

Structural Diversity and Functions of Food Polysaccharides

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Summary

Carbohydrate polymers, produced approximately 10^6 tons a year, are wide spread in nature. Among them, starch and glycogen act as the most important suppliers of biological fuel. In contrast cellulose, other β -glucans and some indigestible glycans, e.g. pectinic substances and plant gums, seaweed polysaccharides, and even highly viscous microbial polysaccharides, have recently been recognized as good dietary fiber. Apart from their physiological function, significant progress in physical polymer science has been made in evaluating carbohydrate polymers as important players in food processing technology, such as, emulsion stabilizers, gelling and thickening agents etc. In connection with this, it must be emphasized that the unique functionality of the polysaccharide is closely related to the molecular-shape of individual polysaccharides that are regulated by primary structural features of the building units.

The third topic in this series is, therefore related to the structural dependence of the rheological and physiological characteristics of Asian traditional, two gel-forming acidic plant polysaccharides, a new fungal α -glucan having potential utilization, molecular structure and biological effects of chitin and chitosan, and also high-dp cyclodextrins, *etc.*