Human IL-12 Protein, Research Grade

Catalog # IL2-H5213

Features and Advantages

- Native Conformation: Native sequences, tag-free and natural function.
- Reliable Activity: Biological activity calibrated against WHO/NIBSC standards.
- Stringent Quality Control: Protein content, purity, and cell-based bioactivity testing for each batch.
- Lowest Endotoxin level (<0.01 EU/ug).
- Safety Assurance: Sterile filtration through 0.2 μm membrane.
- AOF: Animal origin-free raw materials throughout the production process.

Synonym

IL12, p70, Interleukin-12

Source

Human IL-12 Protein, Research Grade (IL2-H5213) is expressed from human 293 cells (HEK293). It contains AA Ile 23 - Ser 328 & Arg 23 - Ser 219 (Accession # P29460-1 & P29459-1).

Predicted N-terminus: Ile 23

Molecular Characterization

This protein carries no "tag".

The protein has a calculated MW of 58.9 kDa. The protein migrates as 76 kDa±3 kDa when calibrated against Star Ribbon Pre-stained Protein Marker under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 0.01 EU per μg by the LAL method / rFC method.

Purity

>95% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Storage

For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

- -20°C to -70°C for 24 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

ACRO Quality Management System

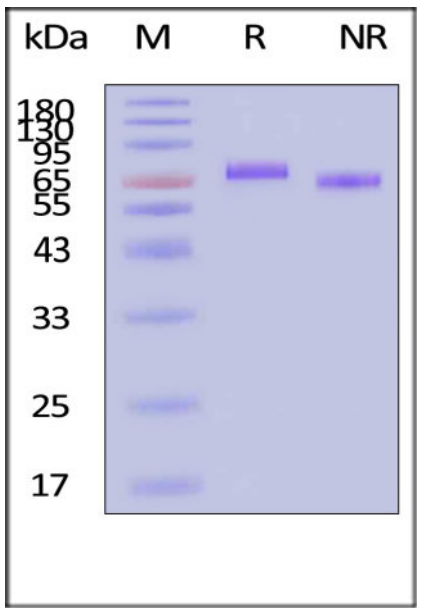
- QMS(ISO, GMP)
- Quality Advantages
- Quality Control Process

Quality Description

ACRO's Research-grade products are suitable for a wide range of cell culture applications, particularly for research use in academic institutions. These products are sterilized by filtration, followed by lyophilization where applicable. Typical specifications include endotoxin levels of <0.01 EU/μg and purities >95%. Biological activity is calibrated against WHO/NIBSC standards when available.
ACRO's Premium-grade (Pre-GMP) products are characterized by their high quality and enhanced safety profiles, making them ideal for early-stage discovery and manufacturing processes in cell therapy companies. A key advantage is their seamless transition to corresponding GMP-grade versions. Biological activity is calibrated against WHO/NIBSC standards when available. Typical specifications include endotoxin levels of <0.01

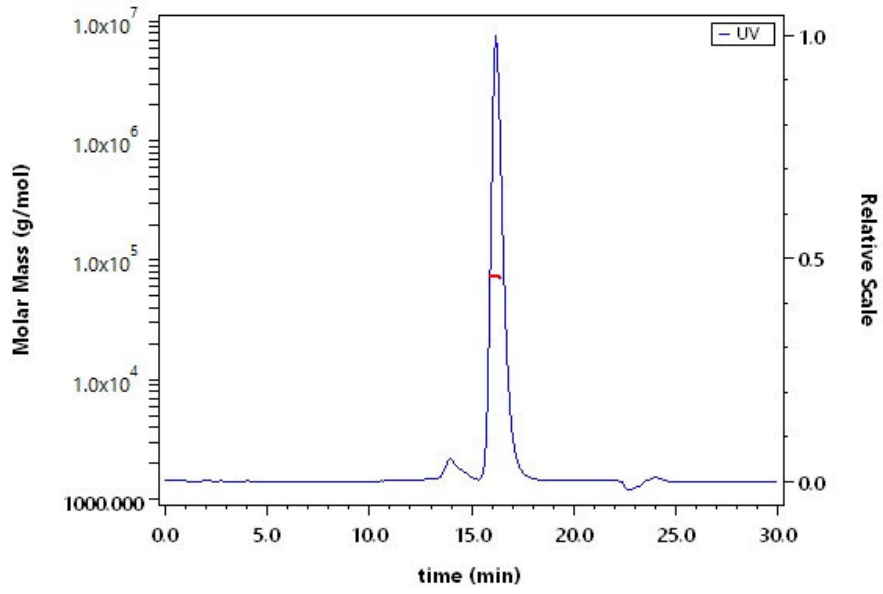
EU/μg and purities >95%. In addition, rigorous testing is conducted to ensure the absence of mycoplasma, HCD, and HCP, thereby guaranteeing product safety.

SDS-PAGE



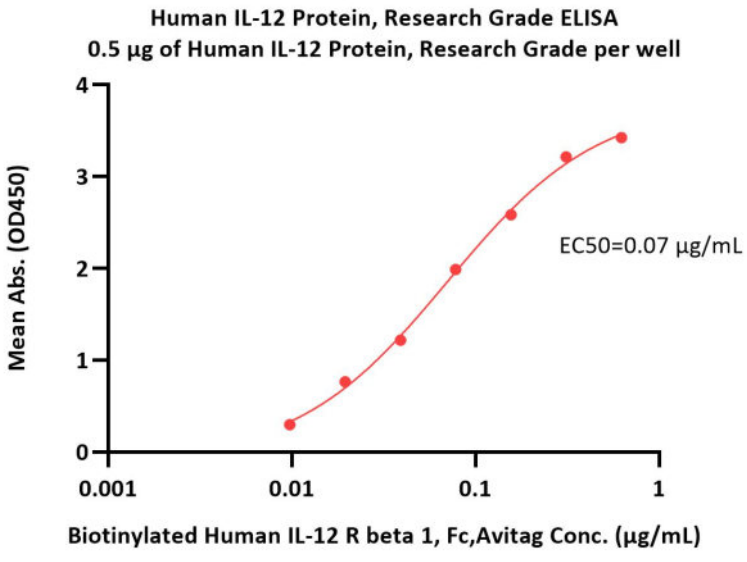
Human IL-12 Protein, Research Grade on SDS-PAGE under reducing (R) and non-reducing (NR) conditions. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95% (With Star Ribbon Pre-stained Protein Marker).

SEC-MALS



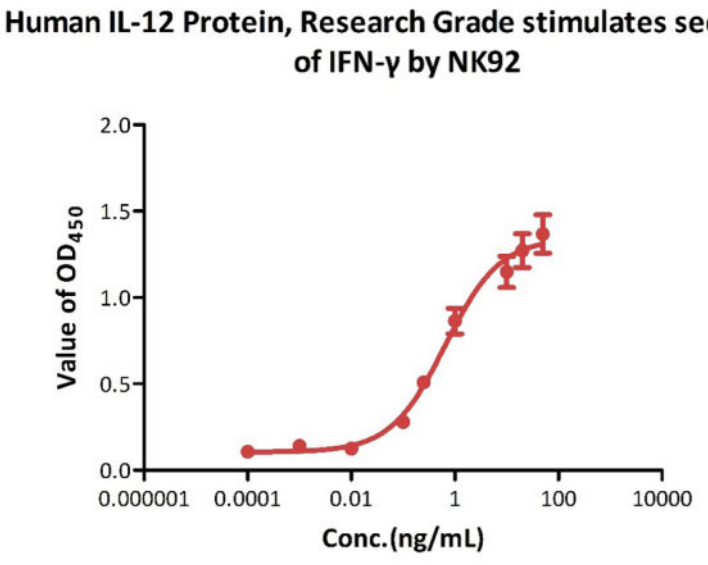
The purity of Human IL-12 Protein, Research Grade (Cat. No. IL2-H5213) is more than 90% and the molecular weight of this protein is around 60-80 kDa verified by SEC-MALS.

Bioactivity-ELISA



Immobilized Human IL-12 Protein, Research Grade (Cat. No. IL2-H5213) at 5 μg/mL (100 μL/well) can bind Biotinylated Human IL-12 R beta 1, Fc,Avitag (Cat. No. ILB-H82F7) with a linear range of 0.02-0.2 μg/mL (QC tested).

Bioactivity-CELL BASE



Human IL-12 Protein, Research Grade (Cat. No. IL2-H5213) stimulates secretion of IFN-γ by NK-92. The specific activity of Human IL-12 Protein, Research Grade is > 1.00 x 10^7 IU/mg, which is calibrated against human IL-12 WHO International Standard (NIBSC code: 95/544) (QC tested).

Background

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.