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# Modulation of the Immune System Mechanisms using Probiotic Bacteria in Allergic Diseases: Focus on Allergic Retinitis and Food Allergies

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## Abstract

Allergic illnesses occur when an organism's immune system is excessively responsive to certain antigens, such as those that are presented in the environment. Some people suffer from a wide range of immune system-related illnesses including allergic rhinitis, asthma, food allergies, hay fever, and even anaphylaxis. Immunotherapy and medications are frequently used to treat allergic disorders. The use of probiotics in bacteriotherapy has lately gained interest. Probiotics are essential to human health by modulating the gut microbiota in some ways. Due to probiotics' immunomodulatory properties present in the gut microbiota of all animals, including humans, these bacterial strains can prevent a

wide variety of allergic disorders. Probiotic treatment helps allergy patients by decreasing inflammatory cytokines and enhancing intestinal permeability, which is important in the battle against allergy. By altering the balance of Th1 and Th2 immune responses in the intestinal mucosa, probiotics can heal allergic disorders. Numerous studies have shown a correlation between probiotics and a reduced risk of allergy disorders. A wide range of allergic disorders, including atopic dermatitis, asthma, allergic retinitis and food allergies has been proven to benefit from probiotic bacteria. Therefore, the use of probiotics in the treatment of allergic diseases offers a promising perspective. Considering that probiotic intervention in the treatment of diseases is a relatively new field of study, more studies in this regard seem necessary.

**Keywords:** Immune system; allergic retinitis; atopic dermatitis; dendritic cells.; epithelial cells; probiotics.

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