**Application:** Organ transplantation, allergy, inflammatory and autoimmune diseases

**Inventor:** Anjana Rao, Ph.D., Patrick G. Hogan, Ph.D., Jose Aramburu, Ph.D.

**Invention Summary:**
This invention relates to the NFAT-family proteins, which are transcription factors that play a key role in the inducible expression of cytokine genes during the activation of T-cells and other immune system cells. The activation of NFAT in cells requires its dephosphorylation by the protein phosphotase calcineurin. There are currently immunosuppressant drugs that inhibit dephosphorylation of calcineurin but they display considerable toxicity and are known to inhibit dephosphorylation of calcineurin substrates other than NFAT. The division of signaling pathways downstream of calcineurin, into a branch that depends on NFAT and branches that do not, lead the inventor to devise more selective ways of blocking calcineurin-NFAT signaling. The present invention is an optimized peptide ligand that inhibits NFAT recognition and dephosphorylation by calcineurin. Studies have shown that this peptide inhibits calcineurin-NFAT transcriptional signaling in T cells and is more selective and less toxic than cyclosporin A.

**Patent Status:**
US Issued Patent # 7,084,241
US Application # 11/258,620
US Application # 12/260,049

**Availability:** Nonexclusive worldwide license

**Contact:**
Ryan Dietz
Director, Office of Technology Development
617.919.3048
dietz@idi.harvard.edu