

Using intranasal and oral gavage to study improving allergy effects and mechanisms of probiotics formula in asthma mouse model

謝文齊 (5136)

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Outline

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Abstract

Asthma is a disease of chronic lung inflammation and bronchial overreaction. The allergic reaction that dominates asthma belongs to Type I hypersensitivity reactions, which can cause inflammatory cell infiltration, bronchoconstriction and lung inflammation, leading to patients experience symptoms such as wheezing, chest tightness, or coughing. *Lactobacillus plantarum* is a multifunctional lactic acid bacterium, which usually exists in the human gastrointestinal tract, and has the largest genome among lactic acid bacteria, so it has strong adaptability. Previous studies have shown that *Lactobacillus plantarum* inhibits pro-inflammatory cytokines by reducing Th2 cells and slows the inflammatory response caused by pro-inflammatory cells such as neutrophils. However, in the mast cell degranulation experiment, the addition of probiotic samples could not slow down the cell degranulation phenomenon, so it is speculated that *Lactobacillus plantarum* cannot directly act on immune cells, but slows down the inflammatory response through the mucosa or other channels. Therefore, this study used OVA (Ovalbumin, OVA) to induce asthma in BALB/c mice, and explored the effect and mechanism of probiotics in improving symptoms by intranasal and oral gavage. The results show that probiotics can improve asthma by increasing Th1 cytokines and inhibiting Th2 cytokines to regulate Th1/Th2 balance, reducing IgE production to alleviate inflammation, and increasing Treg to inhibit Th17 cytokines to reduce mucus secretion, thereby improving asthma Symptoms, expect to become a health food to improve asthma.

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