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A Reticuloendothelial System-Activating Arabinoxylan from the Bark of *Cinnamomum cassia**

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The dried bark of *Cinnamomum cassia* is a very famous crude drug, Cinnamomi Cortex. We have isolated a neutral polysaccharide, named cinnaman AX, having high immunological activity on the RES from the hot water extract of this crude drug by treatment with sodium lauryl sulfate, sodium chloride and acetone followed by gel chromatography on Toyopearl HW-65F, Sephacryl S-500 and Cellulofine GCL-25 m columns. The polysaccharide gave a single spot on glass-fiber paper electrophoresis and gave a single peak on gel chromatography.

Cinnaman AX is composed of L-arabinose : D-xylose in the molar ratio of 4 : 3, and its molecular mass was estimated to be about 1.0×10^6.

The results of methylation analysis, periodate oxidation and ^{13}C-NMR spectrum suggested that the minimal unit of cinnaman AX is composed of twenty terminal α-L-arabinofuranose, one terminal β-L-arabinopyranose, twenty β-1,3-linked L-arabinopyranose, ten β-1,4-linked D-xylopyranose and twenty-one 3,4-branched β-D-xylopyranose units.

In addition, the controlled Smith degradation and partial hydrolysis studies revealed that cinnaman AX has a backbone chain composed of β-1,4-linked D-xylopyranose units. About 70% of the xylose residues in the backbone carry side chains composed of α-L-Ara*f*-(1→3)-β-L-Ara*p* and α-L-Ara*f*-(1→4)-β-D-Xyl*p*-(1→3)-β-L-Ara*p* units at position 3. There is one branching unit having a terminal β-L-arabinopyranose per twenty or twenty-six branching residues bearing the disaccharide and trisaccharide side chains.

The effect of cinnaman AX on a RES was demonstrated by the *in vivo* carbon clearance test. When administered i.p. (5, 20 and 50 mg/kg), the phagocytic indices of cinnaman AX were 0.1310 ± 0.0117, 0.1877 ± 0.0443 and 0.3120 ± 0.1054. Thus the values were remarkably increased, suggesting powerful activation of RES. Cinnaman AX is a new structural type of polysaccaride having a remarkable activity on the RES. The prominent presence of β-L-arabinopyranose units is especially characteristic.

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