

## QUERCIMERITRIN AND LUTEOLIN 7-GLUCOSIDE IN SOME SPECIES OF DIPSACACEAE

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We have isolated the total flavonoids from nine plants—representatives of the family Dipsacaceae—collected in the region of Kislovodsk and the Teberda reserve and, by recrystallization and chromatography on Kapron we have obtained individual substances.

On the basis of the results of elementary analysis, IR and UV spectroscopy, the determination of physical constants, and the products of cleavage it has been shown that the herbs Cephalaria balkharica E. Busch., Cephalaria gigantea (Ldb.) Bobr., Dipsacus strigosus Willd., Scabiosa bipinnata C. Koch., Scabiosa caucasica M. B., and Scabiosa ochroleuca L. contain luteolin 7-β-D'-glucopyranoside. Quercetin 7-β-D-glucopyranoside (quercimeritrin) has been found in the herb Cephalaria balkharica E. Busch., in the flowers of Cephalaria gigantea (Ldb.) Bobr., and in the above-mentioned species of Scabiosa.

The investigation of the other flavonoids contained in these plants is continuing.

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STUDY OF THE FLAVONOIDS OF PRUNUS SPINOSA

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The flavonoids were extracted from the leaves of Prunus spinosa L. [1-4] with 70% ethanol after preliminary extraction with petroleum ether and chloroform. The ethanol was evaporated off and the aqueous residue was additionally treated with chloroform in order to eliminate the chlorophyll more completely; after this the flavonoids were extracted successively with ethyl acetate and a mixture of ethyl acetate and methanol (80 : 20). After part of the solvents had been distilled off, the flavonoids were precipitated with a 5-fold amount of chloroform. Paper chromatography of the purified alcoholic extracts in various systems of solvents showed the presence of seven flavonoid glycosides.

The total flavonoids obtained were separated in a column of polyamide sorbent—Kapron. On desorption with 25-35% ethanol, the first portions of the eluate contained glycoside 1. Desorption with 45% ethanol yielded glycoside 2. In this communication, we give the results of a study of glycoside 2.

Glycoside 2 was recrystallized from aqueous ethanol. Mp 232-233° C,  $[\alpha]_D^{20} -176^\circ$  (c 0.1; methanol). After hydrolysis with 1% H<sub>2</sub>SO<sub>4</sub> for 2 hr in the water bath, kaempferol was isolated (yield 67%). The paper chromatography of the hydrolysate after neutralization with barium carbonate showed that glycoside 2 contains L-rhamnose as the sugar component.

From the R<sub>f</sub> values in various systems and a mixed melting point, the glycoside was shown to be identical with kaempferol 7-rhamnoside kindly given to us by Prof. Hörhammer (Munich). The results obtained together with the results of UV and IR spectroscopy and also those of enzymatic hydrolysis permit the monoside isolated from the leaves of Prunus spinosa to be identified as kaempferol 7-O-α-L-rhamnofuranoside.

## REFERENCES

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