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Isolation and Characterization of Pectin from Pericarp of *Citrus depressa*

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A polysaccharide was extracted from the pericarp of *Citrus depressa* which was collected Ogimi Village, Okinawa, Japan. The yield of purified polysaccharide was 2.6% (w/w) based on fresh material. The contents of total carbohydrate, uronic acid, ash and moisture of the polysaccharide were 88.0, 78.0, 4.7 and 7.2%, respectively. The degree of methoxylation of the polysaccharide was estimated to be 62.9%. The purified polysaccharide was composed of D-galacturonic acid, D-galactose, L-arabinose, L-rhamnose, D-glucose and D-mannose in the molar ratio of 100 : 9.20 : 1.34 : 1.02 : 0.88 : 0.78 respectively. The molecular mass of the polysaccharide was estimated to be approximately 6.8×10^4 by gel chromatography. The specific rotation of the polysaccharide was $+149^\circ$ at 25°C , which indicated that the polysaccharide mainly had α -glycosidic linkages. The infrared spectra of the polysaccharide and the de-esterified polysaccharide were in agreement with those of standard pectin and de-esterified standard pectin over wide ranges of wave numbers. Chemical shifts of ^1H - and ^{13}C -NMR spectra of the polysaccharide and the de-esterified polysaccharide were also consistent with those of standard pectin and de-esterified standard pectin. NOESY spectroscopy showed that the polysaccharide contained (1 \rightarrow 4)-linked D-galacturonic acid residues. The polysaccharide and the de-esterified polysaccharide formed gels in the presence of sucrose under acidic conditions and of Ca^{2+} ions, respectively. These results indicated that the polysaccharide

extracted from the pericarp of *C. depressa* was a pectin.

Key words: pectin, *Citrus depressa*, high methoxyl

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