

Human Interleukin 12 (IL-12)

CATALOG NUMBER: IL-12-020P, 20 µg

Introduction

Interleukin 12, also known as natural killer cell stimulatory factor (NKSF) or cytotoxic lymphocyte maturation factor (CLMF), is a pleiotropic cytokine originally identified in the medium of activated human B lymphoblastoid cell lines. The p40 subunit of IL12 has been shown to have extensive amino acid sequence homology to the extracellular domain of the human IL6 receptor while the p35 subunit shows distant but significant sequence similarity to IL6, GCSF, and chicken MGF. These observations have led to the suggestion that IL12 might have evolved from a cytokine/soluble receptor complex. Human and murine IL12 share 70% and 60% amino acid sequence homology in their p40 and p35 subunits, respectively. IL12 apparently shows species specificity with human IL12 reportedly showing minimal activity in the murine system. IL12 is produced by macrophages and B lymphocytes and has been shown to have multiple effects on T cells and natural killer (NK) cells. These effects include inducing production of IFN γ and TNF by resting and activated T and NK cells, synergizing with other IFN γ inducers at both the transcriptional and post transcriptional levels. This interaction induces IFN γ gene expression, enhancing the cytotoxic activity of resting NK and T cells, inducing and synergizing with IL2 in the generation of lymphokine-activated killer (LAK) cells, acting as a comitogen to stimulate proliferation of resting T cells, and inducing proliferation of activated T and NK cells. Current evidence indicates that IL12, produced by macrophages in response to infectious agents, is a central mediator of the cell-mediated immune response by its actions on the development, proliferation, and activities of TH1 cells. In its role as the initiator of cell-mediated immunity, it has been suggested that IL12 has therapeutic potential as a stimulator of cell-mediated immune responses to microbial pathogens, metastatic cancers, and viral infections such as AIDS.

Description

Recombinant human IL-12 produced in Yeast is a 75 kDa glycosylated protein.

Source

Yeast

Purity

≥ 97% purity (by SDS PAGE and HPLC)

Endotoxin Level

≤1 EU/mg, determined by the LAL method

Biological Activity

Measured in a cell proliferation assay using PBMC after being induced by IL-2; the specific activity shall be not less than 1×10^7 IU/mg

Formulation

Sterile lyophilized powder, in PBS containing 0.1% HAS, pH7.4

Reconstitute with double distilled water at a concentration of no less than 50 µg/ml with 0.1% human serum albumin (A highly purified plant-derived human serum albumin is strongly suggested to be used, Cat# HAS-1r) or bovine serum albumin as a stock.

Storage

Stable for 6-months from the date of shipment when kept at -20 °C or -70 °C. Upon reconstitution, it can be stored at 4 °C for at least one month or -20 °C for at least three months. Avoid repeated freeze-thaw cycles.

Usage

This product is produced for LABORATORY RESEARCH USE ONLY.