BDR SEMINAR in Kobe

"CDB SEMINAR" and "QBiC SEMINAR" have been renamed "BDR SEMINAR".

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Thursday, March 14, 2019

16:00-17:00, 7F Seminar Room, DB Building A

Inter-Organ Dialogues during Vaccination —Lessons from Organismal Systems Immunology

Summary

A fundamental challenge in the biology of multicellular organisms is to decipher the principles governing the host responses against environmental stimuli at the whole-organism scale. While it is known that our organs have professional functions, comparatively little is known about how different organs communicate with each other at whole-organism scale to respond properly and to coordinate the homeostasis. Recent advance in genomics enables comprehensive and unbiased analyses to reveal the mechanism underling the inter-organ communications.

With a comparative infection model in mice, we could observe immune signal propagation within and between organs to obtain a dynamic map of immune processes at the organism level. We uncovered two inter-organ mechanisms of protective immunity mediated by soluble and cellular factors. Our results open up new lines of inquiry for the analysis of host responses at the organism level (Ref. 1, 2).

In this talk, I will also discuss the improvement of this newly developed approach in order to identify small molecule mediators of inter-organ communication.

References:

1. Kadoki M, Patil A, Thaiss CC, Brooks DJ, Pandey S, Deep D, Alvarez D, von Andrian UH, Wagers AJ, Nakai K, Mikkelsen TS, Soumillon M, and Chevrier N. Organism-level analysis of vaccination reveals networks of protection across tissues. *Cell* 171, 398-413.e21 (2017)

2. Kadoki M, and Chevrier N. Inter-organ communications during vaccination - Organismal landscape of immune responses –. (Japanese) *Clinical Immunology & Allergology* 70, 112-119 (2018)

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