

Scleroglucans Discover

Description

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Fig. 1 Schematic representation of the repeating unit of Scleroglucan

These polysaccharides often form a triple helical conformation with a tendency to give a physical gel. Scleroglucan, lentinan, schizophyllan,... all share similar structures and conformations. Their solubility increases in alkaline conditions, but an irreversible helix-coil transition occurs over $\text{pH} > 12$. Many of the polysaccharides belonging to this family are claimed to have anti-tumoral properties.

These $\alpha(1\rightarrow3)$ / $\alpha(1\rightarrow6)$ -glucans have been investigated mainly in relation to their biological activity, in addition to their applications as good thickening agents. Lentinan, is produced by the fungus *Lentinus edodes*. It has a $\alpha(1\rightarrow3)$ -D-glucopyranosidic backbone with two $\alpha(1\rightarrow6)$ glucopyranosidic branches every five glucose residues in the main chain. It has been approved as an anti-tumour agent against stomach cancer in Japan. Schizophyllan is produced by the fungus *Schizophyllum commune* and scleroglucan by *Schizophyllum rolfii* or *Botryosphaeria* sp. They have the same backbone as lentinan but a single $\alpha(1\rightarrow6)$ -D-glucopyranosidic unit as side chain.

Scleroglucan is the name given to a class of fungal polysaccharides secreted exocellularly by certain fungi of the genus *Sclerotinia*. The polysaccharide produced by *Sclerotium ghcanicum* has been widely studied, but it is the exopolymer from *Sclerotium rolfii* that is produced commercially at this time. Scleroglucan is a neutral polysaccharide. The optical rotary behaviour supports the concept (see below) that an ordered conformation exists in water and this is further corroborated by the absence of ^{13}C -NMR signals for solutions in this solvent. The triple helical arrangement of scleroglucan has been established reference-in-status-bar.

Category

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