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Giardia lamblia activation of group 3 innate lymphoid cells via IL-17 production

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Giardia lamblia (synonyms, *G. duodenalis* and *G. intestinalis*) is a protozoan parasite that infects humans and most species of mammals. It is the most commonly diagnosed parasitic cause of diarrhea in humans. Around 2 to 3% prevalence rates were reported in the developed world and 20 to 30% were in the developing world. There are few studies that showed CD4+T cells from the lamina propria of the small intestine were producing more IL-17A following infection with *G. muris* and elevation of IL-17A mRNA levels in the small intestines of CD4-deficient or RAG-deficient mice is suggesting that there may be non-T-cell sources of IL-17A as well. The innate lymphoid cell (ILC) family has been the focus of intense investigation over recent years and ILC is known as key players in immune responses within multiple organs, particularly barrier surfaces such as the lung, skin and gastrointestinal tract. ILC are divided into three subgroups that are defined by their master transcription factor usage and cytokine-producing capacity and which closely mirror CD4+T helper (Th) cell subsets. In my study, group 3 ILC (ILC3) respond to signals from IL-1β by producing cytokines including IL-17A, IFN-γ and IL-22. ILC3 can mediate intestinal pathology in response to *G. lamblia* through the release of IL-17A, IL-22, IFN- γ and GM-CSF.

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