A TRITERPENE GLYCOSIDE FROM Primula macrocalyx

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We have investigated the hypogeal organs (roots and rhizomes) of Primula macrocalyx Bunge, collected in 1970 in the flowering phase in the region of the settlement of Guamki, Krasnodar territory.

On standing, a methanolic extract deposited a precipitate which was filtered off, washed with methanol and recrystallized from boiling methanol. White crystals deposited with a faint beige tinge having the composition $C_7H_{16}O_7$ (elementary analysis) with mp 150-152°C, which was the heptahydric alcohol d-volemitol [1

The methanolic mother solution was precipitated with acetone, the precipitate was filtered off and dissolved in water, and the aqueous solution was extracted with butanol. The butanolic extracts were combined and evaporated until a precipitate deposited. This was centrifuged off, washed with acetone, and dried. Ther it was dissolved in methanol and boiled with a small amount of activated carbon of type B. The carbon was filtered off, and the methanol was distilled off to dryness. This gave 7.6 g (3.8%) of a white crystalline powder with mp 235-238°C.

The R_f value [chloroform–methanol–water (61 : 32 : 7) system; KSK silica gel], the melting point of the substance and of its acetate, and its IR spectrum were identical with the same characteristics of a sample of primula saponin which one of us isolated previously from Primula turkestanica [2]. A mixture gave no depression of the melting point.

The monosaccharides obtained on hydrolysis (3 N HCl, 6 h) were identified by paper chromatography [butanol–ethanol–water (40 : 11 : 19)] as galactose, glucose, and rhamnose, and a uronic acid. The thin-layer chromatography on silica gel G of the water-soluble hydrolysis products from the substance corresponded to that described for primula saponin [3].

LITERATURE CITED

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