The role of IL-25 in mediating protective immunity against T. spiralis infection

Dr Pornpimon ANGKASEKWINAI
Department of Medical Technology
Thammasat University (Rangsit Campus)

Abstract
Mammalian hosts often develop distinct immune response against the diverse parasitic helminthes that have evolved for immune evasion. IL-25, an IL-17 cytokine family member, plays a key role in initiating the protective immunity against several parasitic helminthes; however, the involvements and underlying mechanisms by which IL-25 mediates immune response against T. spiralis infection have not been investigated. We showed that IL-25 functions in promoting protective immunity against T. spiralis infection by regulating type 2 innate lymphoid cells (ILC2) and adaptive immune responses. ILC2 and CD4+Th2 cells in the gastrointestinal tract of T. spiralis infected mice were found to express high levels of surface IL-17BR, a component of IL-25 receptor. After T. spiralis infection, activated ILC2s upregulated surface MHCII expression and enhanced effector T helper cell cytokine production. Reciprocally, CD4+ T helper cells were required for ILC2 function to respond to IL-25 during infection. Furthermore, mice deficient of IL-17BR showed markedly reduced ILC2 numbers and antigen-specific Th2 and Th9 cytokine production during T. spiralis infection. Thus, our data indicate that the collaborative interactions between ILC2s and CD4+ that regulated by IL-25 may play a key role in eliciting antigen-specific Th2 and Th9 cytokine responses against T. spiralis infection.

Selected publications


Visit our website @www.med.nus.edu.sg/mbio for more upcoming seminars