

COUMARINS OF THE ROOTS
OF *Heracleum lehmannianum*

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We have studied the coumarin composition of the roots of *Heracleum lehmannianum* Bunge, which is endemic to Central Asia. The plants were grown in the Leningrad oblast from seeds collected in Uzbekistan, Tadzhikistan, and Kirghizia (we provisionally call the seeds hemicarps—mericarps).

Samples of the roots of *H. lehmannianum* of different origins did not differ from one another with respect to their qualitative coumarin composition.

When an extract from the roots was chromatographed on paper in the petroleum ether—formamide system, in addition to the furocoumarins found previously (bergapten, isopimpinellin, and sphondin) [1], we found another six substances of coumarin nature: isobergapten, pimpinellin, angelicin, psoralen, scopoletin, and umbelliferone. The isolation of the coumarins was performed by a procedure described previously [2]. We obtained five individual compounds. By their physicochemical properties, IR spectra, R_f values in various systems, and mixed melting points, they were all shown to be identical with the corresponding furocoumarins: sphondin ($C_{12}H_8O_4$, mp 189–191°C), isopimpinellin ($C_{13}H_{10}O_5$, mp 148–150°C), bergapten ($C_{12}H_8O_4$, mp 188–191°C), isobergapten ($C_{12}H_8O_4$, mp 221–223°C), and pimpinellin ($C_{13}H_{10}O_5$, mp 118–119°C).

On paper chromatography in the petroleum ether—formamide system with authentic samples, psoralen and angelicin were found in the extracts, and in the chloroform—formamide system umbelliferone and scopoletin were found.

LITERATURE CITED

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