

Continuing an investigation of the phenolic compounds of the leaves of *Armoracia rusticana* Gaerth. Mey et Scherb., in addition to free aglycones (kaempferol and quercetin) [1], we have detected flavonoid glycosides among which one predominates. To isolate this compound, a methanolic extract was evaporated in vacuum to eliminate the alcohol, the residue was dissolved in a small amount of hot water, and the solution was filtered and was purified first with chloroform and then with ether, after which it was chromatographed on a column of Kapron, using distilled water as the eluent. This gave in the individual state a flavonoid glycoside which we have called "rustoside."

Rustoside, $C_{26}H_{34}O_{15} \cdot H_2O$, forms fine, yellow-greenish acicular crystals soluble in water and alcohols, mp 186–188°C (ethanol), $[\alpha]_D -126^\circ$ (c 0.1, dimethylformamide), R_f 0.58 (15% acetic acid), 0.49 [butan-1-ol-acetic acid-water (4:1:2)] (ascending method), λ_{max} (in CH_3OH) 356, 305, and 267 nm $E_{1\%}^{1cm}$ 290), with sodium acetate 370, 305, 273 nm, with zirconyl nitrate 405, 350, 305, and 280 nm, with zirconyl nitrate and citric acid 356, 305, and 267 nm, with alkali 400, 325, and 273 nm. An analysis of the results of a spectral study of the glycoside and its aglycone in the UV region shows that the carbohydrate component is present in position 3 [2]. This is also confirmed by qualitative reactions [3].

On considering the products of acid hydrolysis, kaempferol, D-xylose, and D-glucose were found. The percentage content of the aglycone (48%) and the ratio of the intensities of the absorption of the maxima of bands I in the UV spectra of the glycoside and its aglycone (38%) show that the glycoside contains two molecules of monosaccharides.

On mild acid hydrolysis (3% acetic acid), a monoglycoside was formed which was identical in its chromatographic behavior in several systems of solvents with astragalín. After hydrolysis for 40 min, kaempferol precipitated in the form of fine acicular crystals. The bioside involved was cleaved with emulsin.

The facts given make it possible to put forward the hypothesis that rustoside is a kaempferol 3-(O- β -D-glucosyl- β -D-xyloside) in which, apparently, the glucose is present in the pyranose and the xylose in the furanose forms.

In addition to rustoside, the leaves of *Armoracia rusticana* contain considerably smaller amounts of a kaempferol monoglycoside and a quercetin monoglycoside and bioside.

LITERATURE CITED

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