

## Lineage-specific regulation of naïve CD8<sup>+</sup> T cell division in lymphopenic hosts

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Naïve CD8<sup>+</sup> T cells can proliferate in the absence of antigen presentation in lymphopenic, but not intact, hosts, a phenomenon termed homeostasis-driven division. CFSE labeled naïve CD8<sup>+</sup> T cells transferred into lymphopenic hosts are capable of multiple divisions; however, cell recovery is low, indicating that the purpose of this proliferation is not to homeostatically restore T cell numbers. The absence of proliferation in intact animals implies active inhibition of naïve donor cells by host immune cells. In accordance with this hypothesis, transfer of naïve polyclonal CD8<sup>+</sup> T cells markedly slows division of naïve transgenic CFSE-labeled CD8<sup>+</sup> T cells in lymphopenic hosts. Aged naïve CD8<sup>+</sup> T cells can inhibit this division equally well as young naïve CD8<sup>+</sup> T cells. Interestingly, neither naïve CD4<sup>+</sup> T cells nor B cells can inhibit naïve CD8<sup>+</sup> T cell division. Effector or rested effector (memory-like) polyclonal CD8<sup>+</sup> T cells are less capable of inhibiting naïve CD8<sup>+</sup> T cell proliferation. These data imply that naïve CD8<sup>+</sup> T cell proliferation and subsequent homeostasis is regulated in a lineage-specific fashion and is also dependent upon the activation state of the inhibiting cell.