

In a study of the coumarin composition of the roots of Prangos latiloba Eug. Kor., collected in the Turkmen SSR (in the environs of Ashkhabad), we have isolated nine compounds possessing the properties of coumarins: (I), $C_9H_6O_3$, mp 228-230°C; (II), $C_{16}H_{14}O_4$, mp 109-110°C; (III), $C_{16}H_{14}O_5$, mp 139-140°C; (IV), $C_{16}H_{16}O_6$, mp 136-137°C; (V), $C_{16}H_{16}O_5$, mp 110-111°C; (VI), $C_{16}H_{14}O_5$, mp 136.5-137°C; (VII), $C_{19}H_{20}O_5$, mp 142-143°C; (VIII), $C_{24}H_{32}O_5$, mp 215-216°C; and (IX), $C_{24}H_{30}O_4$, mp 121-122°C.

On the basis of their physicochemical constants and IR and PMR spectra, substances (I-VII) have been identified, respectively, as umbelliferone, isoimperatorin, oxypeucedanin, oxypeucedanin hydrate, pranferol, gosferol, and pranchimgin. Compounds (II-IV) and (VII) had in fact been isolated from this plant previously [1].

Judging from their chemical compositions and IR and PMR spectra, substances (VIII) and (IX) belong to the group of terpenoid coumarins, (VIII) corresponding in its properties to isosamarandin, which has been isolated previously from the roots of Ferula microloba Boiss. [2] and has also been obtained synthetically [3].

IR spectrum of (VIII), cm^{-1} : 3450, 3385 (OH group), 1720 (α -pyrone C=O), 1630, 1580, 1570, 1520 (aromatic nucleus), 1390, 1375 (gem-dimethyl group). PMR spectrum of (VIII) (HX-90, $CDCl_3$, 0 - TMS), ppm: 6.11, 7.50 (doublets, H_3, H_4 ; $J = 10$ Hz); 7.23, 6.76 (doublets, H_5, H_6 ; $J = 9$ Hz); 6.80 (singlet, H_8); 4.20, 4.40 (quartets; $J_{gem} = 10$ Hz; $J_{vic} = 6$ Hz; $Ar-O-CH_2-$); 3.16 (broadened signal of an axial $H-C-OH$, proton; $J = 16$ Hz); 0.72, 0.87, 0.94 (singlets, $-C-CH_3$); 1.16 (singlet, $-C-CH_3$).

The acetylation of (VIII) with acetic anhydride in the presence of pyridine formed a monoacetate (X), $C_{26}H_{24}O_6$, mp 178-180°C, and a diacetate (XI), $C_{28}H_{36}O_7$, mp 180-181°C. The structures of (X) and (XI) were confirmed by IR and PMR spectroscopy, and also by their preparation from an authentic synthetic sample of isosamarandin. They had the same physicochemical constants. It must be mentioned that the PMR spectrum of (X) agreed completely with that given for colladocin (XII), $C_{26}H_{34}O_6$, mp 219°C, isolated from the roots of Colladonia triguetra (Vent) DC [4], but their IR spectra and melting points differed sharply. Consequently, (XII) is not identical with isosamarandin acetate as reported by Borisov et al. [4].

We are the first to have found isosamarandin in representatives of the genus Prangos. This shows the biogenetic closeness of the latter to Ferula in which terpenoid coumarins are commonly found.

LITERATURE CITED

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