

Recombinant Human IL-21 Protein

Catalog Number: GMP-TL509

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	Determined by inducing human natural killer lymphoma NK-92 cells to secrete interferon- γ . The expected ED ₅₀ is \leq 50 ng/ml
Endotoxin Level	< 0.01 EU per μ g of the protein as determined by the LAL method.
Molecular Mass	The recombinant human IL-21 predicts a molecular mass of 41.9 kDa.
Formulation	Lyophilized from sterile PBS, pH 7.4. Normally 6 % mannitol are added as protectants before lyophilization. 24 months at 2 °C to 8 °C in lyophilized state. 6 months at -20 °C under sterile conditions after reconstitution.
Stability & Storage	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 100 μ g/mL. Avoid repeated freeze-thaw cycles.

Background

IL-21 is a pleiotropic cytokine produced by CD4+ 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+ 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 γ chain (γ 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+ T cell-B cell collaboration. *J Immunol.* 179(9):5886-96.