

FUROCOUMARINS OF *Ferula mogoltavica*

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Ferula mogoltavica Lipsky et Korov is a narrowly endemic species of the foothills of the Mogol-Tau range and the adjacent part of the Fergana valley (Tadzhikistan). It grows on loess-rubble, slightly saline gypsum slopes, and in dry valleys. The isolation of a number of terpenoid coumarins from this species has been described [1-3], but the results of a study of control herbarium specimens shows that under the name of *F. mogoltavica* was actually studied a different, taxonomically remote, species, *F. samarkandica* Korov, which is frequently found in the mountains of Mogol-Tau.

The sample for investigation was collected on May 15, 1971 close to Leninabad (kishlak [village] of Chashma). Two substances were isolated from an acetone extract of the giant fennel roots on silica gel in mixtures of petroleum ether and ethyl acetate with gradually increasing concentrations of the latter: (I) $C_{16}H_{14}O_4$, mp 100-101°C, and (II), $C_{13}H_{10}O_5$, mp 148-150°C. The PMR spectrum (Varian HA-100D, $CDCl_3$, 0 - TMS, δ , ppm) of substance (I) showed that it was a furocoumarin (H_3 6.35 ppm, d, J = 10 Hz; H_4 7.75 ppm, d, J = 10 Hz; H_5 7.30 ppm, s; H_4' , 6.70 ppm, d, J = 2.3 Hz; H_5' 7.68 ppm, d, J = 2.3 Hz) containing an isopentenylloxy group at position 8 (2 CH_3 , 1.78 ppm, s; $HC=C$ 5.62 ppm, J = 6.5 Hz; $OCH_2-CH=C$ 5.04 ppm, d, J = 6.5 Hz). A comparison of (I) with an authentic sample of imperatorin showed their identity.

According to its PMR spectrum substance (II) was a furocoumarin (H_3 6.25, d, J = 10 Hz; H_4 8.06 d, J = 10 Hz; H_1 6.99, d, J = 2.3 Hz; H_5 , 7.62, d, J = 2.3 Hz) containing two methoxy groups (4.18 and 4.30 ppm, s, 3 H each). A comparison of (II) with an authentic sample of isopimpinellin showed their identity.

The isolation of furocoumarins from the roots of *F. mogoltavica* was somewhat unexpected, since they have not been found previously in any domestic species of the subgenus *Merwia* (B. Fedtsch) Korov. Of the species of this subgenus, furocoumarins have been detected only in the Iranian species *F. alliacea* Boiss. [4, 5].

LITERATURE CITED

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