

Rapamycin is an effective therapy in mouse models of immune-mediated bone marrow failure, acting by specific expansion of regulatory T cells and elimination of clonogenic CD8+ effectors



Mouse models of immune-mediated bone marrow failure



Cyclosporine A

intraperitoneal
once daily for 5-10 days
50 mg/kg

vs



Rapamycin

intraperitoneal
once daily for 5-13 days
2 mg/kg

- ↑ cytoplasmic nuclear factor of activated T-cells-1 following T cell receptor stimulation
- ↓ proportion of memory and effector T cells
- maintained a pool of naïve T cells
 - ↓ Th1 inflammatory cytokines IFN- γ & TNF- α
 - ↑ Th2 cytokine IL-10
 - ↑ expansion of functional regulatory T cells
 - ↓ effector CD8+ T cells
- suppressed phosphorylation of S6 kinase and protein kinase B