FERILIN FROM *Ferula iliensis*

N. V. Veselovskaya and Yu. E. Sklyar

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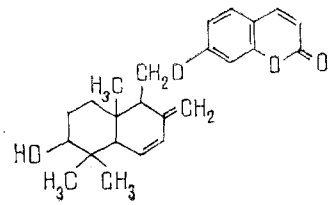
In addition to the conferol, conferone, samarkandin, feterin, and moschatol isolated previously [1], from an acetone extract of the roots of *Ferula iliensis* Krasn. ex Korov. (*F. popovii* Korov.), we have obtained a new terpenoid coumarin, $C_{24}H_{28}O_4$, M^+ 380, mp 172-174°C, $[\alpha]_D^{20}$ −66.9° (c 1.0; $CHCl_3$), which we have called ferilin. The PMR spectrum of ferilin (Varian HA-100D, 0 − TMS, $CDCl_3$, δ, ppm), in addition to the signals of 7-hydroxycoumarin [6.22, d, 9.5 Hz, 1 H (H_3); 7.61, d, 9.5 Hz, 1 H (H_4); 7.34, d, 9.0 Hz, 1 H (H_5); 6.83, m, 2 H (H_6 and H_8)], there are the signals of the following functional groups: 3 CH_3—C—, 0.83, 0.86, 1.02, s, 3 H each; C—OH, 2.54, u.s, $W_{1/2}$ = 9.0 Hz, 1 H; H—C—OH, 3.49, u.s, $W_{1/2}$ = 9.0 Hz, 1 H; —CH_2—OAr, 4.24, m, 2 H; CH_2=C—, 4.95, d, 8.0 Hz, 2 H; —CH=CH—, 5.70, d, 10.0 Hz, 1 H, and 6.25, d, 10.0 Hz, 1 H.

The absorption band of an OH group (3620 cm^{-1}) was observed in the IR spectrum.

The acetylation of ferilin with acetic anhydride in pyridine gave an acetate, $C_{26}H_{36}O_5$, mp 128-130°C. As a result of acetylation, the signal at 3.49 ppm shifted to 4.75 ppm. These results permit the assumption for ferilin of a structure close to that of cauferidin (I) [2, 3]. A comparison of the PMR spectra of (I) and of ferilin showed almost complete coincidence of their signals, only that of the proton geminal to the OH group being different: For cauferidin it had the form of a quartet with J_1 = 9.0 Hz and J_2 = 6.0 Hz (equatorial hydroxyl) and for ferilin that of a broadened singlet ($W_{1/2}$ = 9.0 Hz) (axial hydroxyl).

Thus, ferilin is the epimer of cauferidin with the axial position of the hydroxyl.



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