

Recombinant human IL-12

CHO expressed human interleukin-12 with HSA

Cat. code: rcyc-hil12; rcyc-hil12-5

<https://www.invivogen.com/human-il12>

For research use only

Version 25A29-NJ

PRODUCT INFORMATION

Contents

Recombinant human IL-12 is provided as a lyophilized powder and is available in two quantities:

- **rcyc-hil12:** 10 µg
- **rcyc-hil12-5:** 50 µg (5 x 10 µg)

Note: This product is sterile filtered prior to lyophilization.

- 1.5 ml endotoxin-free water for rcyc-hil12 and rcyc-hil12-5

Storage and stability

- Recombinant human IL-12 is shipped at room temperature. Upon receipt, it should be immediately stored at -20 °C.
- Upon resuspension, prepare aliquots of recombinant human IL-12 and store at 4 °C for 1 week or at -20 °C to -80 °C for 12 months.

Note: Avoid repeated freeze-thaw cycles.

Quality control

- Purity: ≥ 90% (SDS-PAGE)
- Endotoxin level: ≤ 0.1 EU/µg (LAL assay)
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using **HEK-Blue™ TLR2** and **HEK-Blue™ TLR4** cells.
- The biological activity of IL-12 is confirmed using **HEK-Blue™ IL-12** cells.

Characteristics

- Alternate name: IL-12 p70, Cytotoxic lymphocyte maturation factor (CLMF), NK cell stimulatory factor (NKSF)
- Source: Mammalian; Chinese hamster ovary (CHO) cells
- Carrier: HSA (human serum albumin)
- Tag: Tag-free
- Construction: Heterodimer linked by 10 amino acids (a.a.)
- Accession number: P29460.1 (IL-12p40), P29459.2 (IL-12p35)
- Protein size: 513 a.a (I23-S328(p40)-Linker-R23-S219(p35))
- Molecular mass: ~ 70 kDa (SDS-PAGE)
- Formulation: Recombinant human IL-12 was lyophilized from a 0.2 µm filtered phosphate buffer saline (pH 7.4), 5% saccharose, 1% HSA.
- Solubility: 100 µg/ml in water

APPLICATIONS

- Cellular assays

PRODUCT DESCRIPTION

Interleukin 12 (IL-12) is a pro-inflammatory cytokine produced by macrophages and dendritic cells in response to microbial infections. IL-12 drives IFN-γ production, proliferation of activated T and NK cells, and differentiation in Th1 cells. Dysregulated IL-12 production is linked to immune-mediated inflammatory diseases such as psoriasis, rheumatoid arthritis, Crohn's disease, and multiple sclerosis^{1, 2}.

Recombinant human IL-12 (IL-12 p70) is a high-quality and biologically active cytokine, validated using proprietary reporter cells. This heterodimeric cytokine is composed of two subunits, p35 and p40, linked with a 10 amino acid sequence. It is produced in CHO cells to ensure protein glycosylation and *bona fide* 3D structure. Recombinant human IL-12 is purified by size-exclusion chromatography.

Recombinant human IL-12 can be used together with **HEK-Blue™** IL-12 cells for the screening of inhibitory molecules, such as Ustekinumab, a therapeutic monoclonal antibody targeting the IL-12 p40 subunit.

1. Dembic, Z., 2015. Chapter 6 - Cytokines of the immune system: Interleukins. The cytokines of the immune system (book): 143-239. **2. Floss D.M., et al., 2020.** IL-12 and IL-23-Close Relatives with Structural Homologies but Distinct Immunological Functions. Cells, 9(10): 2184.

METHODS

Preparation of stock solution (100 µg/ml):

1. Add 100 µl of endotoxin-free water (provided) to 10 µg of recombinant human IL-12.
2. Mix gently by pipetting until completely resuspended.
3. Use immediately or prepare aliquots and store at -20 °C or -80 °C. Avoid freeze-thaw cycles.
4. Further dilutions can be prepared in the appropriate aqueous buffer, such as cell culture medium containing serum.

RELATED PRODUCTS

Product	Cat. Code
HEK-Blue™ IL-12 Cells	hkb-il12
Anti-hIL-12/IL-23-p40-hIgG1	hil12p40-mab1

TECHNICAL SUPPORT

InvivoGen USA (Toll-Free): 888-457-5873

InvivoGen USA (International): +1 (858) 457-5873

InvivoGen Europe: +33 (0) 5-62-71-69-39

InvivoGen Asia: +852 3622-3480

E-mail: info@invivogen.com

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www.invivogen.com