Recombinant Human IL-21

Catalog Number: 8879-IL

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

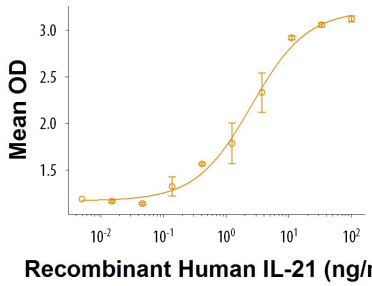
SDS-PAGE	17 kDa, reducing conditions
Activity	Measured by its ability to enhance IFN-γ secretion in NK-92 human natural killer lymphoma cells. The ED_{50} for this effect is ≤ 8 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS containing at least 0.1% human or bovine serum albumin.
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, ≤ -20 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution.

DATA

Bioactivity



Recombinant Human IL-21 (Catalog # 8879-IL) enhances IFN-γ secretion in NK-92 human natural killer lymphoma cells. The ED_{50} for this effect is ≤ 8 ng/mL.

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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 (γ_c) as a receptor subunit. γ_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 γ_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 $CD8^+$ 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 $CD4^+$ T cells (13, 14). IL-21 R engagement enhances the cytolytic activity and IFN-γ 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:

1. Tangye, S.G. (2015) Curr. Opin. Immunol. **34**:107.
2. Parrish-Novak, *et al.* (2000) Nature **408**:57.
3. Coquet, J.M. *et al.* (2007) J. Immunol. **178**:2827.
4. Vogelzang, A. *et al.* (2008) Immunity **29**:127.
5. Korn, T. *et al.* (2007) Nature **448**:484.
6. Nurieva, R. *et al.* (2007) Nature **448**:480.
7. Asao, H. *et al.* (2001) J. Immunol. **167**:1.
8. Zotos, D. *et al.* (2010) J. Exp. Med. **207**:365.
9. Rankin, A.L. *et al.* (2011) J. Immunol. **186**:667.
10. Jin, H. *et al.* (2009) J. Clin. Invest. **119**:47.
11. Frohlich, A. *et al.* (2009) Science **324**:1576.
12. Yi, J.S., *et al.* (2009) Science **324**:1572.
13. Peluso, I. *et al.* (2007) J. Immunol. **178**:732.
14. Bucher, C. *et al.* (2009) Blood **114**:5375.
15. Kasaian, M.T. *et al.* (2002) Immunity **16**:559.
16. Tamagawa-Mineoka, R. *et al.* (2011) J. Invest. Dermatol. **131**:1513.
17. Ma, J. *et al.* (2011) Cytokine **56**:133.
18. Rahman, M. *et al.* (2007) FEBS Lett. **581**:4001.

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