

Abstract

Innate lymphoid cells type 3 (ILC3) are a group of relatively newly discovered lymphocytes that lack an antigen-specific receptor. Nevertheless, their important role of immune regulators on mucous membranes is evident. In addition to the development of lymphoid tissue in embryogenesis, and during ontogenesis, postnatally, ILC3 are mainly involved in maintaining intestinal homeostasis and controlling intestinal microbiota. ILC3 produces various cytokines that stimulate surrounding intestinal cells to produce antimicrobial peptides and maintain epithelial wall integrity. The major cytokine produced by ILC3 is IL-22. Th17 lymphocytes and ILC3 are similar in many respects but differ significantly in some functions. ILC3 can regulate adaptive immunity cells towards an antimicrobial response without inducing inflammation. They are also directly connected to cells of the nervous system. Some probiotic bacterial strains produce metabolites that directly affect ILC3. This mechanism could be used in new therapeutic approaches to ameliorate the severity of diseases where changes in microbiota composition and function are inducing proinflammatory responses of the host.

Key words: innate lymphoid cells; IL-22; antimicrobial peptides; probiotics; microbiota