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Plant Mucilages. XLII. An Anti-Complementary Mucilage from the Leaves of *Malva sylvestris* var. *mauritiana**

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A mucilage, designated as MSL-M, was isolated from the leaves of *Malva sylvestris* var. *mauritiana* by extraction with cold water followed by fractionation of DEAE-Sephadex A-25 (carbonate) and purification by successive gel chromatography on Sephacryl S-300, Toyopearl HW-75F and Sephadex G-25 columns. The mucilage gave a single peak on gel chromatography and gave a single band on PAGE.

MSL-M contains 94.4% polysaccharide and 5.0% peptide moiety. The polysaccharide is composed of L-rhamnose: D-galactose: D-galacturonic acid: D-glucuronic acid in the molar ratio of 6:3:2:2. Its intrinsic viscosity value in aqueous solution was 12.0, and the value of molecular mass was estimated to be about 6.0×10^6 .

The results of methylation analysis of MSL-M and the carboxyl-reduced derivative and ¹³C-NMR spectrum suggested that the minimal unit of of the polysaccharide moiety is composed of five α -1,2-linked L-rhamnose, one 2,4-branched α -L-rhamnose, one terminal β -D-galactose, two β -1,4-linked D-galactose, two 3,4-branched α -Dgalacturonic acid and two terminal β -D-glucuronic acid residues.

Partial hydrolysis of MSL-M followed by fractionation on DEAE-Sephadex A-25 (formate) column afforded four known oligosaccharides. Based on the accumulated evidence, it can be concluded that the polysaccharide moiety contains two units, $(1\rightarrow 4)$ -[β -D-GlcpA- $(1\rightarrow 3)$]- α -D-GalpA- $(1\rightarrow 2)$ - α -L-Rhap and α -1,2-linked α -L-Rhap, in a ratio of 1:2 as the backbone, and that one-sixth of the rhamnose residues in the backbone carries side chains composed of β -1,4-linked D-galactopyranose units at position 4.

MSL-M showed potent anti-complementary activity compared with the positive control, AR-4, from the root of *Angelica acutiloba*. The highly branched structure could be involved in the activity.

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