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EXTRACTION AND CHARACTERIZATION OF POLYSACCHARIDES FROM THE LICHEN *Usnea cf cornuta körb*

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Lichens are symbiotic organisms. The two different organisms involved in the symbiosis are known as the photobiont, which may be an alga or cyanobacteria, and a mycobiont which is a fungus. The polysaccharide components have been analyzed and characterized for a few *Usnea* species. The common types of polysaccharides present in *Usnea* lichen species are glucans [(1 ⟶ 3) -ß-glucopyranosyl / (1⟶ 3)-ß-glucopyranosyl] and galactomananns [(O-2)-α-D-galactopyranosyl (O-4)-α-D-galactopyranosyl (1 ⟶ 6)-α-D-manopyranosyl]. They are polymers of glucose, galactose and mannose. Research on the analysis of polysaccharide components of this lichen species are not known to the best of our knowledge. The present study evaluates the carbohydrate composition of a polysaccharide that was extracted from the lichen species *Usnea cf cornuta körb*.

In this study, the air dried Lichen thalli which were collected from the Ambewela area in the Nuwara Eliya district, were powdered and subjected to a series of solvent extractions with chloroform: methanol (2:1) and 80% methanol for removal of low molecular weight compounds and then it was subjected to aqueous and alkaline extractions at 100 ºC. The yield of isolated polysaccharides from the aqueous extract was 2.46% and the yield from the alkaline extract was 6.14%.

The Molisch test was used as a preliminary test for detection of carbohydrates. Thereafter the polysaccharides in the aqueous extract were hydrolysed using 2.5M HCl and the sugar components of those polysaccharides were identified by using descending paper chromatographic analysis. Finally the co-paper chromatographic analysis and Osazone formation test were carried out to tentatively identify the sugar component in the aqueous extract in the lichen polysaccharides.

Glucose and galactose were the major monosaccharide components of the polysaccharides which were isolated from the hot water extract.