

**Abstract for Midwinter Conference of Immunologists 2003 poster (Charlly Kao, Tim Starr, and Stephen C. Jameson)**

**MAP Kinase Signaling in Thymocytes upon Stimulation with a Negatively Selecting Ligand**

Developing T cells in the thymus undergo selection so that only those that are MHC-restricted and self-tolerant mature and exit into the periphery. Thymocytes containing a T cell receptor capable of interacting with MHC survive and differentiate by a process called positive selection, whereas potentially self-reactive thymocytes undergo clonal deletion (i.e. negative selection). It is known that both developmental processes are initiated by TCR stimulation, but it is unclear how signaling through the same receptor can lead to different developmental outcomes. One current model proposes that there is differential recruitment of components in the MAP kinase pathways. Here, we evaluated the role of MAP kinase signaling in the OT-I system by measuring intracellular levels of pJNK, pcJun, and pERK in thymocytes after stimulation with a mouse fibroblast cell line (5AKb $\square$ 3) or in fetal thymic organ cultures (FTOCs). Stimulation with a negatively selecting ligand resulted in transient ERK activation and sustained cJun activation. Future work would involve measuring MAP kinase activation in response to low-affinity, positively selecting ligands.