

## GLYCOSIDES OF THE LEAVES OF ELEUTHEROCOCCUS SENTICOSUS

N. I. Suprunov

Khimiya Prirodnykh Soedinenii, Vol. 6, No. 4, p. 486, 1970

UDC 547.597+547.918

Eleutherococcus senticosus (Rupr. et Maxim.) Maxim., family of Araliaceae, is a medicinal plant. The rhizomes with the roots are used as the raw material [1]; from them six glycosides have been obtained which were called "eleutherosides" A, B, B<sub>1</sub>, C, D, and E, and their structure has been established [2]. No similar compounds have been found in the leaves.

We have studied the leaves of Eleutherococcus, collected in 1968 in the period of their full development. An air-dried powder of the leaves (300 g) was extracted with methanol, the extract was evaporated to 1 l, and then 2 l of a mixture of benzene and petroleum ether was added and the mixture was stirred. The entire mixture was transferred to a separating funnel and water was added until stratification took place. The lower layer was separated off and evaporated to dryness, the residue was dissolved in methanol, and the solution was filtered through a layer of alumina. The glycosides were precipitated from the methanolic solution with ethyl acetate. The yield of glycoside fraction was 2.2%.

The pure glycoside fraction was chromatographed on a layer of silica gel fixed with gypsum in the solvent system chloroform-methanol-water (2:1, water to saturation). The spots were revealed with conc H<sub>2</sub>SO<sub>4</sub>, the chromatograms being heated at 150° C for 3 min. The formation of crimson spots showed the presence of six substances, which we have called, in order of increasing polarity, "senticosides" A, B, C, D, E, and F. The spot present at the line of the front was identified as oleanolic acid. The hydrolysis of a methanolic solution of the glycosides with 2% H<sub>2</sub>SO<sub>4</sub> gave a white powder giving a positive Lieberman-Burchard reaction. Chromatography in the same system led to a single spot of a genin, identified as oleanolic acid.

The pure combined triterpene glycosides were separated on alumina and silica gel. A chloroform-methanol (100:0 → 50:50) system was used for the elution of the glycosides from alumina, and a chloroform-methanol-water (2:1, water to saturation) system for their desorption from silica gel. The elution of the glycosides was monitored by TLC.

### REFERENCES

1. I. I. Brekhman, Eleutherococcus [in Russian], Leningrad, 1968.
2. Yu. S. Ovodov et al., KhPS [Chemistry of Natural Compounds], 3, 63, 1967.

9 April 1970

Institute of Biologically Active Substances, Far Eastern  
Branch, Siberian Division, AS USSR