

**P012** Activation Kinetics and Translocation of PKB in Response to Interleukin-3

**N. A. Barnes, D. Xenaki and P. J. Owen-Lynch.**

*Department of Biological Sciences, Lancaster University, UK*

Haemopoiesis, the process of blood cell production, is regulated by complex interactions between cytokines and the haemopoietic microenvironment. One such regulator, Interleukin-3 (IL-3) is produced by activated T cells and acts on several lineages within the haemopoietic system to enhance proliferation of the progenitor cells. Stimulation of the IL-3 receptor with IL-3 results in activation of several downstream signalling enzymes including PI3-kinase, which has been linked to the proliferative activity of this cytokine. We have investigated the kinetics of activation of the downstream kinase PKB and the localisation of activated PKB in haemopoietic progenitor cells. IL-3 stimulates the phosphorylation of PKB over short and long-term exposure. However translocation of PKB analysed by confocal microscopy is only evident after long-term stimulation with this cytokine. The kinetics of activation of the downstream signals from PKB mirror the localisation of its activity. Thus GSK-3 $\beta$  is inactivated by short-term stimulation with IL-3 whilst the FOXO transcription factor proteins require long-term exposure.