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An Acidic Polysaccharide Having Activity on the Reticuloendothelial System from the Roots and Rhizomes of *Saposhnikovia divaricata**

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From the hot water extract of the roots and rhizomes of *Saposhnikovia divaricata*, an acidic polysaccharide, named saposhnikovan C, was isolated by fractionation with cetyltrimethylammonium bromide and on a Sephadex G-50 column followed by chromatography on DEAE-Sephadex A-25 (acetate) and on Sephacryl S-300 columns. The polysaccharide gave a single spot on cellulose acetate membrane electrophoresis and gave a single band on PAGE. In addition, it gave a single peak on gel chromatography.

Saposhnikovan C is composed of L-arabinose : D-galactose : L-rhamnose : D-galacturonic acid : acetyl : methoxyl groups in the molar ratio of 8 : 8 : 7 : 27 : 7 : 8, and the molecular mass was estimated to be 132000. About 30% of the D-galacturonic acid residues exist as the methyl esters.

The results of methylation analysis of the original polysaccharide and the carboxyl-reduced derivative and ^{13}C-NMR spectrum suggested that the minimal unit of saposhnikovan C is composed of four terminal α-L-arabinofuranose, two α-1,5-linked L-arabinofuranose, two 3,5-branched α-L-arabinofuranose, five terminal β-D-galactopyranose, one β-1,4-linked D-galactopyranose, two 3,4-branched β-D-galactopyranose, four α-1,2-linked L-rhamnopyranose, three 2,4-branched α-L-rhamnopyranose, two 3,4-branched α-D-galactopyranosyluronic acid and twenty-five α-1,4-linked D-galacturonan units. In addition, the controlled Smith degradation and partial hydrolysis studies revealed the presence of a backbone chain consisting of α-1,4-linked D-galacturonic acid residues with interspersed α-1,2-linked L-rhamnose residues and of side chains composed of 1,4-linked and 3,4-branched β-D-galactan and 3,5-branched α-L-arabinan.

The effect of saposhnikovan C on a RES was demonstrated by the *in vivo* carbon clearance test. When administered i. p. (50 mg/kg), the phagocytic index was 0.3244± 0.0662. Thus it showed remarkable RES-potentiating activity. It is interesting that saposhnikovan C having highly immunological activity possesses a pectin-like rhamnogalacturonan backbone, while structurally typical pectins show no RES activity.

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