Data Sheet (Cat.No.TMPY-01963)

TargetMol

IL-21 Protein, Human, Recombinant

General Information

Synonyms:	CVID11;IL-21;Za11;interleukin 21
Protein Construction:	A DNA sequence encoding the mature form of human IL-21 (Q9HBE4-1) (Gln30-Ser162) was expressed with an initial Met. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	Q9HBE4-1
Molecular Weight:	15.6 kDa (predicted); 17 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by its ability to induced Interferon gamma secretion by human natural killer lymphoma NK-92 cells. The ED50 for this effect is 0.4-2 ng/mL.
Purity:	≥ 95 % as determined by SDS-PAGE. ≥ 95 % as determined by SEC-HPLC.
Endotoxin:	< 5 EU/mg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

IL21 belongs to the IL-15/IL-21 family. It is a cytokine with immunoregulatory activity. Cytokines are proteinaceous signaling compounds that are major mediators of the immune response. They control many different cellular functions including proliferation, differentiation, and cell survival/apoptosis but are also involved in several pathophysiological processes including viral infections and autoimmune diseases. Cytokines are synthesized under various stimuli by a variety of cells of both the innate (monocytes, macrophages, dendritic cells) and

adaptive (T- and B-cells) immune systems. IL21 is expressed in activated CD4-positive T-cells but not in CD8-positive T-cells, B-cells, or monocytes. It may promote the transition between innate and adaptive immunity. IL-21 has been tried as a therapy for alleviating allergic responses. It can significantly decrease pro-inflammatory cytokines produced by T cells in addition to decreasing IgE levels in a mouse model for rhinitis (nasal passage inflammation).Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

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.
Inhibition of IL-21/IL-21R Signaling by Fucoxanthin: Structure-Based and Experimental Analysis
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.
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.
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.

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