



### Synonym

IL21,Za11,Interleukin-21

### Source

Human IL-21 Protein (E. coli), premium grade(IL1-H5114) is expressed from E. coli cells. It contains AA Gln 30 - Ser 162 (Accession # [Q9HBE4-1](#)).

Predicted N-terminus: Met

*Human IL-21 Protein (E. coli), premium grade (IL1-H5114), designed for preclinical stage, has the same activity and performance with GMP Human IL-21 Protein, which enables a seamless transition from preclinical development to clinical phases. Premium Grade product offer a cost efficient alternative of GMP Grade products for the early development phase when safety of raw materials is not top priority. By using Premium Grade products in early development phase, you can transition easily into clinical and commercial phase without need to revalidate the raw materials and modify manufacturing process.*

### Molecular Characterization

**IL-21(Gln 30 - Ser 162)  
Q9HBE4-1**

This protein carries no "tag".

The protein has a calculated MW of 15.5 kDa. The protein migrates as 17 kDa±3 kDa when calibrated against [Star Ribbon Pre-stained Protein Marker](#) under reducing (R) condition (SDS-PAGE).

### Endotoxin

Less than 0.01 EU per µg by the LAL method.

### Host Cell Protein

<0.5 ng/µg of protein tested by ELISA.

### Host Cell DNA

<0.02 ng/µg of protein tested by qPCR.

### Sterility

Negative

### Mycoplasma

Negative.

### Purity

>95% as determined by SDS-PAGE.

>95% as determined by SEC-HPLC.

### 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

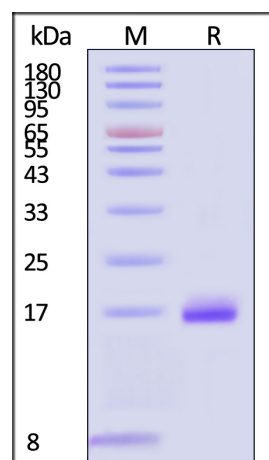
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

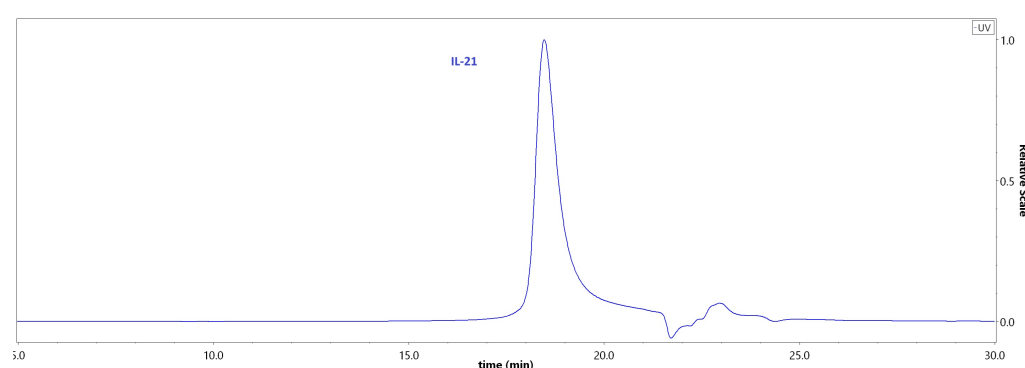
This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

### SDS-PAGE



### SEC-HPLC



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# Human IL-21 Protein (E. coli), premium grade

Catalog # IL1-H5114

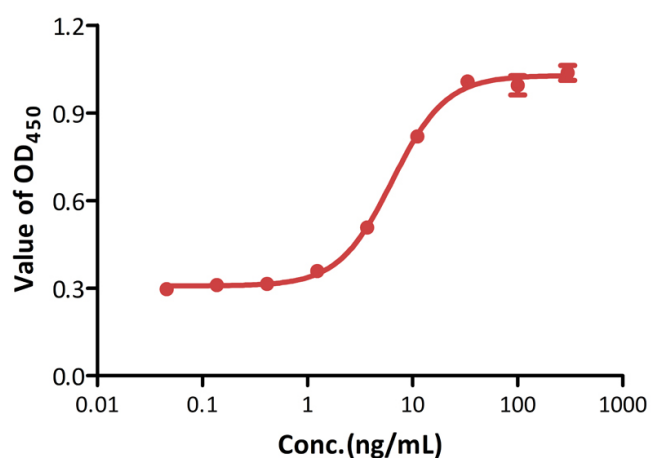


Human IL-21 Protein (E. coli), premium grade on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95% (With [Star Ribbon Pre-stained Protein Marker](#)).

The purity of Human IL-21 Protein (E. coli), premium grade (Cat. No. IL1-H5114) was greater than 95% as determined by SEC-HPLC.

## Bioactivity-Bioactivity CELL BASE

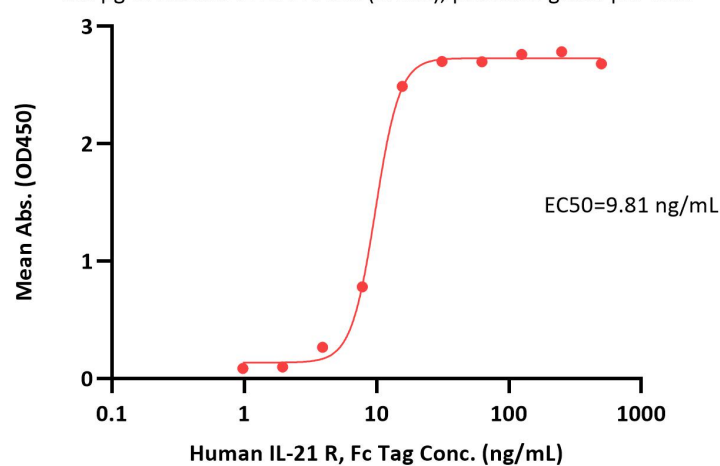
Human IL-21 Protein(E. coli), premium grade stimulates secretion of IFN- $\gamma$  by NK92



Human IL-21 Protein (E. coli), premium grade (Cat. No. IL1-H5114) stimulates secretion of IFN- $\gamma$  by NK-92 human natural killer lymphoma cells stimulated with GMP Human IL-15 Protein (Cat. No. GMP-L15H13). The specific activity of Human IL-21 Protein (E. coli), premium grade is  $> 1.00 \times 10^5$  U/mg (QC tested).

## Bioactivity-ELISA

Human IL-21 Protein (E. coli), premium grade ELISA  
0.5  $\mu$ g of Human IL-21 Protein (E. coli), premium grade per well



Immobilized Human IL-21 Protein (E. coli), premium grade (Cat. No. IL1-H5114) at 5  $\mu$ g/mL (100  $\mu$ L/well) can bind Human IL-21 R, Fc Tag (Cat. No. ILR-H5257) with a linear range of 1-16 ng/mL (QC tested).

## Background

Interleukin-21 (IL-21) is a secreted protein which belongs to the IL-15 / IL-21 family. Interleukin-21 / IL-21 belongs to a family of cytokines that bind to a composite receptor consisting of a private receptor (IL21R) and the common cytokine receptor gamma chain (gamma(C)). Interleukin-21 / IL-21 impacts a number of cell types, including CD8<sup>+</sup> memory T cells, NK cells and subsets of CD4 memory T cells. The IL-21R is widely distributed on lympho-haematopoietic cells. IL-21 is a pleiotropic cytokine produced by CD4<sup>+</sup> T cells in response to antigenic stimulation. Its action generally enhances antigen-specific responses of immune cells. IL-21 promotes the anti-tumor activity of CD8<sup>+</sup> T-cells and NK cells. IL-21 exerts its effect through binding to a specific type I cytokine receptor, IL-21R, which also

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contains the  $\gamma$  chain ( $\gamma c$ ) found in other cytokine receptors including IL-2, IL-4, IL-7, IL-9 and IL-15. The IL-21/IL-21R interaction triggers a cascade of events which includes activation of the tyrosine kinases JAK1 and JAK3, followed by activation of the transcription factors STAT1 and STAT3.

## Clinical and Translational Updates

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