

Role of Probiotics in the Enhancement of Immune System

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DESCRIPTION

Probiotics are made from members of genera, such as *Bacillus licheniformis*. Probiotics are commonly used to prepare nutrition and are present in fermented foods and fermented milk. They are referred to as "health bifidobacteria" and they also provide a variety of health benefits, including the prevention of bowel diseases, enhancement of the immune system, improvement of lactose intolerance, intestinal microbial balance, alleviation of postmenopausal disorders, and reduction of adventurer's diarrhoea. Their applications in the treatment of skin and oral illnesses have also been the subject to recent studies. Probiotic regulation of the gut-brain has been identified as a potential therapeutic approach for the treatment of anxiety and depression. Probiotics have been used to prevent intestinal disorders by enhancing the immune system, acting as an anti-hypercholesterolemic factor, improving oral and dermal health, and acting as anti-anxiety and anti-depressive agents. Current probiotics-based products show how probiotics have been used to prevent intestinal disorders.

Among the numerous intestinal microbes, these probiotics have the ability to improve the host's health by altering the intestinal microbiota. The healthy probiotic bacterial strains include species from the genera *Lactobacillus* and *Bifidobacterium*, *L. acidophilus*, *L. casei*, *L. plantarum*, *B. lactis*, *B. longum*, and *B. bifidum* species. Probiotics are considered to provide a number of important health advantages, including as enhancing the immune system, lowering cholesterol levels, preventing cancer, treating diarrhoea caused by IBS (Irritable Bowel Syndrome), reducing blood pressure, and improving lactose metabolism. Probiotic bacterial strain, have a number of characteristics with safety issues accorded primary importance. Because of extensive human use, strains of the *Lactobacillus* and *Bifidobacterium* genera are typically recognized as harmless.

While determining the safety of probiotics, it is important to consider factors like pathogenicity and infectivity, intrinsic

qualities, and virulence factors associated with toxicity and metabolic activity of the bacteria. It is also crucial that probiotics remain active and viable while being stored and moving through the GIT. The GIT and the stomach have the highest levels of acidity; therefore it's essential to know how microorganisms function and how they migrate. To identify potential probiotics, screening method is used and to know how *in vitro* models typically resemble the GIT's characteristics. Colonisation and potential health benefits can only be anticipated when the viable cells are able to survive through the natural barriers that exist in the GIT such as low pH conditions and degradation by digestive enzymes as well as by bile salts.

To promote effective host-microbial interactions, probiotic adhere to the host tissues, particularly to intestinal mucus and epithelial cells. *In vitro* culture characteristics such as microbial cell density, buffer components, fermentation time, and growth medium are different from *in vivo* conditions such as gut flora, digestion, and meal substrate. In both *in vitro* and *in vivo* animal models, probiotic organisms are increasingly recognised for their capability to prevent and/or treat intestinal diseases and improve the immune system. However, as probiotics rarely become permanently colonised, frequent intake of oral probiotics is required. The adherence of probiotic bacteria to the human tissues depends on a variety of conditions.

CONCLUSION

Probiotics have a significant ability to treat many diseases or prevent infections. Probiotics play an important role in the host immunological response, boosting the immune system and enhancing the health of the host. Probiotics have a significant impact on the immune system because of the probiotic bacteria's immunogenic actions and capacity to interact with host tissues. Probiotics affect the immune system in order to treat and prevent various diseases. The immune system is significantly affected by the appropriate probiotic and prebiotic combination.

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