

THE TRITERPENE GLYCOSIDE GYPSOSIDE FROM GYPSOPHILA BICOLOR

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The triterpene glycoside gypsoside was first isolated from Gypsophila pacifica [1] and then from other species of plants of the family Caryophyllaceae [2-4, 6, 7]. We have studied the triterpene glycosides of Gypsophila bicolor (Frey et Sint.) Litv. gathered in the botanical garden of AS TurkmSSR. The seeds, previously treated with chloroform, together with the bracts, were first extracted with 96% and then with 50% aqueous ethanol with heating. By chromatography in a thin layer of silica gel in systems 1) [butan-1-ol-acetic acid-water (4:1:5)] and 2) [butan-1-ol-ethanol-25% ammonia (7:2:5)] the extract was shown to contain two triterpene glycosides. The extract was passed through a small layer of cellulose powder and washed with system 1. When the combined eluates were concentrated, a single glycoside precipitated which, after several reprecipitations from water-saturated butanol, had mp 218-222° C (decomp.),  $[\alpha]_D^{20} +21 \pm 2^\circ$  (c 1; aqueous ethanol); acetate, mp 150-154° C,  $[\alpha]_D^{20} +11 \pm 2^\circ$  (c 1.1; chloroform). The yield of pure glycosides was 2.5% of the weight of the air-dry seeds.

The constants of the glycoside under study and, particularly, of the acetate are low in comparison with literature data for gypsoside [1]. This discrepancy for the gypsoside isolated from other species has been mentioned previously [3, 4].

The glycoside and the gypsoside isolated from Acanthophyllum gypsophiloides [3] behaved identically when chromatographed on a thin layer of silica gel in systems 1 and 2.

On hydrolysis with 2% H<sub>2</sub>SO<sub>4</sub>, the glycoside gave vacaroside [5] while the hydrolysate, neutralized with the anion exchange EDE-10-P (OH<sup>-</sup> form), was shown by two-dimensional paper chromatography in systems 1 and pyridine-butanol-water (4:6:3) to contain D-galactose, D-glucose, D-xylose, L-arabinose, D-fucose, and L-rhamnose.

Hydrolysis of the glycoside with 18% HCl gave the aglycone, gypsogenin, the physicochemical constants and IR spectrum of which agree well with the literature data. A mixture of the gypsogenin from G. bicolor and the gypsogenin from A. gypsophiloides [3] gave no depression of the melting point.

The second, less polar, glycoside was not studied because of its small amount.

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TRITERPENE GLYCOSIDES OF SAPINDUS MUKOROSI

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The information in the literature on the structure of the triterpene glycosides of Sapindus Mukorossi Gaertn. (Chinese soapberry) is contradictory and doubtful. Investigations carried out by Indian scientists were made without satisfactory chromatographic methods of purification and analysis [1]. However, other authors have found in hydrolysates