

DESCRIPTION

Source *E. coli*-derived human IL-21 protein
Gln32-Ser162, with a N-terminal Met
Accession # Q9HBE4.3

N-terminal Sequence Analysis Met

Predicted Molecular Mass 15 kDa

SPECIFICATIONS

SDS-PAGE 17 kDa, reducing conditions

Activity Measured by its ability to enhance IFN- γ secretion in NK-92 human natural killer lymphoma cells.
The ED₅₀ for this effect is \leq 8 ng/mL.

Endotoxin Level <0.10 EU per 1 μ g of the protein by the LAL method.

Purity >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation Lyophilized from a 0.2 μ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

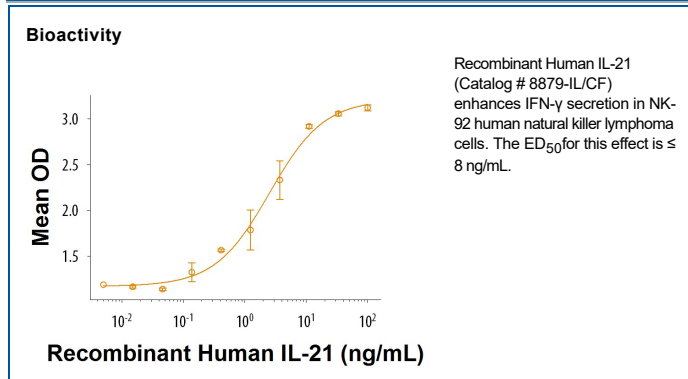
Reconstitution Reconstitute at 100 μ g/mL in PBS.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, \leq -20 °C under sterile conditions after reconstitution.

DATA



BACKGROUND

IL-21 (Interleukin-21) is a potent cytokine regulating many cell types of the immune system. IL-21 is produced by activated T follicular helper cells (Tfh), Th17 cells, and NKT cells (2-6). Tfh-derived IL-21 plays an important role in the development of humoral immunity through its autocrine effects on the Tfh cell and paracrine effects on immunoglobulin affinity maturation, plasma cell differentiation, and B cell memory responses (4, 8, 9). IL-21 protein regulates several aspects of T cell function. It co-stimulates the activation, proliferation, and survival of CD8+ T cells and NKT cells and promotes Th17 cell polarization (3, 5, 6, 11, 12). IL-21 blocks the generation of regulatory T cells and their suppressive effects on CD4+ T cells (13, 14). In addition to its role in T cell biology, IL-21 also plays a critical role in B cell activation, proliferation, differentiation, and apoptosis (2). It is also required for the migration of dendritic cells to draining lymph nodes (10). And IL-21 suppresses cutaneous hypersensitivity reactions by limiting allergen-specific IgE production and mast cell degranulation (16). In the autoimmune disease Systemic lupus erythematosus (SLE), a link between IL-21 and SLE disease susceptibility and progression was recently reported (19).

IL-21 protein exerts its biological effects through a heterodimeric receptor complex of gamma c and the IL-21-specific IL-21 R (2, 7). IL-21 is an approximately 14 kDa four-helix-bundle member of the family of cytokines that utilize the common gamma chain (gamma c) as a receptor subunit. gamma c is also a subunit of the receptors for IL-2, IL-4, IL-7, IL-9, and IL-15 (1). IL-21 R engagement enhances the cytolytic activity and IFN-gamma production of activated NK cells but limits the expansion of resting NK cells (15). Dysregulation of the IL-21/IL-21 R system contributes to the development of multiple immunological disorders (1, 17). The 133 amino acid (aa) mature human IL-21 protein shares 63% and 61% aa sequence identity with mouse and rat IL-21 protein, respectively. Alternative splicing generates an additional isoform with a substitution of the C-terminal 16 amino acids (18).

References:

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