Polisaccharides from Cystocarpic Plants of the Red Seaweed *Callophyllis Variegata*

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Abstract: The crude polysaccharide from cystocarpic *Callophyllis variegata* was fractionated with potassium chloride yielding three minor fractions which precipitated between 0.05-0.10 M KCl, 1.20-1.25 M KCl and 1.80-2.00 M KCl, and a main product soluble in 2.00 M KCl. These fractions were analysed and structural analysis of the major one was carried out by methylation, FT-IR and ^{13}C NMR.

Introduction

Callophyllis variegata belongs to the family Kallymeniaceae and there are only two previous studies [1,2] on seaweeds from the same genus, *Callophyllis rhynchocarpa* and *Callophyllis hombroniana*. These studies report the isolation of carrageenan-type polysaccharides.

Experimental

The crude polysaccharide and the fractions were analyzed using the methods mentioned in ref. [3]. The fraction soluble in 2.00 M KCl was converted into the corresponding triethylammonium salt and was methylated by the Hakomori procedure as described in ref. [3]. The samples were subjected to reductive hydrolysis and further acetylation, and were analyzed by GC [3]. The D:L-galactose ratio was determined by the method of ref. [4].

Results and discussion

Cystocarpic plants of *Callophyllis variegata*, collected in Puerto Deseado (Provincia de Santa Cruz), were extracted with water at room temperature and the crude product was analyzed (carbohydrate content, sulphate, primary sulphate and protein; composition in monosaccharides, D:L-galactose ratio). These analyses showed a molar ratio Gal:3,6-AnGal:sulfate of 1.00:0.24:0.56 and the absence of L-galactose suggesting the presence of a carrageenan. The usual way to fractionate a system of carrageenans is based on the solubility of the component polysaccharides in solutions of different potas-

sium chloride concentration; the preparative fractionation yielded three fractions which precipitated between 0.05-0.10 M KCl, 1.20-1.25 M KCl and 1.80-2.00 M KCl, and a main product soluble in 2.00 M KCl. These fractions were analyzed as described for the crude polysaccharide. Chemical analysis of the soluble fraction gave a molar ratio Gal:3,6-AnGal:sulfate of 1.00:0.16:1.47 and a D-:L-galactose ratio of 5.5:1.0. The structural analysis (methylation, FT-IR and ^{13}C NMR) of this fraction will be reported.

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References and Nores

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