Seminar

Cell Biological mechanisms mediating optimal immunosurveillance

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When
Tuesday 23 July 2024
12:00-13:00 hrs

Location
Figdor lecture theatre
Research tower 8th floor
Route 289
M850.08.024

Host
Alessandra Cambi
Cell Biology

Registration
Not required

Abstract
Healthy immunity requires that T lymphocytes (T cells) perform immunosurveillance. To execute this function, T cells must (1) infiltrate complex tissues, (2) identify antigenic signatures of disease via specialized intercellular junctions termed immunological synapses, and (3) amplify antigen-triggered signaling at the synapse. The regulation of each of these processes is crucial for mounting an effective immune response, yet their underlying cellular mechanisms are not well understood.
I have taken an interdisciplinary approach to answer these outstanding questions. Using disease contexts as natural perturbation systems in conjunction with techniques at the interface of immunology and cell biology, I have identified as well as characterized pathways in T cells that facilitate immunosurveillance. These pathways crucially regulate the stability of the immunological synapse and promote antigen-triggered signaling leading to a robust T cell activation. These findings highlight the importance of studying the basic cell biology of immune cells to not only further our understanding of specialized cell-cell interactions and intercellular information transfer in biology but also to generate a deeper understanding of complex diseases such as cancer.

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