

TRITERPENE GLYCOSIDES OF *Acanthophyllum paniculata*

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We have studied the triterpene glycosides of the roots of *Acanthophyllum paniculata* L. for the first time.

Four-year roots of this plant (1.15 kg) collected at the Tashkent Experimental Section of the Institute of Botany of the Academy of Sciences of the Uzbek SSR were comminuted and were extracted several times with boiling methanol and then with hot water. The methanolic and aqueous extracts were evaporated to dryness separately. This gave a total of 396 g of extractive substances (34.6% of the weight of the air-dry roots). For purification from inert substances, the dry extract was dissolved in water and was extracted repeatedly with isobutanol. The isobutanolic extracts were washed with water to eliminate oligosaccharides, and the solvent was distilled off. The results of the chromatography of the dry residue of the combined glycosides in a thin layer of silica gel in the chloroform-methanol-water (65:35:8) and butan-1-ol-ethanol-25% ammonia (7:2:5) systems showed that they contained six triterpene glycosides, which we have called in order of increasing polarity paniculatosides A, B, C, D, E, and F. Judging from their migration on a chromatogram and by analogy with the saponins of other plants that we have studied [1, 2], it may be assumed as a rough guide that these glycosides have from 4-5 to 10-11 sugars in their carbohydrate chains.

In order to determine the nature of the aglycone and the qualitative composition of the sugars, the combined glycosides were subjected to acid hydrolysis with 5% sulfuric acid on the boiling water bath for 7 h. The precipitate of aglycone that deposited on hydrolysis had, after recrystallization from methanol, mp 270-272°C, $[\alpha]_{20}^D + 89^\circ$ (c 1.3; ethanol) and by chromatography in a thin layer of silica gel in the chloroform-methanol (25:1 and 10:1) systems it was identified as gypsogenin; it gave no depression of the melting point in admixture with an authentic sample.

In the hydrolyzate, after neutralization with BaCO₃, paper chromatography in the butan-1-ol-pyridine-water (6:4:3) and butan-1-ol-acetic acid-water (4:1:5) systems showed the presence of arabinose, xylose, glucose, galactose, fucose, rhamnose, and glucuronic acid.

Thus, it has been established that *Acanthophyllum paniculata* contains gypsogenin glycosides including the whole set of sugars characteristic for triterpene saponins of the family Caryophyllaceae [3-6].

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