COUMARINS OF *Persica vulgaris*

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Leaves and year-old runners of common peach contain several phenolic compounds [1]. However, the coumarin composition of this plant has not been reported. Results from a study of coumarins obtained from various parts of common peach (*Persica vulgaris* L., Rosaceae) are presented here.

We used leaves, flowers, and branches of peach collected in summer 2001 in the Crimea. The raw material was ground to 2-3 mm, treated with ethanol (70%), and evaporated to an aqueous solution. Coumarins were extracted by $CHCl_3$. The $CHCl_3$ fractions were chromatographed using $CHCl_3$—$HCONH_2$ and petroleum ether—formamide. Authentic coumarins were used as standards. The chemical composition was deduced based on five parallel determinations. The R_f values of spots before and after treatment with chromophoric reagents revealed at least six coumarin-type compounds upon visualization in UV and natural light. We found umbelliferone in all parts, flowers and branches more than leaves; and scopoletin, coumarin, and scopolin in flowers and branches.

Quantitative determination of the coumarins used photocolorimetry after conversion of coumarins to the sodium salt of the corersponding coumarinic acids [5]. Leaves contain 2.34% coumarins; branches, 2.60%; flowers, 3.91%.

Coumarins were isolated from air-dried peach branches (2 kg) by grinding them and treating them with seven times the volume of ethanol (70%). The extract was evaporated to an aqueous solution, from which the precipitated lipophilic compounds were filtered off. The filtrate was treated with $CHCl_3$. The solvent was evaporated. The solid after evaporation of $CHCl_3$ was placed on a polyamide column that was eluted with benzene, C_6H_6—$CHCl_3$ mixtures, and $CHCl_3$. The separation was monitored by paper chromatography and TLC using petroleum ether—formamide and $CHCl_3$—$HCONH_2$.

Four coumarinic compounds were isolated:

Compound 1, $C_{10}H_8O_4$, mp 200-202°C (C_2H_5OH—$CHCl_3$), identified as scopoletin [2, 4];

Compound 2, $C_9H_6O_3$, mp 230-232°C (ethanol), identical to umbelliferone [4];

Compound 3, $C_9H_6O_2$, mp 67-68°C (ethanol), identical to coumarin [4];

Compound 4, $C_9H_6O_3$, mp 207-209°C (ethanol), identical to scopolin [4].

The compounds were identified by their physicochemical properties, R_f values in various solvent systems, UV and IR spectroscopy, and mixed melting points with authentic samples.

REFERENCES

1. V. A. Bandyukova, G. N. Kashchenko, and A. S. Saraf, Conf. on Pharmacy, Pharmacology, and Staff Training, Pyatigorsk (1994), p. 36.
2. N. F. Komissarenko, I. G. Levashova, and U. A. Akhmedov, *Khim. Prir. Soedin.*, 247 (1984).
3. S. V. Kovalev, Candidate Dissertation in Pharmaceutical Sciences, Khar′kov (1998).
4. V. M. Malikov and A. I. Saidkhodzhaev, *Khim. Prir. Soedin.*, 560 (1998).

National Pharmaceutical Academy of Ukraine, 61002, Kharkov, ul. Pushkinskaya, 53. Translated from Khimiya Prirodnykh Soedinenii, No. 1, p. 79, January-February, 2002. Original article submitted December 12, 2001.

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