SFB 1027 - Seminar

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„Cytotoxic and Inhibitory Immunological Synapses”

Cytolytic lymphocytes, including NK cells and cytotoxic T cells, kill infected cells and transformed cells through polarized release of the content of lytic granules. Although some of the signaling properties of activating and inhibitory NK cell receptors are known, the dynamic interplay of receptor-ligand interactions between NK cells and target cells, and the spatiotemporal regulation of signal transduction at immunological synapse is poorly understood. We have previously demonstrated that the hallmark of cytotoxic immunological synapse is a central zone where exocytosed granule membrane proteins are retrieved by endocytosis. Directly adjacent to this endocytic compartment are zones where perforin-containing lytic granules reach the plasma membrane. Thus, cytotoxic immunological synapses are characterized by a central zone of bidirectional vesicular traffic, which is controlled by binding of the integrin LFA-1 to ICAM-1 (Liu et al., Immunity, 2009). In a further study of the regulation of both cytotoxic and inhibitory immunological synapses we have discovered that an adaptor protein, Crk, plays an essential role at immunological synapses by influencing signaling events required for both activation and inhibition (Liu et al., Immunity, 2012). This finding has led to a new model of inhibitory signaling: Crk phosphorylation induced by inhibitory receptors prevents essential Crk-dependent activation signals.

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Campus Homburg, Geb. 60,

Hörsaal Humangenetik

Der Gast wird betreut von Bin Qu und Markus Hoth

Alle Interessenten sind herzlich eingeladen

Der Sprecher des SFB
Heiko Rieger

SFB 1027 „Physikalische Modellierung von Nicht-Gleichgewichtsprozessen in biologischen Systemen“