

## Recombinant Human IL12A

Cat. No. IL12A-219H Lot. No. (See product label)

### SPECIFICATION

**Species** Human

**Source** Sf21 Cells

**Description**

Interleukin 12 (IL-12, NK cell stimulatory factor, cytotoxic lymphocyte maturation factor) is a heterodimeric cytokine that is naturally produced by dendritic cells, macrophages and human B-lymphoblastoid cells (NC-37) in response to antigenic stimulation. IL-12 is involved in the differentiation of naive T cells into Th1 cells, which is important in resistance against pathogens. It is known as a T cell stimulating factor, which can stimulate the growth and function of T cells. It stimulates the production of IFN- $\gamma$  and TNF- $\alpha$  from T and natural killer (NK) cells, and reduces IL-4 mediated suppression of IFN- $\gamma$ . IL-12 also has anti-angiogenic activity, which can block the formation of new blood vessels. IL-12 binds to the IL-12 receptor and upon binding, IL-12R- $\beta$ 2 becomes tyrosine phosphorylated and provides binding sites for kinases, Tyk2 and Jak2. These are important in activating critical transcription factor proteins such as STAT4 which are implicated in IL-12 signaling in T cells and NK cells. IL-12 contributes to the antimycobacterial immune response by enhancing production of interferon-gamma, facilitating development of Th1 cells and augmenting cytotoxicity of antigen-specific T cells and natural killer cells.

**Molecular Weight** The predicted molecular weight of Recombinant Human IL-12 is Mr 75 kDa.

**State Of Matter** Lyophilized.

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<b>Formulation</b>	This recombinant protein solution was 0.2 µm filtered and formulated in modified Dulbecco's phosphate buffered saline (1X PBS) pH 7.2 – 7.3 with no calcium, magnesium, or preservatives present.
<b>Purity</b>	> 97% by SDS Page and analyzed by silver stain.
<b>Endotoxin</b>	< 1.0 EU/g as determined by the LAL method.
<b>Biological Activity</b>	The biological activity of Human Interleukin-12 is determined by the stimulation of IFN-gamma from NK cells co-stimulated with IL-18. The expected ED50 for this effect is <1.0 ng/ml, corresponding to a specific activity of >1 x 10 <sup>6</sup> units/mg.
<b>Storage And Stability</b>	This lyophilized protein is stable for six to twelve months when stored desiccated at -20°C to -70°C. After aseptic reconstitution, this protein may be stored at 2°C to 8°C for one month or at -20°C to -70°C in a manual defrost freezer. Avoid Repeated Freeze Thaw Cycles. See Product Insert for exact lot specific storage instructions.

## GENE INFORMATION

<b>Gene Name</b>	<b>IL12A interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35) [ Homo sapiens ]</b>
<b>Synonyms</b>	NKSF1; CTL maturation factor (TCMF); Cytotoxic lymphocyte maturation factor 35 kDa subunit (CLMF p35); TSF; Edodekin-alpha; IL-12 p35; SGT2; FLJ39002; CLMF; IL-12A; NFSK; P35; Cytotoxic lymphocyte maturation factor 35 kDa subunit; IL-12 subunit p35; IL-12, subunit p35; NF cell stimulatory factor chain 1; cytotoxic lymphocyte maturation factor 1, p35; interleukin 12, p35; interleukin 12A; interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35); interleukin-12 alpha chain; natural killer cell stimulatory factor 1, 35 kD subunit 2; IL12A

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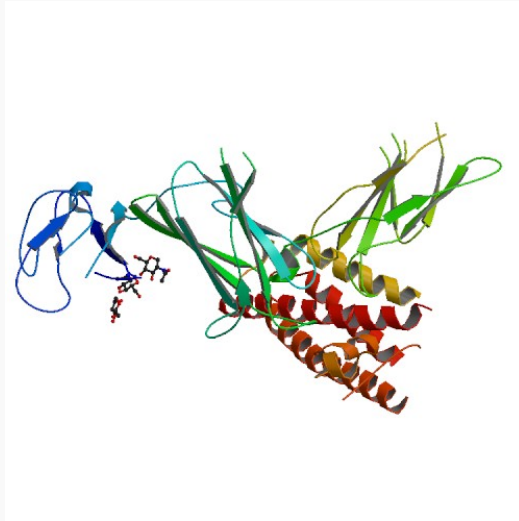
<b>Gene ID</b>	3592
<b>mRNA Refseq</b>	NM_000822
<b>Protein Refseq</b>	NP_000873
<b>UniProt ID</b>	P29459
<b>Chromosome Location</b>	3q25.33-q26
<b>MIM</b>	161560
<b>Pathway</b>	Allograft rejection; Cytokine-cytokine receptor interaction; Jak-STAT signaling pathway; RIG-I-like receptor signaling pathway; Toll-like receptor signaling pathway; Type I diabetes mellitus
<b>Function</b>	contributes_to cytokine activity; contributes_to growth factor activity; interleukin-12 beta subunit binding; interleukin-12 receptor binding; interleukin-27 binding; protein binding; protein heterodimerization activity

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