Seminar/Talk

Adaptative migration of lymphocytes in the context of cell:matrix and cell:cell interactions

Loic Dupré
Centre de Physiopathologie de Toulouse Purpan

Host: Michael Sixt

The motility of lymphocytes is intimately related to their immune surveillance function. Lymphocytes alternate between phases of individual cell exploration across tissues and phases of prolonged cell:cell interaction during activation and function. We are exploring how diversified lymphocyte motility behaviors emerge from the capacity of those cells to integrate signals from their environment, including extracellular matrix components, chemokines, neighbor cells and antigen-presenting cells. In a first part of the seminar, I will show how lymphocytes adapt their motility to extra-cellular matrix composition by adopting different types of random walks. At high cell density, matrix interaction conditions the self-assembly of lymphocytes into homotypic clusters endowed with collective coordination. Such behavioral plasticity is controlled by adhesive and protrusive actin cytoskeleton pools, respectively. In a second part, I will focus on the adhesive mechanisms that specifically regulate the dynamic interaction between cytotoxic T lymphocytes and target cells. A concentric synapse is assembled at the cell:cell interface via the organization of a belt of high-affinity LFA-1 integrin nanoclusters. Such topography is maintained by interaction with the actin cytoskeleton and allows polarized delivery of lytic granules towards the target cell. Those aspects of lymphocyte motility tuning will be further discussed in the context of primary immune deficiencies and leukemia.

Wednesday, June 7, 2017 03:00pm - 04:00pm
Mondi Seminar Room 3, Central Building

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.
Please find a schedule of the ISTA Shuttle on our webpage:
https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.