

Recombinant Human Interleukin-12, His, Insect Cells Derived

#R00050

Size: 10 µg/100 µg/500 µg

Stability & Storage

Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.



Warning: This product is intended for scientific research only. It is not to be used for medical or diagnostic procedures in humans or animals, nor as a food, cosmetic, or household product.

Background

Interleukin 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. 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. 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. These effects include inducing production of IFN-gamma 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. 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.

AA Sequence

HHHHHHHHIWELKKDVYVVELDWYPDAPGEMVVL
CDTPEEDGITWTLDSSEVLGSGKTLTIQVKEFGDAG
QYTCHKGGEVLSHSLLLLHKKEDGIWSTDILKDQKEP
KNKTFLRCEAKNYSGRFTCWWLTTISTDLTFSVKSSR
GSSDPQGVTCGAATLSAERVGRDNKEYEYSVECQE
DSACPAAEESLPIEVMVDAVHKLKYENYTSSFFIRDIIK
PDPPKNLQLKPLKNSRQVEVSWEYPDTWSTPHSYF
SLTFCVQVQGKSKREKKDRVFTDKTSATVICRKNASI
SVRAQDRYSSSWSEWASVPCSGSGSSRGGSGSG
GSGGGGSKRNLPVATPDPGMFPC LHHSQNLLRAVS
NMLQKARQTLEFPCTSEEIDHEDITKDKTSTVEACL
PLELTKNESCLNSRETSFITNGSCLASRKTSFMMALC
LSSIYEDLKMYQVEFKTMNAKLLMDPKRQIFLDQNM
L AVIDELMQALNFNSETVPQKSSLEEPDFYKTKIKLCILL
HAFRIRAVTIDRVMSYLNAS

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.

Product Specification	
Species	Human
Source	Insect Cells
Tags	His
Molecular Weight	Approximately 59.8 kDa on SDS-PAGE under reducing conditions, containing 531 amino acids.
Purity	> 95% by SDS-PAGE analyses.
Biological Activity	Measured by its ability to enhance IFN-gamma secretion in NK-92 human natural killer lymphoma cells. The ED ₅₀ for this effect is typically 0.1-1.0 ng/mL.
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS, 0.02 %

Endotoxin	Tween-20, pH 7.0 Less than 0.1 EU/ μ g of rHuIL-12, His as determined by LAL method.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.