

# Recombinant Human IL-12 Protein (GMP Grade)

Please read the manual carefully before use.

**Cat. No.** PM103

**Version No.** Version 1.0

**Storage:** at -20°C for two years.

## Description

Interleukin-12 (IL-12), also referred to as natural killer cell stimulatory factor (NKSF)<sup>[1]</sup>, cytotoxic T lymphocyte maturation factor (CLMF)<sup>[2-3]</sup>, or p70<sup>[4]</sup>, consists of the IL-12B (p40) and IL-12A (p35) subunits, which are linked by disulfide bonds. IL-12 is a crucial immunoregulatory cytokine primarily produced by activated macrophages and dendritic cells. Among its numerous pleiotropic functions, IL-12 has been shown to induce the production of interferon gamma (IFN-γ), promote the differentiation of Th1 cells, activate T cells, and stimulate the proliferation of NK cells. These functions are mediated by the binding of IL-12 to its heterodimeric transmembrane receptor complex<sup>[5]</sup>. The product is a recombinant fusion of the p40 and p35 subunits, demonstrating significant biological activity.

## Product Information

Expressed system: CHO

Molecular weight: 59 kDa

Purity: > 95% by SEC-HPLC, SDS-PAGE analysis.

Endotoxin: < 10 EU/mg

Biological activity: Measured interferon gamma (IFN-γ) secretion using human natural killer cell line NK-92, ED<sub>50</sub> between 1-5 ng/ml.

Form: lyophilized, sterile

## Kit Content

Component	PM103-01	PM103-02	PM103-03
Recombinant Human IL-12 Protein (GMP Grade)	10 µg	50 µg	1 mg

## Usage guide

Reconstitution: We recommend the vial be briefly centrifuged prior to opening. Reconstitute with sterile, distilled water on ice at a concentration no less than 100 µg/ml.

Storage: Lyophilized preparation at -20°C, preferably desiccated. Upon reconstitution, the protein may be stored at 2°C to 8°C for up to one week. For long term storage of the reconstituted protein, apportion into working aliquots and store at -80°C for up to 12 months. Avoid repeated freeze/thaw cycles.

## References

- [1] Wolf SF, Temple PA, Kobayashi M, Young D, et al. Cloning of cDNA for natural killer cell stimulatory factor, a heterodimeric cytokine with multiple biologic effects on T and natural killer cells. *J Immunol.* 1991, 146(9):3074-81.
- [2] Stern AS, Podlaski FJ, Hulmes JD, Pan YC, et al. Purification to homogeneity and partial characterization of cytotoxic lymphocyte maturation factor from human B-lymphoblastoid cells. *Proc Natl Acad Sci*, 1990, 87(17):6808-12.
- [3] Gubler U, Chua AO, Schoenhaut DS, Dwyer CM, et al. Coexpression of two distinct genes is required to generate secreted bioactive cytotoxic lymphocyte maturation factor. *Proc Natl Acad Sci USA*, 1991, 88(10):4143-7.
- [4] Kobayashi M, Fitz L, Ryan M, Hewick RM, et al. Identification and purification of natural killer cell stimulatory factor (NKSF), a cytokine with multiple biologic effects on human lymphocytes. *J Exp Med*, 1989, 170(3):827-45.
- [5] Jayanthi S, Koppolu Bp, Smith SG, Jalah R, et al. Efficient production and purification of recombinant human interleukin-12 (IL-12) overexpressed in mammalian cells without affinity tag. *Protein Expr Purif*, 2014, 102:76-84.

**For research use only, not for clinical diagnosis.**

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