Recombinant Mouse IL-21

Catalog Number: 594-ML

DESCRIPTION

Source	*E. coli*-derived mouse IL-21 protein Pro25-Ser146, with and without an N-terminal Met Accession # Q9ES17.1
N-terminal Sequence Analysis	Pro25 & Met
Predicted Molecular Mass	14.4 kDa

SPECIFICATIONS

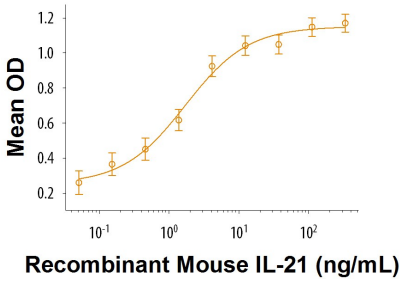
Activity	Measured by its ability to enhance IFN-γ secretion in NK-92 human natural killer lymphoma cells. The ED_{50} for this effect is 3-30 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	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 sterile 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	**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, -20 to -70 °C under sterile conditions after reconstitution.

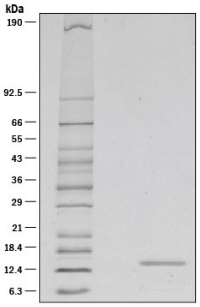
DATA

Bioactivity



Recombinant Mouse IL-21 Protein Bioactivity Recombinant Mouse IL-21 (Catalog # 594-ML) enhances IFN-γ secretion in NK-92 human natural killer lymphoma cells. The ED_{50} is 3-30 ng/mL.

SDS-PAGE



Recombinant Mouse IL-21 Protein SDS-PAGE 1 µg/lane of Recombinant Mouse IL-21 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 15 kDa.

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BACKGROUND

Interleukin-21 (IL-21) is an approximately 14 kDa four-helix-bundle cytokine in 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 mouse IL-21 precursor contains a predicted 17 amino acid (aa) signal sequence and a 129 aa mature chain. Mature mouse IL-21 shares 66%, 59%, 58%, and 88% aa sequence identity with mature canine, human, rabbit, and rat IL-21, respectively.

References:

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