

VISUALIZATION OF INTERFERON GAMMA PRODUCING CELLS IN VIVO

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Naïve CD4 T cells can differentiate into two major subsets termed T helper 1 (Th1) or T helper 2 (Th2) after encounter with antigen, and these subsets are thought to promote different types of immune responses based on their cytokine expression profiles. Th1 CD4 T cells produce IFN- γ and are important in the induction of cell mediated immune responses, whereas Th2 CD4 T cells produce IL-4 and are thought to play a critical role in the development of humoral immune responses. A wealth of knowledge has been gained in recent years in understanding the factors involved in the development of these two helper subsets. However, much of this work has been done using cells generated in vitro, and therefore may not mimic what actually occurs during the course of an immune response in vivo. In an effort to visualize the development Th1 cells in vivo, an IFN- γ reporter mouse, termed Yellow enhanced transcript for IFN- γ (Yeti), was generated. In this mouse, the endogenous IFN- γ gene was replaced with a targeting construct containing the genomic sequence of IFN- γ spliced to an internal ribosomal entry site (IRES) and enhanced yellow fluorescent protein (eYFP). This allowed for the translation of IFN- γ and eYFP from the same transcript. These mice were used in combination with immunofluorescent histology to track IFN- γ expressing cells in vivo.