

STEROID SAPOGENINS OF ASPARAGUS PERSICUS

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This paper gives the results of a study of the saponins of Asparagus persicus Baker (Perisan asparagus, growing in Azerbaidzhan) which was begun previously [1].

In an investigation of the sapogenins by the method of Wall [2] and Rothrock [3], as modified by O. S. Madaeva [4, 5], we isolated a sapogenin with the composition  $C_{27}H_{44}O_3$ , mp 200-201° C,  $[\alpha]_D^{20} -76.25$  (c 1.8; chloroform) and obtained the acetyl derivative of the genin with mp 137-138° C  $[\alpha]_D^{25} -70.5$  (c 2.5; chloroform). From its constants behavior on paper chromatography and thin-layer chromatography and its absorption in the IR spectrum, this sapogenin has been identified as sarsasapogenin (IR spectra: 852, 900, 921, 987  $cm^{-1}$ ).

## REFERENCES

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## THE STRUCTURE OF HELIANTHOSIDE B

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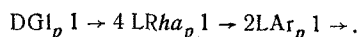
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We have isolated helianthoside B from a mixture of saponins of sunflower petals by chromatography on silica gel in the butan-1-ol-acetic acid-water (4:1:5) system. As in the case of helianthosides A and C [1, 2], the aglycone of the glycoside obtained is echinocystic acid and it contains the monosaccharides glucose, arabinose, xylose, and rhamnose in a ratio of 1:1:1:2.

By gas-liquid chromatography and chromatography in a thin layer of silica gel in the presence of reference samples, an acid hydrolysate of fully methylated helianthoside B was shown to contain, 2,3,4,6-tetra-O-methyl-D-glucose, 2,3,4-tri-O-methyl-D-xylose, 3,4-di-O-methyl-L-arabinose, and 2,3-di-O-methyl-L-rhamnose. The periodate oxidation of the saponin confirmed the results of methylation.

The aluminum hydride cleavage of the methylated helianthoside B gave an oligosaccharide identical with that obtained similarly from methylated helianthoside C [2].

Thus, the carbohydrate chain attached to the carboxyl group of echinocystic acid has the structure



The acid hydrolysis of the methylated glycoside obtained by the aluminum hydride cleavage gave 2,3,4-tri-O-methyl-D-xylose and 2,3-di-O-methyl-L-rhamnose, which were identified by known methods.

The final structure of helianthoside B is as follows:

