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Barley β -glucans: a new method for extraction and purification

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Barley β -glucans are non-starchy polysaccharides that are composed of linear chains of β -D-(1 \rightarrow 3) and β -D-(1 \rightarrow 4) linked glucose residues. They comprise three (cellotriosyl) or four (cellotetraosyl) consecutive β -D-(1 \rightarrow 4) bonded glucose units mutually connected *via* β -D-(1 \rightarrow 3) glycosidic bonds. These polysaccharides can be found in the aleurone layer of the barley grain endosperm¹. It has been shown that β -glucans reduce blood cholesterol and influence postprandial glucose levels which makes them health beneficial. Also, they have been used as stabilizing and thickening agents in the food industry^{1,2}. Due to the presence of β -D-(1 \rightarrow 3) glycosidic bond, β -glucans are water soluble. The extraction procedure of these polysaccharides involves several steps that include the inactivation of endogenous enzymes found in the grain, extraction with water or alkali solutions, implementation of hydrolytic enzymes so that starch and protein removal is possible and precipitation of β -glucans from the purified solution with alcohol³. We have developed a new protocol that enables the extraction of β -glucans without the coextraction of starch and the implementation of hydrolytic enzymes for starch removal, which makes the process of purification shorter and less expensive. The extracted and purified glucans were further characterized by FTIR spectroscopy and microanalysis.

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