Adjuvant effects of *Lactobacillus* on enhancing immune responses and anti-influenza virus in mice

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2021/10/20

Outline

1. Introdution
2. Nasal priming with immunobiotic lactobacilli improves the adaptive immune response against influenza virus
3. Adjuvant effects of killed *Lactobacillus casei* DK128 on enhancing T helper type 1 immune responses and the efficacy of influenza vaccination in normal and CD4-deficient mice
4. Conclusion

Abstract

Influenza virus (IFV) is responsible of a highly contagious disease that has a substantial impact on global health. This virus is a major respiratory pathogen that causes a high degree of morbidity and mortality, especially in immunocompromised hosts. Natural components like probiotics have been severally studied and have been proved to be a safe alternative prophylactic and therapeutic approach for modulating immune responses via the induction of the newly described process of trained immunity. *Lactobacillus* is able to improve both the humoral and cellular adaptive immune responses induced by IFV infection or vaccination. Through the differential regulatory cytokines induced by *Lactobacillus* contributed to the protection against IFV without inducing inflammatory-mediated lung damage. Combining the above results, *Lactobacillus* can as a potential vaccine adjuvant, promoting the adjusting the pathways of innate and adaptive immunities through maintaining the balance between Th1 and Th2 lymphocytes in mice to enhancing protective efficacy of influenza vaccination.

➢ References

Jung, Yu-Jin, *et al.* "Adjuvant effects of killed *Lactobacillus casei* DK128 on enhancing T helper type 1 immune responses and the efficacy of influenza vaccination in normal and CD4-deficient mice." *Vaccine* 38.36 (2020): 5783-5792.

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