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The Core Structure and Immunological Activities of Glycyrrhizan UA, the Main Polysaccharide from the Root of *Glycyrrhiza uralensis**

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The controlled Smith degradation and limited hydrolysis of glycyrrhizan UA, the main phagocytosis-activating polysaccharide isolated from the root of *Glycyrrhiza uralensis* FISCHER, was performed. The reticuloendothelial system-potentiating, anti-complementary and alkaline phosphatase-inducing activities of glycyrrhizan UA and its degradation products were investigated. Methylation analyses of primary, secondary and tertiary Smith degradation products and of the limited hydrolysis product indicated that the core structural features of glycyrrhizan UA include a backbone chain composed of β-1,3-linked D-galactose. All of the galactose units in the backbone carry side chains composed of mainly α-1,5-linked L-arabino-β-1,6- or 1,3-linked D-galactose residues at position 6. Removal of the arabinosyl side chains caused a pronounced decrease in immunological activity.

The polyol form product obtained by periodate oxidation followed by reduction enhanced the anti-complementary activity. This is the first example of such an effect on the activity by a polyol-type degradation product.

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