2nd International Conference on Flu

October 31-November 02, 2016 San Francisco, USA

IL-15-dependent generation of lung tissue-resident memory CD4 T cells

K Kai McKinstry

University of Central Florida, USA

T issue-resident memory T cells (T_{RM}) are thought to play a key role in protective recall responses against pathogens. T_{RM} subsets that persist at sites of previous infection may be especially important for immunity against pathogens such as influenza A virus (IAV) that can evade neutralizing antibodies. How T_{RM} cells form during immune responses is not fully understood, especially for CD4⁺ T cells. We recently found that virtually all memory CD4 T cells that develop in secondary lymphoid organs following IAV priming require autocrine IL-2 signals. Here, we describe a unique role for IL-15 in supporting the generation of a subset of IL-2-independent lung CD4⁺ T_{RM} cells formed during IAV priming. Our results demonstrate that this T_{RM} subset is highly functional and can more efficiently elicit pro-inflammatory responses from dendritic cells presenting cognate peptide antigen than can conventional splenic memory CD4 T cells expressing the same T cell receptor. We have previously shown that this function correlates with initial control of viral titers during the first few days following IAV challenge. These studies, identifying a novel role for IL-15 in specifically supporting the priming of a subset of lung CD4 T_{RM} cells with specialized function are highly relevant to vaccine design.

Biography

K Kai McKinstry has completed his PhD at the University of Saskatchewan in 2005 and pursued Postdoctoral studies at the Trudeau Institute in Saranac Lake, NY. He has joined the Faculty of the Department of Pathology at the University of Massachusetts Medical School in 2010. In 2015, he was recruited to the Burnett School of Biomedical Sciences at the University of Central Florida.

Kai.McKinstry@ucf.edu

Notes: