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Investigating the role of natural killer cells during mycobacterium tuberculosis infection by using a mouse model of subcutaneous infection of bacillus calmette–guérin (BCG)

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Abstract

Tuberculosis remains a big threat to human society worldwide. Natural Killer (NK) cells are prominent components of the innate immune response, but limited information is available on the role of NK cells during mycobacterial infection. Previous studies have found that human NK cells lyse Mycobacterium tuberculosis-infected monocytes and alveolar macrophages and upregulate $CD8^+$ T cell responses. However, the mechanisms for NK cell recognition of MTb-infected cells are still not clear. Using a mouse model of footpad infection of BCG, we found that NK cells migrated to the local draining lymph node (LN) early post infection, and secreted large amount of IFN-γ, which indicates the system is a suitable model to study the interaction between NK cells and BCG-infected cells in the LN. We will use NK cell receptor deficient mice and blocking antibodies to further elucidate the mechanisms of NK cell recognition and also the regulating function of NK cells to modulate T cell responses.

Biography

Professor Min Fang got her Ph.D from the Institute of Genetics and Developmental Biology, CAS in 2003. She got her postdoc training in Fox Chase Cancer Center in USA mainly on studying the pathogenesis of viral infection, as well as the mechanisms by which vaccines afford protection. She joined the Institute of Microbiology, CAS in June, 2012 as a professor supported by “Thousand Young Talents Program” of the China’s government. Her work was published in esteemed journals such as: Immunity, J Exp Med, PNAS, Plos Pathogen, etc, and multiply works were selected and referred by the “Faculty of 1000”.