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Constituents of the Seed of *Malva verticillata*. VI. Characterization and Immunological Activities of a Novel Acidic Polysaccharide*

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A novel acidic polysaccharide, designated as MVS-VI, was isolated from the seeds of *Malva verticillata* by hot water extraction followed by ion-exchange chromatography on DEAE-Sephadex A-25, and successive gel chromatography with Sephacryl S-500, Toyopearl HW-60F and Sephadex G-25. It gave a single band on PAGE, and gave a single peak on gel chromatography, which gave a value of 2.6×10^4 for the molecular mass.

MVS-VI is composed of L-arabinose: D-xylose: D-galactose: D-glucose: L-rhamnose: D-galacturonic acid in the molar ratio of 30:15:20:3:2:10, in addition to small amounts of peptide moiety.

Chemical and spectroscopic studies indicated that the minimal unit of polysaccharide is composed of ten terminal α-L-arabinofuranose, sixteen α-1,5-linked L-arabinofuranose, three α-2,5-branched L-arabinofuranose, one α-1,3-linked L-arabinopyranose, six β-1,3-linked D-xylopyranose, nine β-1,4-linked D-xylopyranose, one terminal β-D-galactopyranose, eight β-1,3-linked D-galactopyranose, one β-1,4-linked D-galactopyranose, three β-1,6-linked D-galactopyranose, seven β-3,6-branched D-galactopyranose, three α-1,4-linked D-glucopyranose, one α-1,2-linked L-rhamnopyranose, one α-2,4-branched L-rhamnopyranose and ten α-1,4-linked D-galactopyranosyluronic acid residues.

MVS-VI showed significant reticuloendothelial system-potentiating activity in a carbon clearance test. In addition, MVS-VI possesses remarkable anti-complementary activity, which is superior than that of the positive control, NART-2,4 from the root of *Angelica acutiloba*.

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