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The Core Structure of Ukonan A, a Phagocytosis-Activating Polysaccharide from the Rhizome of *Curcuma longa*, and Immunological Activities of Degradation Products*

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The controlled Smith degradation of ukonan A, the representative phagocytosis-activating polysaccharide isolated from the rhizome of *Curcuma longa* L., was performed. The reticuloendothelial system-potentiating, anti-complementary and alkaline phosphatase-inducing activities of ukonan A and its degradation products were investigated. Methylation analyses of both the primary and the secondary Smith degradation products indicated that the core structural features of ukonan A include a backbone chain mainly composed of β -1,3-linked D-galactose, β -1,4-linked D-xylose and α -1,2-linked L-rhamnose residues. All of the galactose units in the backbone carry side chains composed of α -L-arabino- β -D-galactosyl or β -D-galactosyl residues at position 6.

Ukonan A has a remarkable effect on each of the three kinds of immunological activities. Periodate oxidation caused pronounced decrease or disappearance of the activities, but the controlled Smith degradation product having the core structure of polysaccharide showed considerable restoration of these activities. Thus the core structure contributes to the immunological activities investigated by us, though it is conceivable that the complicated branching structure in ukonan A may increase the effects on these activities.

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