Following infection with Leishmania major, T cell activation and apoptosis can be detected in draining lymph nodes of C57BL/6-infected mice. We investigated the mechanisms involved in apoptosis and cytokine expression following T cell activation. After two weeks of infection, apoptotic T cells were not detected in draining lymph nodes but activation with anti-CD3 induced apoptosis in both CD4 and CD8 T cells. Treatment with anti-Fas Ligand, caspase-8 or caspase-9 inhibitors did not block activation-induced T-cell death. We also investigated whether the blockade of caspase-8 activity would affect the expression of type-1 or type-2 cytokines. At early stages of infection, both CD4 and CD8 T cells expressed IFN-γ upon activation. Treatment with the caspase-8 inhibitor zIETD-fmk (benzyl-oxycarbonyl-Ile-Glu(OMe)-Thr-Asp(OMe)-fluoromethyl ketone) reduced the proportion of CD8 T cells and IFN-γ expression in both CD4 and CD8 T cells. We conclude that a non apoptotic role of caspase-8 activity may be required for T cell-mediated type-1 responses during L. major infection.

Keywords
apoptosis, caspase-8, CD8 T cells, IFN-γ, Leishmaniasis.