

GALEROSIDE - A NEW FLAVONOID GLYCOSIDE
FROM *Scutellaria galericulata*

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The flavonoids from *Scutellaria galericulata* L., family Labiatae, have been described as derivatives of scutellarein [1, 2] or of chrysin [3]. However, our preliminary investigations of this plant did not enable us to confirm the literature information. Instead of scutellarin and chrysin glucuronide we found baicalein, baicalin, and a new glycoside, which we have called galeroside.

The flavonoids of the epigeal part of the plant were extracted in the usual way with water (500 g, 5 liters). The concentrate (500 ml), after purification with chloroform, was deposited on a column of polyamide sorbent and washed free from impurities with water. The galeroside was desorbed with 20% methanol and was crystallized from water.

Galeroside has mp 189-190°C, $[\alpha]_D^{25} -56^\circ$ (c 0.1; ethanol), R_f 0.72 (15% acetic acid, two runs of the solvent) and 0.22 [butan-1-ol-methanol-water (70:5:20)]; UV spectrum: λ_{max} in methanol, 315 and 280 nm ($E_{1\%}^{1cm}$ 315 and 557; with sodium acetate, 315 and 280 nm, with sodium acetate and boric acid, 315 and 280 nm; with sodium ethoxide, 350 and 270 nm; with zirconyl chloride, 350 and 295 nm). The IR spectrum is characteristic for a flavone glycoside with a neutral carbohydrate substituent. It was hydrolyzed by acids (2% acid, 100°C, 5 h) to rhamnose and baicalein. The baicalein was identified by its melting point (263-265°C), chromatographic mobility on paper [R_f 0.50 in the benzene-ethyl acetate-acetic acid (70:30:2) system; paper impregnated with formamide] and by UV spectroscopy (λ_{max} in methanol, 325 and 275 nm; with sodium acetate, 365 and 265 nm; with sodium acetate and boric acid, 365 and 265 nm; with sodium ethoxide, 375 and 255 nm; and with zirconyl chloride, 365 and 285 nm).

The results of a polarimetric analysis ($[M]_D^{25} = -133^\circ$), in comparison with phenyl rhamnosides ($[M]_D^{25}$ of phenyl β -L-rhamnofuranoside $= -90^\circ$) and of differential spectroscopy (two absorption bands in the 1010-1100 cm^{-1} region [4]) permitted the assumption that the rhamnose is attached to the aglycone by a β linkage and is present in the furanose form.

Thus, galeroside can be characterized as baicalein 7- β -L-rhamnofuranoside, and this is the first time that this substance has been isolated from plant material.

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