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### The nature of prebiotics and the impact of prebiotics/probiotics on gut health

Prebiotics are the fermentable, non-digestible carbohydrates that stimulate as nutrients the growth and the activity of beneficial bacteria (probiotics) in the digestive system. There are two prebiotics categories: Prebiotics fibers that are naturally occurred in whole grain, broccoli, asparagus, radish, cabbage, etc, and Prebiotics oligosaccharides such as Fracto-oligosaccharide (FOX), Galacto-oligosaccharides (GOS), Xylo-oligosaccharides (XOS), polydextrine etc. These prebiotics oligosaccharides are increasingly added to foods for their health benefits and are not labeled as fibers in the United States. Prebiotics oligosaccharides are synthetically manufactured or extracted from plants in pure forms. Probiotics are the beneficial bacteria in the colon such as Bifidobacteria and lactic acid bacteria. These probiotics bacteria assist in the maintenance of the natural balance of micro flora in the digestive system to reduce the effect of the harmful and pathogenic bacteria in the digestive system, suggesting that these probiotics bacteria can prevent gastrointestinal tract from infection diseases and reduce gut inflammation. It is also, assumed that probiotics bacteria strengthen the immune system. Synbiotics are products that contain both prebiotics and probiotics. These products have the non-digestible carbohydrates source (prebiotics) and the good bacteria (probiotics) Manufacturing of the major prebiotics oligosaccharides and the impact of synbiotics on gut health will be highlighted in this presentation.

### Biography

Osama O Ibrahim received his B.S. in Biochemistry with honor and two M.S. degrees in Microbial physiology/ Fermentation and in Applied Microbiology. He received his Ph.D in Basic Medical Science (Microbiology, Immunology and Molecular biology) from New York Medical College. His research dissertation was on the construction of plasmid for the expression of a fusion protein of VEGF121/ Shiga-like toxin as a therapeutic protein for targeting angiogenesis (cancer treatment). Since 1979 he is a member of American Chemical Society, American Society of Microbiology, and Society of Industrial Microbiology.

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