

TERPENOID COUMARINS OF *Ferula foetidissima*  
AND *F. inciso-serrata*

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Conferol, conferone [1], umbelliprenin, moschatol, and dihydroconferin [2] have previously been isolated from *Ferula foetidissima*. Continuing a study of the terpenoid coumarins of this plant, we have isolated another two minor components: (I),  $C_{26}H_{32}O_6$ ,  $M^+$  440, mp 155–158°C, and (II),  $C_{24}H_{28}O_4$ ,  $M^+$  380, mp 174–177°C. On the basis of the comparison with an authentic sample, substance (I) was identified as feterin, isolated previously from *F. teterima* [3] and *F. iliensis* [4]. Substance (II), according to its PMR spectrum [Varian HA-100D,  $CDCl_3$ , 0 – TMS;  $\delta$ , ppm: 0.84, s, 6 H, and 1.08, s, 3 H ( $3CH_3$ ); 3.35, q, 1 H,  $J_1$  = 9.0 Hz,  $J_2$  = 6.0 Hz ( $C_6$ –NOH); 4.95 and 5.00, u.s., 1 H each ( $C_2=CH_2$ ); 4.20, m, 2 H ( $C_1'-CH_2-OAr$ ); 5.71, d, 1 H, and 6.18, d, 1 H,  $J$  = 10 Hz ( $C_3'H=C_4'H$ ); 6.22, d 1 H,  $J$  = 10 Hz ( $H_3$ ); 7.75, d, 1 H,  $J$  = 10 Hz ( $H_4$ ); 7.31, d, 1 H,  $J$  = 10 Hz ( $H_5$ ); 6.84, m, 2 H ( $H_6$  and  $H_8$ )], was cauferidin [5].

*Ferula inciso-serrata* M. Pimen et J. Baranova is a recently described species [6], related to *F. conoeca* Korov and *F. foetidissima* Regel. et Schmilh., growing in the mountain ranges (Chatkal', Fergana) surrounding the eastern part of the Fergana valley, and also in the adjacent part of the Central Tien-Shan (to the east of Mt. Moldo-Too). We studied the roots of two specimens, one of which was collected in the environs of Lake Sary-Chelek (Chatkal' range, Kirghizia), and the other at Padshaata (Chatkal' range). From an acetone extract of the first specimen by chromatography on silica gel L 40–100  $\mu$ m in petroleum ether–acetate we isolated conferol, conferone, feterin, conferol acetate [7], and moschatol acetate [4], which were identified by comparison with authentic samples of the substances isolated from *F. conoeca*, *F. foetidissima*, or *F. moschata* or obtained by the acetylation of the corresponding alcohols. The second specimen contained conferone, conferol, moschatol, and feterin. Thus, the composition of *F. inciso-serrata* is close to that of *F. foetidissima*, as was to be expected in view of their taxonomic closeness.

LITERATURE CITED

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