



# NSI Meeting Announcement

Date: Thursday, December 7, 15:15 – 16:00

Venue: Seminar room A3.3067, Rikshospitalet

## Guest lecture

by

**Dr Klaus Okkenhaug**

Laboratory of Lymphocyte Signalling and Development,  
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## ***“The PI3K p110delta regulates T cell differentiation and regulation”***

### Abstract

Phosphoinositide 3-kinases (PI3Ks) initiate signaling pathways that promote proliferation, survival and differentiation by generating the second messenger signaling molecule PIP3. PIP3 accumulation at the immune synapse is among the earliest biochemical signals observed upon the formation of a T cell-antigen presenting cell conjugate. We have analyzed signaling events in T helper cells from mice in which the PI3K p110 $\delta$  subunit has been inactivated genetically or pharmacologically. The kinase activity of p110 $\delta$  is essential for PIP3 accumulation at the immune synapse, but not for PKC $\theta$  accumulation or NF- $\kappa$ B nuclear translocation. Contrary to expectations, CD28 does not appear to contribute significantly to PI3K activity but instead complements TCR and PI3K signaling through distinct pathways. In the absence of p110 $\delta$  activity, differentiation along the Th1 and Th2 lineages is impaired. In addition, CD4<sup>+</sup>CD25<sup>+</sup>Foxp3<sup>+</sup> regulatory T cell function is compromised in the absence of p110 $\delta$  activity. We propose that sustained TCR-dependent PI3K activity is required for the epigenetic changes required for naïve CD4<sup>+</sup> T cells to differentiate towards functional effector or regulatory T cell lineages.

[www.babraham.ac.uk/research/molecular%20immunology/okkenhaug/index.htm](http://www.babraham.ac.uk/research/molecular%20immunology/okkenhaug/index.htm)

Refreshments will be served from 15:00

Welcome all!



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