

Functional oligosaccharides chemicals structure, manufacturing, health benefits, applications and regulations



Osama O Ibrahim

ABSTRACT

Functional oligosaccharides are non-digestible by human gut enzymes and providing health benefits as fibers and prebiotics. Functional oligosaccharides have mildly sweet taste and other characteristics such as, mouth feeling. This mouth feeling

characteristic interest food industry to incorporate these functional oligosaccharides in foods as a partial substitute for fat and sugars and to improve food texture. With the exception, of malto-oligosaccharides and trehalose, functional oligosaccharides are non-digestible in small intestine digestive enzymes and reached large intestine (colon) where it acts as a growth factor (prebiotics) to enhance the growth of beneficial bacteria (probiotics) and inhibit pathogenic bacteria in the colon via competitive exclusion. These benefits to colon and for other health benefits, plus unique characteristics have increased the global market of functional oligosaccharides applications in foods, pharmaceuticals and in other industrial sectors. Due to the increase demand of functional oligosaccharides for their health benefits and characteristics, functional oligosaccharides are currently produced

enzymatically at higher yield and lower cost from different natural sources of carbohydrates as a replacement of costly plants extraction methods.

BIOGRAPHY

Osama O Ibrahim is a highly-experienced principal research scientist with particular expertise in the field of microbiology, cell biology and bioprocessing for both bio pharmaceuticals and food bio-ingredients. He is knowledgeable in microbial screening, culture improvement, molecular biology, genetic engineering, fermentation research (antibiotics, enzymes, therapeutic proteins, organic acids), biochemistry

(metabolic pathways, enzymes kinetics, enzymes immobilization, bioconversion) and analytical biochemistry. He received his B.S. in Biochemistry with honour and two M.S. degrees in Industrial fermentation and in Microbial physiology. He received his Ph.D. in Basic Medical Science (Microbiology, Immunology and Molecular biology) from New York Medical College.

PUBLICATIONS

Identified emerging technology in microbiology, enzymology and molecular biology and established the potential ones for Kraft foods business.

Initiated external researchers projects with several Universities and Provided technical support and evaluation for these projects.

Maintained literature surveillance / expertise in emerging Bio-technologies for biotechnology industries

Provided microbial support, HACCP plan evaluation, and raw materials specifications for food manufacturing

Evaluated emerging rapid microbial detections and diagnostics for food safety.

Developed food bio-preservation systems for several Kraft food products, and evaluated several emerging physical preservation technologies.

4th Global Summit on Food science and Healthcare Nutrition, Zurich | March 11-12, 2020

Bio Innovation, USA

Abstract Citation: Osama O Ibrahim, Functional oligosaccharides chemicals structure, manufacturing, health benefits, applications and regulations, Food science 2020, 4th Global Summit on Food science and Healthcare Nutrition, Zurich, March 11-12, 2020, 01