

A STUDY OF A TRITERPENE GLYCOSIDE
FROM *Viscaria berhn*

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High-molecular-weight triterpene glycoside-oligosides have been found in plants of the family Carophyllaceae [1-5].

In a study of a methanolic extract of *Viscaria berhn* by thin-layer chromatography in the chloroform-ethyl acetate (8.5:1.5), and butan-1-ol-methanol-water (5:3:2) systems we found two glycosides. They were isolated in the individual state by chromatographic separation of the extract on silica gel in the ethyl acetate-methanol-water (10:2:3) system followed by gel filtration on Sephadex G-25.

The less polar glycoside with mp 246-250°C, $[\alpha]_D^{20} + 30^\circ$ (c 1; pyridine), isolated in a yield of 0.6%, on being heated with 5% hydrochloric acid formed D-glucose and a genin of phenolic nature (giving a positive reaction with FeCl_3).

The other glycoside - viscoside - showing the coloration with antimony trichloride that is characteristic for triterpene glycosides, was obtained with a yield ~2.5%. It consists of an amorphous powder with mp 258-262°C, $[\alpha]_D^{20} + 4^\circ$ (c 3.1; pyridine). On being heated with dilute acids, viscoside undergoes hydrolysis, forming an aglycone agreeing in chromatographic behavior and constants with gypsogenin and also D-galactose, D-glucose, D-xylose, D-fucose, and L-rhamnose in a ratio of 2:1:2:1:1, and D-glucuronic acid. Consequently, viscoside is an octaoside of gypsogenin.

By alkaline saponification, viscoside was split into a pentaoside containing 2 moles each of D-galactose and D-xylose and 1 mole of D-glucuronic acid, and a trisaccharide consisting of D-glucose, L-rhamnose, and D-fucose.

The permethylate of viscoside, obtained by Hakomori's method [6], was cleaved into 2,3,4,6-tetra-O-methyl-D-galactose, 2,3,4-tri-O-methyl-D-xylose, 2,3,4,6-tetra-O-methyl-D-glucose, 3,4,6-tri-O-methyl-O-galactose, 3,4-di-O-methyl-L-rhamnose, 3,4-di-O-methyl-D-fucose, and free glucuronic acid. The results of methylation showed that the glucuronic acid residue is a center of branching, the D-glucose, D-xylose, and one of the D-galactose residues occupy terminal positions, and the D-fucose and L-rhamnose monosaccharides links and the second D-galactose residue are present within the carbohydrate chains of viscoside.

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