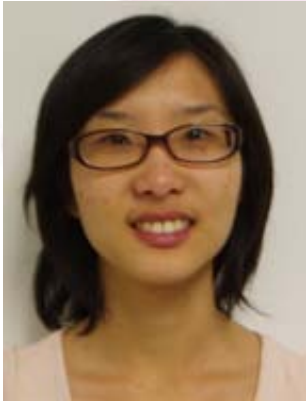


SgN Immunology Seminar



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Type-2 innate immune responses stimulate
hepatocyte proliferation to promote liver
regeneration

Abstract

It has been proposed that allergic immune responses, like those mediated by type 2 immunity, evolved to protect the host from damage caused by environmental challenges, including toxins, xenobiotics, and helminth infections. Despite some support for this hypothesis, the underlying mechanisms by which type 2 innate responses orchestrate the regeneration of injured tissues remain largely unknown. Here, we demonstrate a requirement for type 2 innate immunity in regeneration of liver after partial hepatectomy and toxin-mediated injury. Injury to liver results in rapid recruitment of eosinophils, which secrete IL-4 to promote the proliferation of quiescent hepatocytes. Surprisingly, signaling via the IL-4Ra in macrophages, which have been implicated in tissue repair, is dispensable for hepatocyte proliferation and liver regrowth after injury. Instead, IL-4 exerts its mitogenic actions by directly activating IL-4Ra in hepatocytes. Our findings have thus uncovered an unexpected mechanism by which allergic type 2 innate immunity stimulates hepatocyte proliferation to promote liver regeneration.

Biography

Sharon Goh, is a A*STAR NSS (BS-PhD) scholar. She first majored in Biochemistry at Imperial College London. Currently, she is a graduate student in Immunology at Stanford University, USA, pursuing her Ph.D. in the laboratory of Ajay Chawla at the Cardiovascular Research Institute of the University of California San Francisco. Her research focuses on the immune mechanisms regulating tissue regeneration, adipose tissue inflammation, obesity-induced insulin resistance.

Host
Dr Jean-Pierre Abastado
Singapore
Immunology
Network, A*Star

Date
Thursday,
18 October 2012

Time
11am – 12pm

Venue
SgN Seminar Room,
Immunos Building
Level 4
Biopolis