Epoto Biotech

南京艾璞拓生物科技有限公司

Recombinant Human IL12, Tag Free

Catalog Number: HF-1012

General Information

Synonyms	Human IL12; hIL-12, recombinant IL12, interleukin 12
Accession	P29460 (IL-12p40), P29459 (IL-12p35)
Source	Human embryonic kidney cell, HEK293-derived human IL12 protein
	IL-12 p40 (Ile23-Ser328), IL-12 p35 (Arg23-Ser219)
Predicted Moleucular weight	22.5 kDa + 34.7 kDa

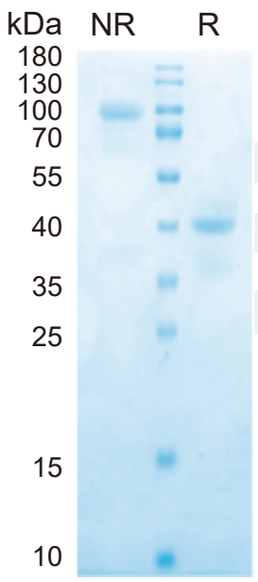
Components and Storage

Formulation	Solution protein.
	Dissolved in sterile PBS buffer.
	This solution can be diluted into other aqueous buffers. Centrifuge the vial prior to opening.
Storage and Stability	Avoid repeated freeze-thaw cycles.
	It is recommended that the protein be aliquoted for optimal storage.
	12 months from date of receipt, -20 to -70 °C as supplied.
Shipping	Shipping with dry ice.

Quality

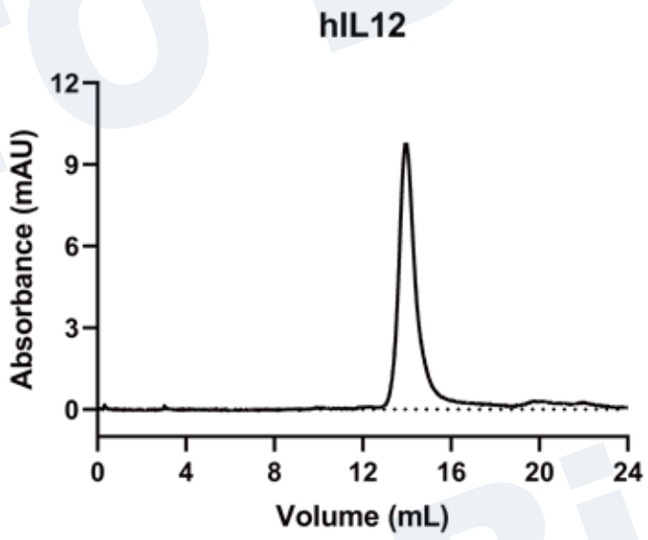
Purity	> 95%, determined by SDS-PAGE.
Endotoxin Level	<0.010 EU per 1 ug of the protein by the LAL method.
Activity	Measured in a cell proliferation assay using PHA-stimulated human T lymphoblasts.
	The EC50 for this effect is 4-40 pg/mL

SDS-PAGE



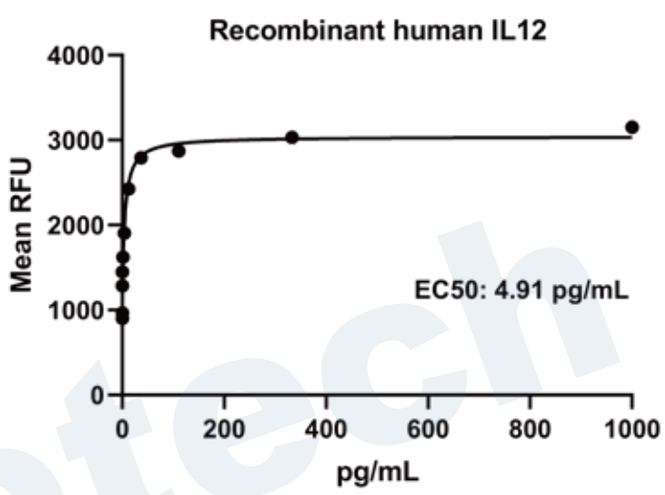
2 ug/lane protein was resolved with SDS-PAGE under non-reducing (NR) and reducing (R) conditions and visualized by Coomassie Blue staining.

Gel filtration



Size-exclusion chromatography of recombinant human IL12 protein (280 nm absorbance)

Bioactivity



Recombinant human IL12 (Catalog # HF-1012) stimulates cell proliferation in PHA-activated human T lymphoblasts

Background

Interleukin-12 (IL-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 (1). The p40 subunit of IL-12 has been shown to have extensive amino acid sequence homology to the extracellular domain of the human IL-6 receptor while the p35 subunit shows distant but significant sequence similarity to IL-6, G-CSF, and chicken MGF (2, 3). These observations have led to the suggestion that IL-12 might have evolved from a cytokine/soluble receptor complex. Human and murine IL-12 share 70% and 60% amino acid sequence homology in their p40 and p35 subunits, respectively. IL-12 apparently shows species specificity with human IL-12 reportedly showing minimal activity in the murine system. IL-12 is produced by macrophages and B lymphocytes and has been shown to have multiple effects on T cells and natural killer (NK) cells (4). These effects include inducing production of IFN-r and TNF by resting and activated T and NK cells, synergizing with other IFN-gamma inducers at both the transcriptional and post-transcriptional levels. This interaction induces IFN-gamma gene expression, enhancing the cytotoxic activity of resting NK and T cells, inducing and synergizing with IL-2 in the generation of lymphokine-activated killer (LAK) cells, acting as a co-mitogen to stimulate proliferation of resting T cells, and inducing proliferation of activated T and NK cells (5). Current evidence indicates that IL-12, 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 IL-12 has therapeutic potential as a stimulator of cell-mediated immune responses to microbial pathogens, metastatic cancers, and viral infections such as AIDS.

Reference

1. Gubler, U. et al. (1991) Proc. Natl. Acad. Sci. 88:4143.
2. Gearing, D. et al. (1991) Cell 66:9.
3. Merberg, D. et al. (1992) Immunology Today 13:78.
4. Wolf, S.F. et al. (1991) Journal of Immunology 146:3074.
5. Airoldi, I. et al. (2000) Journal of Immunology 165:6880.

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