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A Reticuloendothelial System-Activating Glycan from the Seeds of *Malva verticillata**

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From the hot water extract of the seeds of *Malva verticillata,* a polysaccharide, designated as MVS-IIIA, has been isolated by fractionation on DEAE-Sephadex A-25 (carbonate) followed by gel chromatography on Sephacryl S-500 and affinity chromatography on Con A-Sepharose columns. The polysaccharide gave a single band on PAGE and gave a single peak on gel chromatography.

MVS-IIIA is composed of L-arabinose : D-xylose : D-galactose : D-galacturonic acid in the molar ratio of 16 : 1 : 8 : 3, and it contains a peptide moiety (1.7%). Its value of molecular mass was estimated to be about 8.5×10^6.

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 the polysaccharide is composed of four terminal α-L-arabinofuranose, ten α-1,5-linked L-arabinofuranose, two α-1,3-linked L-arabinopyranose, one β-1,4-linked D-xylopyranose, four β-1,3-linked D-galactopyranose, four 3,6-branched β-D-galactopyranose and α-1,4-linked D-galacturonan residues. The periodate oxidation studies also supported these conclusions.

The effect of MVS-IIIA on a RES was demonstrated by the *in vivo* carbon clearance test. When administered i.p. (50 mg/kg), the phagocytic index of MVS-IIIA was 0.4492 ± 0.1048. Thus the value was quite remarkably increased, suggesting powerful activation of RES by i.p. injection of MVS-IIIA.

The structural characterization of MVS-IIIA is both its high arabinose content and the presence of α-1,3-linked L-arabinopyranose residues. Most of the RES-activating polysaccharides from Oriental crude drugs contain arabino-3,6-branched galactan units in common as their major parts, though they have different types of backbone chain.

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