

PubMed

Display Settings: Abstract

[J Interferon Cytokine Res.](#) 1996 Jul;16(7):537-46.

## **Anti-CD3-activated killer T cells: interferon-gamma and interleukin-10 cross-regulate granzyme B expression and the induction of major histocompatibility complex-unrestricted cytotoxicity.**

[Fitzpatrick L](#), [Makrigiannis AP](#), [Kaiser M](#), [Hoskin DW](#).

Department of Microbiology and Immunology, Dalhousie University, Halifax, Nova Scotia, Canada.

### **Abstract**

We have investigated the effect of interferon-gamma (IFN-gamma) and interleukin (IL)-10 on granzyme B expression and the induction of major histocompatibility complex (MHC)-unrestricted cytotoxic activity in mouse T cell cultures following activation with anti-CD3 monoclonal antibody (mAb). First, metabolic inhibitors of granule-dependent and granule-independent cytolytic pathways were used to show that anti-CD3-activated killer T (AK-T) cells kill allogeneic P815 mastocytoma target cells primarily by the granule-dependent granzyme/perforin pathway. In comparison to control AK-T cells, lower levels of cytolytic activity were evident when AK-T cells were generated in the presence of anti-IFN-gamma neutralizing mAb or exogenous IL-10, whereas enhanced cytotoxicity was observed when AK-T cell cultures contained anti-IL-10 neutralizing mAb or exogenous IFN-gamma. In addition, granzyme B mRNA expression by AK-T cells was diminished when IFN-gamma bioactivity was neutralized or exogenous IL-10 was present in AK-T cell-cultures, whereas neutralization of IL-10 bioactivity or the addition of exogenous IFN-gamma resulted in increased expression of granzyme B mRNA. Similar results were obtained when granzyme B enzymatic activity in AK-T cell lysates was quantified using a colorimetric granzyme B assay. Altered cytotoxic potential, granzyme B mRNA expression, and granzyme B enzymatic activity following T cell activation in the presence of anti-IFN-gamma or anti-IL-10 neutralizing mAb or exogenous IFN-gamma or IL-10 could not be attributed to gross changes in T cell activation status or to altered percentages of CD4+ and CD8+ T cells in AK-T cell cultures. We conclude that IFN-gamma and IL-10 cross-regulate the induction of the granule-dependent cytolytic machinery of AK-T cells.

PMID: 8836920 [PubMed - indexed for MEDLINE]

**Publication Types, MeSH Terms, Substances**

**LinkOut - more resources**