

BRIEF COMMUNICATIONS

FATTY-ACID COMPOSITION OF THE SEED OIL OF *Papaver bracteatum*

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Papaver bracteatum (great scarlet poppy), a representative of the section *Macrantha* elkan, family *Papaveraceae* Juss., is a source of such alkaloids as thebaine and oripavine, which are similar in structure to the alkaloid morphine [1, 2]. For a comprehensive study of this plant, an investigation of the fatty oil of its seeds is important.

We have analyzed the fatty oils of the seeds of *P. bracteatum* cultivated in the Botanical Garden of the Pyatigorsk Pharmaceutical Institute, and also the seeds of a wild-growing plant collected in the environs of Pyatigorsk [3].

The oil content of the seeds as extracted by petroleum ether, referred to the absolutely dry weight, was 20.7% for the wild-growing *P. bracteatum* and 26.0% for the cultivated plant.

The seeds were ground and the oils were extracted at room temperature; they consisted of clear almost odorless oily liquids. The IR and UV spectra of the oils and of the fatty acids showed no specific absorptions.

The fatty-acid compositions of the oils were determined by the GLC method:

Acid	Cultivated Poppy	Wild Poppy
Palmitic	12.3	12.5
Stearic	1.4	1.7
Oleic	10.2	7.9
Linoleic	76.1	77.9

Palmitoleic acid was found in trace amounts in both oils.

Thin-layer chromatography on silica gel with 7% of AgNO₃ in the benzene-diethyl ether (9:1) system confirmed the fatty-acid compositions determined by the GLC method.

The fatty-acid compositions of the two oils were very similar to one another both qualitatively and quantitatively. The saturated acids were represented mainly by palmitic acid, and the main component of the unsaturated acids was linoleic acid.

The triglyceride composition of the oils with respect to six types of triglycerides was determined by enzymatic hydrolysis using lipase:

Type of Triglyceride	Cultivated Poppy	Wild Poppy
GI SSS	0.12	0.08
GI SSU	0.97	0.82
GI USU	2.52	2.16
GI SUS	4.09	5.12
GI SUU	21.81	27.18
GI UUU	70.49	64.64

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Poppy oil is an edible product and is also a valuable raw material for perfumery and for the production of high-quality varieties of plants; because of its high linoleic acid content the oil dries rapidly forming almost colorless films [4, 5].

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7-ISOPENTENYLOXYCOUMARIN FROM *Heracleum dissectum*

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We have investigated a chloroform extract from the roots of vegetative specimens of *Heracleum dissectum* Ledeb., collected by the resources-prospecting division of the Combined Soviet-Mongolian Comprehensive Biological Expedition of the Academy of Sciences of the USSR in the Gobi Altai in July, 1971.

From chloroform extract chromatography on alumina (activity grade III, petroleum ether-chloroform) we isolated four coumarin compounds. Three of them were identified on the basis of elementary analyses, melting points, and IR spectra as furocoumarins known for this plant: pimpinellin, isopimpinellin, and isobergaptin [1]. The fourth compound, $C_{14}H_{14}O_3$, had mp 73-74°C, M^+ 230, R_f 0.5 (TLC, Silufol, chloroform), IR spectrum, cm^{-1} : 1718 (=CO of an α -pyrone), 1615, 1560, 1505 (aromatic C=C), 1460, 1375, 1350, 1280, 1237, 1209, 1160, 1130, 1015, 990, 897, 840, 830. The PMR spectrum of the substance was completely identical with that of 7-isopentenylloxycoumarin [2]. The mass spectrum contained, in addition to the peak of the molecular ion with m/e 162, 163, and 175, confirming the presence of an umbelliferone fragment, and a peak with m/e 69 - the side-chain fragment.

The IR, PMR, and mass spectra and the identity of the melting points showed that the substance was 7-isopentenyloxycoumarin, isolated previously from *Libanotis intermedia* [3].

This is the first time that this coumarin has been isolated from a plant of the genus *Heracleum*.

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