

## Functions of Physiologically Active Oligosaccharides

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### DESCRIPTION

Oligosaccharides are the saccharide polymers comprised of 3 to 10 basic sugars, which are also known as monosaccharides. These are linked together by glycosidic bonds. These stimulate the growth of some bacteria and increase resistance to invading pathogens. Oligosaccharides are considered prebiotics. The greater part of oligosaccharides can't be separated by the human gastrointestinal system. Small amounts of oligosaccharides are present naturally in plants. Also found in onions, garlic, legumes, wheat, asparagus and other plant foods.

Table sugar, also called as sucrose is comprised of two sugars namely glucose and fructose. Glycoproteins and glycolipids are covalently linked to carbohydrates. They are numerous on the cell surface and interactions between them helps in maintaining the cell stability by itself. Glycoproteins are the peculiar oligosaccharide structures of glycoproteins which have a major impact on many of their characteristics, especially on antigenicity, solubility and protease resistance.

Glycolipids have a crucial impact in changing the function of membrane proteins that serve as receptors and in the recognition of cells. In the lipid bilayer, glycolipids are lipid molecules attached to oligosaccharides. They can also act as receptors for cell signaling and cellular recognition. The composition of the oligosaccharides that are exposed above the surface of the membrane, affects the binding mechanisms of receptors to those oligosaccharides. Glycolipids are a significant target for infections because of the diversity in their binding mechanisms. For example, research on the chaperone action of glycolipids in respect to HIV infection.

Some of the dietary oligosaccharides are fructo-oligosaccharides, galacto-oligosaccharides and mannan oligosaccharides. Fructo-Oligosaccharides (FOS), which are tracked down in numerous vegetables are short chains of fructose atoms. They are different from fructans. For example, inulin which as a polysaccharide has a high significant level of polymerization than FOS and different oligosaccharides like inulin and other fructans are viewed as

solvent dietary fiber. Galacto-Oligosaccharides (GOS) are comprised of short chains of galactose atoms. Human milk contains oligosaccharides known as Human Milk Oligosaccharides (HMOs), which are from lactose. Mannan-Oligosaccharides (MOS) are the prebiotics which are composed of complex carbohydrate molecules. They are derived from the outer cell walls of *Saccharomyces cerevisiae*. Mannan oligosaccharides vary from different oligosaccharides such that they are not fermentable and their essential method of activity incorporates agglutination of type-1 fimbria microbes and immunomodulation.

A significant deterrent in glycobiology and glycomedicine is the absence of unadulterated and starches and glycoconjugates. Distinct oligosaccharides are derived by synthetic or enzymatic synthesis and such mixtures are progressively used to resolve significant issues in glycobiology research, immunization and medication revelation. Consortium of Functional Glycomics (CFG) has utilized a chemo-enzymatic approach i.e., more than 400 oligosaccharides are from N- and O-connected glycoproteins and glycolipids. Glycan exhibit innovation has been utilized for influenza infection as the species explicit nature of the communication among infection and host glucans.

### CONCLUSION

Oligosaccharides are the polymers comprised of basic sugars, which are also known as monosaccharides. Glycoproteins and glycolipids are covalently linked to carbohydrates. They are numerous on the cell surface and interactions between them helps in maintaining the cell stability. The composition of the oligosaccharides that are exposed above the surface of the membrane, affects the binding mechanisms of receptors to those oligosaccharides. Glycolipids are a significant target for infections because of the diversity in their binding mechanisms. Fructo-oligosaccharides (FOS), which are found in numerous vegetables, are short chains of fructose atoms which are different from fructans. Mannan oligosaccharides are derived from the outer cell walls of *Saccharomyces cerevisiae*.

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