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**Characterization of an Acidic Polysaccharide from the Seeds  
of *Malva verticillata* Stimulating the Phagocytic  
Activity of Cells of the RES\***

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An acidic polysaccharide, designated as MVS-IVA, was isolated from the seeds of *Malva verticillata* by the extraction with hot water followed by ion-exchange chromatography on DEAE-Sephadex A-25 (carbonate), affinity chromatography on Con A-Sepharose and gel chromatography on Sephacryl S-500 and Sephadex G-25. The purified substance gave a single peak on gel chromatography and gave a single band on PAGE.

MVS-IVA consists of L-arabinose: D-xylose: D-galactose: L-rhamnose: D-galacturonic acid in the molar ratio of 28:3:8:2:3 and also contains a small amount of protein. Its molecular mass was estimated to be  $4.47 \times 10^5$ . MVS-IVA showed a remarkable reticuloendothelial system (RES) potentiating activity in the carbon clearance test.

Chemical and spectroscopic studies demonstrated that the minimal unit of polysaccharide is composed of eight terminal  $\alpha$ -L-arabinofuranose, sixteen  $\alpha$ -1,5-linked L-arabinofuranose, four  $\alpha$ -1,3-linked L-arabinopyranose, three  $\beta$ -1,4-linked D-xylopyranose, eight  $\beta$ -3,6-branched D-galactopyranose, two  $\alpha$ -1,2-linked L-rhamnopyranose and three  $\alpha$ -1,4-linked D-galactopyranosyluronic acid residues. The controlled Smith degradation revealed the presence of a backbone chain composed of  $\beta$ -1,6-linked D-galactopyranosyl residues having branching points at position 3.

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