

## **Next generation probiotics, prebiotics and postbiotics: Composition, activities and their potential applications throughout the life span**

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### **Abstract**

The characteristics of the gut microbiota in healthy human had been well defined throughout the whole life span. Definite changes in the gut microbiome dysbiosis is closely related to development of chronic inflammation related disease. The modulation of the intestinal microbiome by next generation probiotics (NGP), prebiotics and postbiotics provides novel strategies that may be effectively applied for treatment of such aberrations. The molecular mechanisms by which probiotics and prebiotics exert their action are by modulating signaling pathways of the gut microbiota. NGPs have well defined specific functional characteristics besides the well-known ones. Prebiotics are mainly non- starch polysaccharide molecules that resist the acid and enzymatic hydrolysis in the stomach and the gut and reached the colon intact, where they are selectively fermented by the colon microbiota to confer health benefits. The fermentation products including free energy, short chain fatty acids mainly butyrate, the fuel of the colonocyte, low colonic pH lead to numerous health benefits, such as inhibition of the development of pathogens, reducing the prevalence and duration of diarrhoea, increases the absorption of minerals, mostly of magnesium and calcium, and providing relief from inflammation and other symptoms associated with intestinal bowel disorders. Recently, postbiotics have drawn attention and they include metabolic byproducts secreted by live bacteria, such as enzymes, peptides, peptidoglycan, polysaccharides, cell surface proteins, and organic acids.



### **Biography:**

Laila Hussein she is a researcher in National Research Center, Egypt

Department of Food Sciences and Nutrition and her Molecular profile of the gut microbiota among young and adult Egyptians Epidemiological nutritional studies to assess the intake of selected essential nutrients in re action to standard norms and formulation and evaluation of the efficiencies of selected fruit rich in phytochemicals and fermented foods rich in probiotics on the colon function and the overall health status among children, adolescents and adults

### **Speaker Publications:**

1. An Investigation on the Fatty Acid Content of Breast Milk from Mothers Residing in Low Socioeconomic Areas of Egypt

26<sup>th</sup> European Nutrition and Dietetics Conference; Berlin, Germany - April 20-21, 2020

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