77th IRCMS Seminar

Date **March 11, 2022 (Friday)**

Time **16:00-17:00**

~~On-site+~~ Online

Venue ~~1F Conference Room, IRCMS~~

- To follow the extended quasi-state of emergency, it will be held **online only**.

Title:
The mechanism regulating the formation of thymus function

Abstract:

Functionally competent and self-tolerant T cell repertoire is shaped through positive and negative selection in the cortical and medullary microenvironments of the thymus. The thymoproteasome specifically ~~expressed~~ in the cortical thymic epithelial cells (cTECs) is essential for the optimal generation of CD8+ T cells. Although how the thymoproteasome governs the generation of CD8+ T cells is not fully understood, accumulating evidence suggests that the thymoproteasome optimizes CD8+ T cell production through the processing of positively selecting-self-peptides associated with MHC class I molecules expressed by cTECs.

In the medullary microenvironment, autoreactive T cells are eliminated by undergoing negative selection or differentiate into regulatory T cells to establish self-tolerance. For that, positively selected T cells in the thymic cortex migrate into the thymic medulla. CCR7-mediated chemokine signaling is important for the migration of positively selected T cells from the cortex to the medulla. Among the CCR7 ligands, we have found that CCL21Ser produced by medullary thymic epithelial cells (mTECs) has a non-redundant role in the establishment of self-tolerance in T cells.

In this seminar, I would like to talk about the recent advances in the mechanism of thymoproteasome-dependent generation of CD8+ T cells, as well as the functional significance of CCL21Ser in the thymus.

References:

1. Kozai M, et al. Journal of Experimental Medicine 2017.
2. Ohigashi I, et al. Cell Reports 2019.
3. Ohigashi I, et al. Journal of Experimental Medicine 2021.

Speaker:

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* Anyone in Kumamoto Univ. is welcome, but please pre-register by IRCMS web page (the QR code or search “IRCMS registration”).

IRCMS registration

Organizer:
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