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The effect of lactic acid bacteria expressing IFN- γ on the production performance of white-feathered broilers

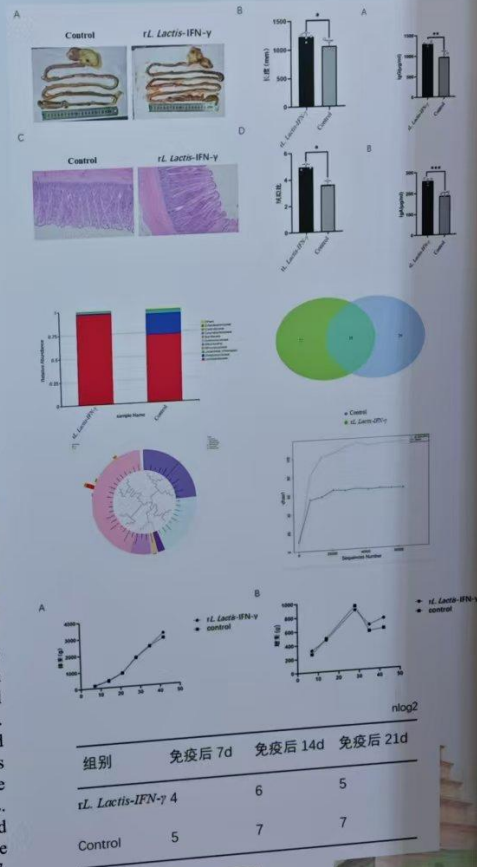
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Abstract: Lactic acid bacteria, as probiotics, are widely used in livestock and poultry breeding and have been proven to improve the growth performance, intestinal health and immune function of animals. Interferon- γ (IFN- γ) is an important immune regulatory factor and has the potential to enhance the immune response and disease resistance of the body. This study aimed to evaluate the effects of recombinant *Lactococcus lactis* expressing IFN- γ (rL. *Lactis*-IFN- γ) on the growth performance, intestinal health and immune response of broilers, providing a theoretical basis for the application of IFN- γ recombinant lactic acid bacteria in broiler breeding. White-feathered broilers, known for their fast growth rate and high feed conversion rate, are an important source of global meat supply. To explore the effect of rL. *Lactis*-IFN- γ on the growth performance of white-feathered broilers, this experiment selected Avian white-feathered broilers as experimental animals and randomly divided them into two groups. The rL. *Lactis*-IFN- γ (rL. *Lactis*-IFN- γ group) and PBS (Control group) were added to the diet respectively, and the feeding lasted for 35 days. The growth performance indicators, intestinal index and changes in immune function-related indicators were measured to evaluate the effect of rL. *Lactis*-IFN- γ on broilers. The results showed that compared with the Control group, the body weight gain of broilers in the rL. *Lactis*-IFN- γ group was significantly increased, and the feed conversion ratio was significantly reduced, and the breast muscle index was significantly increased. From the perspective of intestinal health, the total intestinal length and villus/crypt ratio of broilers in the rL. *Lactis*-IFN- γ group were significantly increased, and the microbial abundance in the jejunum was significantly increased. In terms of immunology, the levels of IgG and IgA in the serum of broilers in the rL. *Lactis*-IFN- γ group were significantly increased, and the antibody titer against Newcastle disease in the serum was higher than that of the Control group at 7, 14 and 21 days after immunization. The above results indicate that the addition of rL. *Lactis*-IFN- γ to the diet can improve intestinal health, promote the absorption of nutrients, and significantly enhance the growth performance and immune capacity of broilers.

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投稿