



Tuberculosis Vaccine Research: Inducing Immune Memory and Regulation

Guest Editor:

Prof. Dr. Bingdong Zhu

1. Lanzhou Center for
Tuberculosis Research, School of
Basic Medical Sciences, Lanzhou
University, Lanzhou 730000,
China

2. Institute of Pathogen Biology,
School of Basic Medical Sciences,
Lanzhou University, Lanzhou
730000, China

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Message from the Guest Editor

The purpose of tuberculosis (TB) vaccine immunization is to induce long-term immunological memory that mediates protection from infection. Memory T cells would be expected to be an important correlate of immune protection against TB. It is known that following antigen stimulation, T cells are activated and develop into different subsets including effector T cells (T_{EFF}), effector memory T cells, central memory T cells and tissue-resident memory T cells (T_{RM}), etc. T_{EM}, T_{CM} and lung T_{RM} were reported to mediate immune protection against *M. tuberculosis* respiratory infection in tests conducted by different labs. However, their role in vaccine-mediated immune protection is still unclear. More studies are needed to investigate the correlation between memory T cells and protection, especially in the human population. Moreover, there are many factors, including antigens and adjuvants, that play a role in the development of immune memory. The vaccination pathway and schedule also affect the development of immune memory. All these factors need to be explored to improve the protective effects of vaccine immunization for tuberculosis.





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Editor-in-Chief

Prof. Dr. Ralph A. Tripp

Department of Infectious
Diseases, College of Veterinary
Medicine, University of Georgia,
Athens, GA 30602-7387, USA

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Vaccines Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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