

## IL-12B Protein, Mouse, Recombinant (hFc)

### General Information

Synonyms:	IL-12p40;interleukin 12B;IL-12b;p40;IL12p40
Protein Construction:	A DNA sequence encoding the mouse IL12B (P43432) (Met 1-Ser 335) was fused with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Met 23
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	P43432
Molecular Weight:	62.8 kDa (predicted); 83 kDa (reducing condition, due to glycosylation)

### QC Testing

Biological Activity:	1. Measured by its binding ability in a functional ELISA. 2. Immobilized mouse IL12B-Fc at 10µg/mL (100µL/well) can bind biotinylated human IL12RB1-His . The EC50 of biotinylated human IL12RB1-His is 0.10-0.24µg/mL.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

**Reconstitution:**  
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

**Stability & Storage:**

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

*Actual storage temperature shall be subject to the COA.*

**Shipping:**

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Subunit beta of interleukin 12 (also known as natural killer cell stimulatory factor 2, or cytotoxic lymphocyte maturation factor 2, p40) (IL12B) is a subunit of human interleukin 12. IL12B/IL-12B is a cytokine that acts on T and natural killer cells and has a broad array of biological activities. Interleukin 12 is a disulfide-linked heterodimer composed of the 40 kD cytokine receptor-like subunit encoded by this gene, and a 35 kD subunit encoded by

IL12A. IL12B/IL-12B is expressed by activated macrophages that serve as an essential inducer of Th1 cells development. This cytokine is important for sustaining a sufficient number of memory/effector Th1 cells to mediate long-term protection to an intracellular pathogen. Overexpression of this gene was observed in the central nervous system of patients with multiple sclerosis (MS), suggesting a role of this cytokine in the pathogenesis of the disease. The promoter polymorphism of this gene has been reported to be associated with the severity of atopic and non-atopic asthma in children. IL12B/IL-12B associates with IL23A to form the IL-23 interleukin, a heterodimeric cytokine that functions in innate and adaptive immunity. Cancer Immunotherapy Immune Checkpoint Immunotherapy Targeted Therapy

### Reference

Taoufik Y, et al. (1997) Human immunodeficiency virus gp120 inhibits interleukin-12 secretion by human monocytes: an indirect interleukin-10-mediated effect. *Blood*. 89 (8): 2842-8.

Fantuzzi L, et al. (1996) Induction of interleukin-12 (IL-12) by recombinant glycoprotein gp120 of human immunodeficiency virus type 1 in human monocytes/macrophages: requirement of gamma interferon for IL-12 secretion. *J Virol*. 70 (6): 4121-4.

Aragane Y, et al. (1995) IL-12 is expressed and released by human keratinocytes and epidermoid carcinoma cell lines. *J Immunol*. 153 (12): 5366-72.

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