Role of signaling lymphocytic activation molecule in T helper cell responses

http://www.firstlight.cn 2005-10-14

Signaling lymphocytic activation molecule (SLAM; CDw150) is a 70 kDa glycoprotein. Signaling lymphocytic activation molecule is constitutively expressed on memory T cells, CD56+ T cells, a subset of T cell receptor γδ+ cells, immature thymocytes and, at low levels, on a proportion of peripheral blood B cells. Signaling lymphocytic activation molecule is rapidly upregulated on all T and B cells after activation. Engagement of SLAM by F(ab′)2 fragments of an anti-SLAM monoclonal antibody (mAb A12) enhances antigen-specific T cell proliferation. In addition, mAb A12 was directly mitogenic for T cell clones and activated T cells. T cell proliferation induced by mAb A12 is independent of interleukin (IL)-2, IL-4, IL-12 and IL-15, but is cyclosporin A sensitive. Ligation of SLAM during antigen-specific T cell proliferation resulted in upregulation of interferon (IFN)-γ production, even by allergen-specific T helper cell (Th) 2 clones, whereas the levels of IL-4 and IL-5 production were only marginally affected. The mAb A12 was unable to induce IL-4 and IL-5 production by Th1 clones. Costimulation of skin-derived Der P 1-specific Th2 cells from patients with atopic dermatitis via SLAM resulted in the generation of a population of IFN-γ-producing cells, thereby reverting their phenotype to a Th0 pattern. Signaling lymphocytic activation molecule is a high-affinity self ligand mediating homophilic cell interaction. In addition, soluble SLAM enhances both T and B cell proliferation. Collectively, these data indicate that SLAM molecules act both as receptors and ligands that are not only involved in T cell expansion but also drive the expanding T cells during immune responses into the Th0/Th1 pathway. This suggests that signaling through SLAM plays a role in directing Th0/Th1 development.

存档文本