

## عنوان مقاله:

Complete ablation of tumor necrosis factor decreases the production of IgA, IgG, and IgM in experimental central nervous system tuberculosis

## محل انتشار:

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## خلاصه مقاله:

**Objective(s):** This study aimed to explore the contribution of tumor necrosis factor (TNF) in the recruitment of B-cell and secretion of immunoglobulins (Igs) during cerebral tuberculosis (TB). **Materials and Methods:** In this work, the contributing role of TNF in regulating Ig secretions was investigated by comparing wild type TNF (TNF<sup>f/f</sup>), B-cell-derived TNF (BTNF<sup>-/-</sup>), and complete TNF ablation (TNF<sup>-/-</sup>) in a mouse cerebral Mycobacterium tuberculosis infection. Using flow cytometry and ELISA, we were able to examine the recruitment of B-cell subsets, and the production of Igs; also assessed the expression of surface markers on B cell subsets. **Results:** Here, we found that TNF<sup>-/-</sup> mice showed defective expression of IgA, IgG, and IgM antibodies compared with TNF<sup>f/f</sup> and BTNF<sup>-/-</sup> mice, which was significantly decreased in the expression of surface markers and co-stimulatory molecules. Moreover, mice that produced low antibody levels were not able to control infection, therefore progressed to disease; providing direct evidence for the TNF gene-regulating humoral immunity during central nervous system (CNS) M. tuberculosis infection. In contrast, BTNF<sup>-/-</sup> mice controlled the infection and had levels of IgA, IgG, and IgM comparable to TNF<sup>f/f</sup> mice. **Conclusion:** Together, our results demonstrate that TNF may serve as an essential regulator of antibody-mediated immune responses in CNS TB. However, the protective level exhibited by TNF-producing B cells could be defined as baseline protection that could be used in the development of new therapeutic targets or designing new vaccines.

## کلمات کلیدی:

antibody, Central nervous system, Humoral, Immunity infections, Mycobacterium, Tumor necrosis factor

## لینک ثابت مقاله در پایگاه سیویلیکا:

