UNIVERSITY OF HOHENHEIM

Special Seminar

Thursday, 19th of October 2023, 4 p.m.

Lecture hall HS 4

Revisiting the functions of Interleukin-15

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Abstract

Both *Il15*$^{-/-}$ and *Il15ra*$^{-/-}$ mice are similarly deficient for NK, NKT and memory CD8+ T cells, which led to the notion that IL-15α is critical for IL-15 signaling. However, we have shown that (i) IL-15 is essential for pathogenesis of autoimmune type 1 diabetes whereas IL-15Rα is not; (ii) IL-15 is crucial to control *Listeria monocytogenous* (***Lm***) and *Salmonella typhimurium* (***St***) infections whereas IL-15Rα is dispensable. *Il15*$^{-/-}$ mice fail to produce IFNγ following *Lm*infection and accumulate neutrophils and Ly6C^{lo} monocytes (**Mo**), whereas *Il15ra*$^{-/-}$ mice respond similarly to wild type (**WT**) controls. Non-lymphoid associated functions of IL-15 will be discussed.

Vita

Dr. Sheela Ramanathan obtained PhD in immunology from Madurai Kamaraj University in India for the work on immune response towards Mycobacterium leprae antigens in leprosy patients across the disease spectrum. Dr. Ramanathan completed post-doctoral training in pre-clinical disease models of autoimmune uveitis (with Dr. Philippe Druet in Paris) and autoimmune type-1 diabetes (with Dr. Philippe Poussier in Toronto). As an independent researcher at Université de Sherbrooke since 2007, Dr. Ramanathan investigated how GIMAP5 protein controls the activation of T lymphocytes and how Interleukin-15 promotes autoimmune diabetes, obesity, fatty liver disease and liver fibrosis. Currently, Dr. Ramanathan's research is focussed on understanding the pathogenesis of long COVID and immune response to COVID-19 vaccines in rheumatoid arthritis patients and the elderly population, in close collaboration with other researchers and clinicians at Université de Sherbrooke. Dr. Ramanathan's research is funded by Canadian Institutes of Health Research (CIHR) and the Natural Sciences and Engineering Research Council of Canada (NSERC). She is the vice-president of Canadian Immunology Society.

Host

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