

## Effect of *Trichinella spiralis* infection on the immune response to HBV vaccine in a mouse model

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Vaccination is the most effective and cost-saving way to hepatitis B virus (HBV) infection. Collective data suggest that helminth infections affect immune responses to some vaccines. Therefore it is important to reveal the effects of helminth infections on protective vaccines efficacy in countries with highly prevalent helminth infections. In the present work, effects of *Trichinella spiralis* infection on the protective efficacy of HBV vaccine in a mouse model were investigated. This study demonstrated that the enteric stage of *T. spiralis* infection could inhibit the proliferative response of spleen lymphocytes to hepatitis surface antigen (HBsAg) and lead to lower levels of anti-HBsAg antibodies, IFN- $\gamma$  and IL-2, along with higher levels of IL-4 and IL-5. However, these immunological differences are absent in the muscle stage of *T. spiralis* infection. The results suggest that the muscle stage of *T. spiralis* infection does not affect the immune response to HBV vaccination, while the enteric stage infection results in a reduced immune response to HBsAg.

**Keywords:** *Trichinella spiralis*; protective efficacy; hepatitis B; vaccine

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