SIgN Immunology Seminar

Dr Stephan Gasser

Department of Microbiology,
National University of Singapore

Immune Recognition of Tumor Cells

Host
Dr Laurent Renia
Singapore Immunology Network, A*Star

Date
Tuesday,
25 June 2013

Time
~~11am – 12pm~~
2pm – 3pm

Venue
SIgN Seminar Room
Immunos Building
Level 4
Biopolis

Mechanisms of spontaneous tumour regression have been difficult to characterize in a systematic manner due to their rare occurrence and lack of appropriate model systems. *Myc* expression is deregulated in around 70% of all human malignancies. Eμ-*myc* mice over-express murine c-*myc* under the control of Ig heavy chain enhancer region (Eμ), analogous to human Burkitt lymphoma. Early-stage Eμ-*myc*-induced disease is characterized by immature B cell leukaemia, which progresses to lymphoma terminal-stage disease. Here we provide evidence that tumour cells in Eμ-*myc* mice spontaneously regress between 41 and 65 days of age. Regression critically depended on the activation of the DNA damage response (DDR) and IRF3-dependent pathways. The DDR has previously been suggested to represent an early barrier against cancer. I will provide evidence that the DDR-mediated regression of leukaemic B cells depends on T and NK cells. Furthermore, we found that the DDR upregulates a number of immunomodulatory molecules on cells that lead to the activation of naive CD8+ T cells. Hence, Eμ-*myc* mice provide a novel model to study spontaneous regression and possible mechanisms of immune evasion or suppression by cancer cells.