Yong Yu, J Mol Genet Med 2017, 11:2 (Suppl)
DOI: 10.4172/1747-0862-C1-015

Single cell RNA sequencing analysis of bone marrow innate lymphoid progenitors

Yong Yu
Wellcome Trust Sanger Institute, UK

Innate lymphoid cells (ILCs) are a new family of immune cells and play fundamental roles in the development of immune system and protect host from pathogens infection but ILC progenitor development in the bone marrow was not clear. We used single cell RNA sequencing to dissect BM ILC progenitors and identified PD-1 marked a committed ILC progenitor. We further found that activated ILCs in particular ILC2s expressed high levels of PD-1. Indeed, depleting PD-1-high ILC2s substantially reduced type 2 cytokines in immune responses, and inhibited acute lung inflammation induced by papain. Our data therefore demonstrate the value of single cell RNA sequencing in dissecting development and present a new perspective for targeting PD-1 in immunotherapies.

Biography

Yong Yu completed his PhD training with Dr Pentao Liu at Wellcome Trust Sanger Institute where he focused on the role of Bcl11a in early lymphocyte cell development (2010-2012). Subsequently, he was recruited by Dr Pentao Liu as a Post-doctoral Research Fellow to continue to explore the molecular and cellular mechanisms of hematopoiesis. Recently, he transcriptomically profiled hundreds of innate lymphoid progenitors at the single cell level and discovered PD-1hi marks ILC progenitors and effectors. This work was published in *Nature*.

yy3@sanger.ac.uk

Notes: