



SFB 1027 - Seminar

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Molecular mechanisms and importance of leukocyte dynamics in vivo

Cellular immune responses are very complex and require the highly organized migration and physical interaction of diverse cells in a timely manner and in defined organs. To get a deeper understanding of the underlying mechanisms one of the most promising approaches is to directly visualize the cells while they are activated or execute their immune functions. Today this is typically done by imaging the cells using intravital 2-photon microscopy.

In my talk I will show our recent results on the migration of T cells in lymph nodes. We have identified a novel function of the central adhesion molecule LFA-1 for intranodal migration which has direct consequences for the effectivity of T cell activation by dendritic cells.

In a second part I will focus on neutrophil granulocytes as key members of the innate immune system. We have investigated them in the bone marrow, where they are generated from precursor cells and can be rapidly mobilized into the periphery as well as in several peripheral sites. Here they fulfill a variety of effector functions but can also have harmful consequences, if their activity is not tightly controlled. I will demonstrate that for cases of infectious as well as sterile inflammation.

Collectively, by imaging the basic processes of the immune response a very detailed view into the key mechanisms can be obtained that is a tremendous help in our search for a comprehensive understanding of the immune system. Future approaches aim at including other imaging modalities that are able to get a whole body view of the processes and are principally also applicable to human studies.

Dienstag, 01.10.2013, 14:15 h

Campus Homburg, Geb. 60,

Hörsaal Humangenetik

Der Gast wird betreut von Markus Hoth

Alle Interessenten sind herzlich eingeladen

Der Sprecher des SFB
Heiko Rieger

SFB 1027 Physikalische Modellierung von Nicht-Gleichgewichtsprozessen
in biologischen Systemen