

[Yakugaku Zasshi, 110, 286 (1990)]

Polysaccharides in Fungi. XXV. Biological Activities of Two Galactomannans from the Insect-Body Portion of Chán huā (Fungus: *Cordyceps cicadae*).

TADASHI KIHU, KATSUKI NAGAI, IKUO MIYAMOTO, TOSHIKI WATANABE
SHIGEO UKAI*

Biological activities of two galactomannans (CI-P and CI-A) isolated from the insect-body portion of Chán huā (fungus: *Cordyceps cicadae*) were studied. CI-P having low affinity for concanavalin A (Con A) exhibited potent carbon-clearance activity in mouse, although both polysaccharides had little antitumor activity against sarcoma 180 in mice. Furthermore, CI-P and CI-A was found to have potent hypoglycemic activity in normal mice, CI-A having high affinity for Con A showed slightly higher activity than CI-P.

[Thermochimica Acta, 163, 89 (1990)]

A Differential Scanning Calorimetric Study of the Conformational Transitions of Several Kinds of (1→6) branched (1→3)-β-D-Glucans in a Mixture of Water and Dimethylsulfoxide.

S. KITAMURA, M. OZASA, H. TOKIOKA, C. HARA, S. UKAI*, T. KUGE

The thermal conformational transitions of seven kinds of (1→6) branched (1→3)-β-D-glucans were comparatively studied in a water-dimethylsulfoxide mixture containing 16.47 weight % of water by high-sensitivity differential calorimetry. It was found that the transition temperatures are correlated to the degree of branching for these glucans, suggesting that the side chain glucose contributes to the thermal stability of triple helix of (1→6) branched (1→3)-β-D-glucans.

[Food Hydrocolloids, 4, 105 (1990)]

Interaction of Thaumatin with Carrageenans. I. Effects of pH, Temperature and Competing Cations.

SHIRO OHASHI, FUMIKO URA, TAKASHI OCHI, HIROKI IIDA,
SHIGEO UKAI*

The sweetness intensity of thaumatin-carrageenan complexes was markedly reduced at pH 3-4, and reduced to a lesser extent at pH ≥ 5. There was also a temperature effect, with a change in absorbance at 60°C greatly different from that at 20°C. When Na⁺, K⁺ and Ca²⁺ were added to screen the negative charge of the carrageenans, there was no interaction with thaumatin. Since turbidity disappeared when these cations were added to suspensions of thaumatin-λ-carrageenan complex, it was assumed that thaumatin interacts with carrageenan via electrostatic bonding.