

ISOLATION OF RUTIN FROM CERASUS PSEUDOPROSTRATA

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We have studied the composition of the flavonoids of Cerasus pseudoprostrata Pojark. collected in 1962 in Uzbekistan.

The comminuted branches of C. pseudoprostrata were extracted with methanol, the solvent was distilled off in vacuum, and the residue was dissolved in water and transferred to a polyamide column. Elution with water gave a crystalline substance. Yield 0.1%, mp 190.5°-192° C (from 95% alcohol), $C_{27}H_{30}O_{16} \cdot 2H_2O$.

On paper chromatography in the butanol-acetic acid-water (4:1:5) system, this compound gave a spot with R_f 0.40, and on a plate with a thin layer of polyamide in the methanol-water (8:2) and methanol systems it gave spots with R_f values identical with those for rutin (0.41 and 0.40, respectively).

The acid hydrolysis of the substance gave quercetin, glucose, and rhamnose. The sugars were identified by paper chromatography [1] and the quercetin by its IR spectrum, the absence of a depression of the melting point (mp 314° C, decomp.), of a mixture with an authentic sample of quercetin, and also by paper chromatography in a thin layer of polyamide.

Methylation with dimethyl sulfate [1] and subsequent removal of the carbohydrate residue gave 5, 7, 3', 4'-tetramethylquercetin with mp 195°-196° C, which shows the attachment of rutinose to the quercetin in position C₃. Thus, the substance isolated from the leaf-bearing branches of C. pseudoprostrata is rutin, which is confirmed by the absence of a depression of the melting point of a mixture with rutin, and also by the identity of their UV and IR spectra.

REFERENCE

1. G. G. Zapesochnaya and A. I. Ban'kovskii, KhPS, 289, 1965.

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A SESQUITERPENE LACTONE FROM ARTEMISIA JUNCEA

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The leaves and flower heads of Artemisia juncea Kar. et Kir. contain santonin (0.28-0.36%), essential oil (0.28-1.02%), and alkaloids (about 0.1%) [1-3]. The content of santonin was shown by the preparation of the crystalline substance by Massagetov's method developed for santonin. The identification of this substance with an authentic sample of santonin has not been carried out.

To study the lactones of the plant concerned, we investigated samples collected on the 25th June, 1964, at the beginning of the budding period (Kuyuk Pass). From the leaves and flower heads we isolated by a method described previously [4] a substance of the composition $C_{15}H_{18}O_4 \cdot H_2O$ (from alcohol), mp 149°-150.5° C in a yield of 0.2%.

To eliminate water of crystallization, this substance was dried at 130° C for 6 hr; the melting point remained unchanged, and so did the IR spectrum.

Found, %: C 68.96, 69.08; H 7.03, 7.01; mol. wt. 265.2 (Rast). Calculated for $C_{15}H_{18}O_4$, %: C 68.71; H 6.87; mol. wt. 262.

The IR spectrum of the substance had absorption bands at 3550 (OH group), 1683 (α , β -unsaturated ketone), 1621, 1641 (C=C bond) and 1771 cm^{-1} (absorption band of a carbonyl group of a γ -lactone ring). The UV spectrum, λ_{max} 256 $m\mu$ ($\log \epsilon$ 4.14), shows the presence of a conjugated system. The substance obtained forms an acetyl derivative with mp 190°-191.5° C and the composition $C_{17}H_{20}O_5$.

The constants of the substance considered agree completely with the results for deacetylmatricarin, a sesquiterpene lactone isolated previously from A. tilesii, A. austriaca, and A. lercheana [5, 6], which was confirmed by paper and thin-layer chromatography and a comparison of the IR spectra of mixtures with an authentic sample of deacetylmatricarin.