

## TRITERPENE GLYCOSIDE FROM GYPSOPHILA ACUTIFOLIA

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After a communication on the determination of the structure of a triterpene glycoside from Gypsophila pacifica [1], a number of papers were published on the results of a study of various species of this plant [2-6] in which it was established that the compounds obtained were identical with the glycoside from G. pacifica, although some authors reported a divergence of the constants of the isolated substances [5, 6].

We have investigated a triterpene glycoside from the roots of Gypsophila acutifolia Fish.. There is no information whatever on the chemical composition of this plant species in the literature.

In a purified methanolic extract, by chromatography in a thin layer of silica gel in several systems of solvents with different pH values a single glycoside was detected, which we have called "acutifolioside" [mp 232-234° C  $[\alpha]_D^{20} +43^\circ$  (c 1.37, water)]; acetate with mp 144-146° C,  $[\alpha]_D^{20} +35^\circ$  (c 1.72, methanol).

The aglycone of acutifolioside is gypsogenin. Its carbohydrate moiety was found by paper chromatography to contain glucuronic acid, galactose, glucose, arabinose, xylose, fucose, and rhamnose. From the products of hydrolysis with dil H<sub>2</sub>SO<sub>4</sub> was obtained a substance identical with gypsogenin glucuronoside [7]. When the saponin was oxidized with sodium periodate, glucuronic acid, xylose, and fucose were found among the degradation products.

However, when acutifolioside was saponified with alkali and the cleavage fragments were separated and then hydrolyzed, it was found that glucuronic acid, galactose, and arabinose are attached to the hydroxyl group of gypsogenin, and galactose, glucose, arabinose, xylose, and rhamnose to the carboxyl group. Fucose was absent from the monosaccharides. This showed that it is located immediately adjacent to the carboxyl group of the aglycone [8].

The facts given, and also the results that we have obtained previously [9] show that saponins in which gypsogenin is the aglycone and which have a similar set of sugars are characteristic for plants of the family Caryophyllaceae. The distribution of the sugars in the triterpene glycosides is apparently not the same in all these substances.

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