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## Sugar alcohols: Chemical structures, manufacturing, properties and applications

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Sugar alcohols (Polyols), are currently used as bulk sweeteners in reduced calorie foods. They are part of human diet for thousands of years and are present in fruits such as pears, melons and grapes as well as mushrooms and fermentation foods (wine, soy sauce and cheese). The most common sugar alcohols that are available in the market are sorbitol, mannitol, xylitol, erythritol, isomalt, lactitol, maltitol and hydrogenated starch hydrolysates (HSH). Sugar alcohols are believed to be good sugar substitutes for people with diabetes plus they do not contribute to dental caries (cavities). Their caloric values are generally half that of sugar sucrose plus they have a very low glycemic index, which are great for controlling blood sugar levels. Chemical structures of sugar alcohols are a hybrid between sugar molecule and an alcohol molecule. However they are neither a sugar nor an alcohol.

### Biography

Osama O Ibrahim is a highly-experienced Principal Research Scientist with particular expertise in the field of microbiology, molecular biology, food safety and bioprocessing for both pharmaceutical and food ingredients. He is knowledgeable in microbial screening, culture improvement; molecular biology and fermentation research for antibiotics, enzymes, therapeutic proteins, organic acids and food flavors; biochemistry for metabolic pathways and enzymes kinetics, enzymes immobilization, bioconversion and analytical biochemistry. He was an External Research Liaison for Kraft Foods with Universities for research projects related to molecular biology and microbial screening and holds three bioprocessing patents and multiple publications. Upon his retirement from Kraft Foods he established his own biotechnology company providing technical and marketing consultation for new startup biotechnology and food companies. He has received his BS in Biochemistry with honor and two MS degrees in Microbial Physiology/Fermentation and in Applied Microbiology. He has received his PhD in Basic Medical Science (Microbiology, Immunology and Molecular biology) from New York Medical College. He is a Member of American Chemical Society, American Society of Microbiology and Society of Industrial Microbiology since 1979.

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