1}).

The properties and analysis of the spectral characteristics of substance (III) showed its identity with the sesquiterpene lactone tamirin [5].

LITERATURE CITED

1. S. K. Cherepanov, *Vascular Plants of the USSR* [in Russian], Leningrad (1981), p. 99.
2. B. Kh. Abduazimov, A. I. Yunusov, S. A. Khamidkhodzhaev, and G. P. Sidyakin, *Khim. Prir. Soedin.*, 398 (1981).
3. P. Karrer, *Organic Chemistry*, 4th edn., Elsevier, Amsterdam (1950).
4. G. A. Kuznetsova, *Natural Coumarins and Furocoumarins* [in Russian], Leningrad (1967), p. 74.
5. V. A. Mnatsakanyan and L. V. Revazova, *Khim. Prir. Soedin.*, 396 (1974).

Institute of the Chemistry of Plant Substances, Academy of Sciences of the Uzbek SSR, Tashkent. Translated from *Khimiya Prirodnykh Soedinenii*, No. 6, pp. 797-798, November-December, 1983. Original article submitted June 21, 1983.