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Probiotics and some immunological aspects

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Probiotics are living micro-organisms which when consumed in adequate amounts confer a health effect on the host. It play important role in immune enhancement, Lactobacilli having ability to adhere to human intestinal epithelial cells and activating macrophage. Immune regulations by an increased ability to produce IL-10 and promote T-regulatory cell function. Addition of *L. paracasei* NCC2461 to lymphocyte culture showed that strongly inhibit the proliferative activity of CD-4+ T-cells in a dose dependent manner and inducing the anti-inflammatory cytokines IL-10 and TGF-beta. Probiotics used as vaccine adjuvant, supplementation of infants with *L. casei* GG due to increased serum levels of rotavirus specific antibodies IgA and IgM with 8 fold. Probiotics have a great benefit in treatment of chronic inflammatory bowel disease by their immunomodulatory and bowel flora manipulating properties. HIV/AIDS prevention by Probiotic yogurt consumption which supplemented with *Lactobacillus rhamnosus* was associated with a significant increase of CD4 among people living with HIV/AIDS. Probiotic consumptions by Type-2 diabetes mellitus patients due to increased expression of adhesion proteins which reduce intestinal permeability impairing the activation of TLR4 by bacterial LPS, NFkB activation pathways are blocked. The induction of TH17 cells is also inhibited, preventing pancreatic infiltration of CD8+ T cells. Probiotic improve the balance of intestinal microbe, reduced inflammation and promote mucosal tolerance. It has additional or supplementary therapy for allergic airway diseases, anti-inflammatory effect and may have great role in preventing of asthma. Purified bifidobacterial has cell wall anti-tumor activities and induces activation of phagocytes to destroy growing tumor cells. Some immunological adverse events was observed when probiotics administered parenterally, bacterial cell wall components, induce side effects such as fever, arthritis or autoimmune diseases which mediated by cytokines. A systemic uptake of cell wall polymers from the intestinal lumen induces colonic injury in rats. Auto-immune hepatitis may enhanced by ingestion of large doses of yoghurt.

Biography

Samer M Al-Hulu is an Assistant Professor of Microbiology. He has completed his PhD from Babylon University/College of Science. He has published more than 14 papers in Microbiology field. He has trained at Ministry of Health at Laboratory of Babylon Maternity and Children Hospital. He is presently working at Al-Qasim Green University/ College of Food Science.

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