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Characterization of Polysaccharides Having Activity on the Reticuloendothelial System from the Rhizome of *Curcuma longa**

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The crude polysaccharide fraction was isolated from the rhizome of *Curcuma longa* by hot water extraction followed by precipitation with ethanol. It was fractionated by DEAE-Sephadex A-25 (carbonate) column chromatography, and the fraction having high activity was subjected to affinity chromatography on Con A-Sepharose and gel chromatography on Sephacryl S-300. Three polysaccharides, named ukonan A, ukonan B and ukonan C were obtained. They were homogeneous on electrophoresis and gel chromatography, and showed remarkable reticuloendothelial system (RES)-potentiating activity in a carbon clearance test even in a minute dose (5 mg per kg).

Among them, ukonan B is the major one in terms of the activity. It contains L-arabinose, D-xylose, D-galactose, D-glucose, L-rhamnose and D-galacturonic acid in the molar ratio of 12:4:12:1:2:4 in addition to 6.6% peptide moiety. The value of 3.3×10^4 was estimated for its molecular mass.

Methylation analysis and ^{13}C -NMR studies indicated that the minimal unit of ukonan B is composed of twenty-four terminal α -L-arabinofuranose, ten α -1,3-linked L-arabinopyranose, two α -1,5-linked L-arabinofuranose, two β -1,4-linked D-xylose, ten β -3,4-branched D-xylose, four terminal β -D-galactose, ten β -1,3-linked D-galactose, four β -1,6-linked D-galactose, eighteen β -3,6-branched D-galactose, two terminal α -D-glucose, one α -1,4-linked D-glucose, four α -1,2-linked L-rhamnose, two α -2,4-branched L-rhamnose and twelve α -1,4-linked D-galacturonic acid residues. Thus, ukonan B may be basically a kind of α -L-arabino- β -3,6-branched D-galactan.

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