SIgN Research Centre

Singapore Immunology Network
A*STAR

# SIgN Immunology Seminar

## Prof Jonathan Sprent
## Garvan Institute of Medical Research

## KEEPING T CELLS ALIVE

*Host*
Prof Paola Castagnoli
Singapore Immunology Network, A*Star

*Date*
Thursday,
31 May 2012

*Time*
11am – 12pm

*Venue*
SIgN Seminar Room,
Immunos Building
Level 4
Biopolis

As a consequence of positive selection in the thymus, naive T cells display significant reactivity to self MHC ligands. Such reactivity is too low to break self tolerance but sufficient to deliver survival signals to mature T cells as they migrate as resting cells through the lymphoid tissues. In addition to T cell receptor (TCR) signals, naïve T cells receive survival signals through interaction with cytokines, especially IL-7. For naive CD8 cells, TCR signals serve to augment responsiveness to cytokines. Such responsiveness correlates with CD5 expression and the density of lipid rafts on the cell surface. TCR signalling resulting from interaction with self MHC ligands has to be harnessed to prevent entry into cell cycle and the possible development of autoimmune disease. One might envisage that this would be a particular problem with memory T cells since these cells have a high TCR density and are especially sensitive to responses to foreign antigen. Yet, unlike naïve T cells, memory T cells tend to ignore self MHC ligands. Possible explanations for this paradox will be discussed.