

A RAISING INTEREST: GUT MICROBIOTA-PROBIOTIC RELATIONSHIP

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The human intestinal tract that contains up to 10^{14} microorganisms is extremely complex ecosystem where microbiota, nutrients and host cells are in interaction. The diverse microbial community of the human GIT encompasses both obligate and facultative anaerobic microorganisms. Depend on the effect; the intestinal microbiota on human body can be classified as harmful, beneficial or neutral. For instance; *Bifidobacterium* and *Lactobacillus* species can contribute to digestion, stimulation of immune system and inhibition of pathogens. Otherwise, species such as *Bacteroides*, *Escherichia* and *Clostridium* are capable of producing harmful substances including amines, indole, hydrogen sulfide and phenols. Therefore the correct balance of these various bacterial communities makes up gut microbiota crucial for the homeostasis and an active element of the gut physiology with many functions. Several diseases, called dysbiosis, have been associated to bacterial unbalance. Administration of live bacteria (probiotics) and non-digestible substrates (prebiotics) modulates gut microbiota and prevents and/or cures some diseases. According to the in vitro and animal model studies there are three modes of probiotic action: The first mode of probiotic action is the modulation of the host's microbiota, called barrier effect, by preventing or limiting pathogenic bacteria with production of metabolites with antimicrobial activity such as bacteriocins, bio surfactants or low pH. Secondly, probiotics may act to the level of signaling pathways leading to the increase of mucus layer or to the production of defenses by paneth cells. The third mode of probiotic action is modulation of gut immune system by stimulation of secretory IgA production.

Keywords: Gut microbiota, probiotics, probiotic effect

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