

**SURVIVIN LEVELS ARE DOWNREGULATED DURING THYMOCYTE NEGATIVE SELECTION.** J. Bilhartz, N. Monatesti, A. Filip, C. Bennett, L. Earl, S. Longworth, J. Punt, J. Owen. Dept. Biology, Haverford College, Haverford, PA 19041-1392.

In the thymus, a developing CD4+CD8+, double positive (DP) T cell is exposed to a variety of stimuli that are integrated by signaling cascades within the cell to determine its fate. If the T cell receptor (TCR) binds antigen with too high affinity, the transduced signal is too strong, and the cell dies, a victim of negative selection. However, if the affinity of the TCR interaction with antigens expressed endogenously in the thymus is too weak, the T cell fails positive selection and will instead die by neglect. Positive and negative selection signals can be mimicked *in vitro* by stimulating DP thymocytes with anti-TCR coupled with anti-CD2 (positive selection), or anti-TCR, anti-CD2 and anti-CD28 (negative selection).

Our laboratory focuses on proteins belonging to the Inhibitor of Apoptosis family. Members of this family are expressed at different levels depending on the stage of thymocyte development. Furthermore, *in vitro* simulation of negative selection results in decreased cytoplasmic survivin expression in double positive, but not in mature single positive thymocytes over a four hour time period. The mechanism and implications of this down-regulation will be discussed.