

APPLICATION OF ENZYME BIOTECHNOLOGY TO THE MANUFACTURE OF CARBOHYDRATE FUNCTIONAL FOOD INGREDIENTS

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Recent years have seen many developments in biotechnology which are facilitating the manufacture of functional carbohydrates. These include glycosidase-based enzymatic synthesis approaches and controlled degradation of polysaccharides. The enzymology and reactor engineering of such systems is being addressed currently.

In addition, increasing knowledge of the structure-function relationships in dietary functional carbohydrates is providing us with new targets for development. Such targets include prebiotic oligosaccharides with increased colonic persistence, prebiotics targeted at particular species of probiotic micro-organism and oligosaccharides with antiadhesive activity which can reduce adhesion of pathogenic bacteria to their cellular receptors.

Enzyme biotechnology is also facilitating the development of novel functional carbohydrates from renewable resources and from agricultural co-products such as sucrose, citrus pectin and sugar beet pulp.

This lecture will discuss recent research developments in this area.