Persisnt loss of IL-27 responsiveness in CD8+ memory T cells abrogates IL-10 expression in a recall response. [1]

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Abstract

CD8+ T cells are central to the eradication of intracellular pathogens, but they can also act to limit inflammation and immunopathology. During primary respiratory viral infection CD8+ effector T cells release the immunosuppressive cytokine IL-10, which is essential for host survival. Here we report that CD8+ T-cell-derived IL-10 is absent in a recall response. We show in mice that the lack of IL-10 is due to a persistent loss of IL-27 responsiveness in CD8+ memory T cells, caused by down-regulation of the common cytokine receptor, glycoprotein 130. CD8+ memory T cells secreted less IL-10 when activated in the presence of IL-27 than did naïve controls, and retroviral expression of glycoprotein 130 restored IL-10 and reduced IFN-? production upon restimulation. We demonstrate that human CD8+ memory cells are also characterized by impaired IL-27 responsiveness. Our data suggest that CD8+ T-cell activation involves a persistent loss of specific cytokine receptors that determines the functional potential of these cells during rechallenge infection.