

## Recombinant Human IL-21 Protein

Size / Cat.No.: 50µg / GMP-TL509-0050  
100µg / GMP-TL509-0100  
1mg / GMP-TL509-1000 (Customize)

### Product Name

Generic Name            Recombinant Human IL-21 Protein

Synonym                 CVID11, IL-21, Za11

### Product Information

Protein sequence	A DNA sequence encoding the extracellular domain of human IL-21 (Q9HBE4-1: Q29-S162) was expressed with the C-terminal fused Fc region of human IgG1.
Expression Host	CHO cells
QC Testing Purity	> 95 % as determined by SDS-PAGE
Activity	Measured by its ability of inducing human natural killer lymphoma NK-92 cells to secrete interferon- $\gamma$ . The expected ED50 is $\leq$ 50 ng/ml
Endotoxin	< 0.01 EU per µg of the protein as determined by the LAL method.
Molecular Mass	The recombinant human IL-21 predicts a molecular mass of 41.9 KD.
Formulation	Lyophilized from sterile PBS, pH 7.4. Normally 6 % mannitol are added as protectants before lyophilization.
Stability & Storage	Lyophilized preparation can be stored at -20 °C. 6 months at -20°C under sterile conditions after reconstitution. 12 months at -80°C under sterile conditions after reconstitution. Recommend to aliquot the protein into smaller quantities after reconstituting with water for injection, normal saline or PBS, and keep the diluted concentration above 100µg/mL. Avoid repeated freeze-thaw cycles.

## Background

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. The biological effects of IL-21 include: inducing the differentiation of T-cell-stimulated B-cells into plasma cells and memory B-cells; the stimulation of IgG production in conjunction with IL-4; and the induction of apoptotic effects in naïve B-cells and stimulated B-cells in the absence of T-cell signaling. Additionally, 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 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.

## References

- 1.Coquet JM, et al. (2007) IL-21 is produced by NKT cells and modulates NKT cell activation and cytokine production. *J Immunol.* 178(5):2827-34.
- 2.Wei L, et al. (2007) IL-21 is produced by Th17 cells and drives IL-17 production in a STAT3-dependent manner. *J Biol Chem.* 282(48):34605-10.
- 3.Parrish-Novak J, et al. (2002) Interleukin-21 and the IL-21 receptor: novel effectors of NK and T cell responses. *J Leukoc Biol.* 72(5):856-63.
- 4 .Kuchen S, et al. (2007) Essential role of IL-21 in B cell activation, expansion, and plasma cell generation during CD4<sup>+</sup> T cell-B cell collaboration. *J Immunol.* 179(9):5886-96.

## Product Use

For research and manufacturing use