

**DESCRIPTION**

**Source** *E. coli*-derived human IL-21 protein  
Gln25-Ser155, with a N-terminal Met  
Accession # Q9HBE4

**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- $\gamma$  secretion in NK-92 human natural killer lymphoma cells.  
The ED<sub>50</sub> for this effect is  $\leq$  8 ng/mL.

**Endotoxin Level**  $<0.10$  EU per 1  $\mu$ 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  $\mu$ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

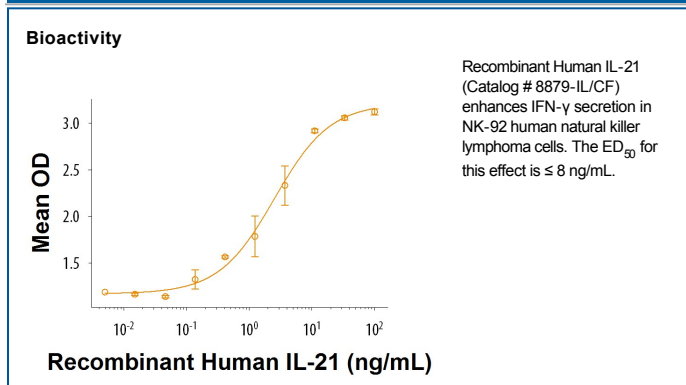
**Reconstitution** Reconstitute at 100  $\mu$ g/mL in PBS.

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

**Stability & Storage**

- 12 months from date of receipt,  $\leq -20$  °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**

Interleukin-21 (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 is produced by activated T follicular helper cells (Tfh), Th17 cells, and NKT cells (2-6). It exerts its biological effects through a heterodimeric receptor complex of  $\gamma_c$  and the IL-21-specific IL-21 R (2, 7). 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). It is also required for the migration of dendritic cells to draining lymph nodes (10). IL-21 regulates several aspects of T cell function. It co-stimulates the activation, proliferation, and survival of CD8<sup>+</sup> T cells and NKT cells and promotes Th17 cell polarization (3, 5, 6, 11, 12). It blocks the generation of regulatory T cells and their suppressive effects on CD4<sup>+</sup> T cells (13, 14). 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). In addition, IL-21 suppresses cutaneous hypersensitivity reactions by limiting allergen-specific IgE production and mast cell degranulation (16). 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 shares 63% and 61% aa sequence identity with mouse and rat IL-21, respectively. Alternative splicing generates an additional isoform with a substitution of the C-terminal 16 amino acids (18).

**References:**

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