Recombinant Human IL-21 (HEK293 Expressed)

Catalog Number: 11393-IL

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human IL-21 protein Gln32-Ser162 Accession # Q9HBE4.3
N-terminal Sequence Analysis	Blocked at Gln32, revealing Asp33 after deblocking
Predicted Molecular Mass	15 kDa

SPECIFICATIONS

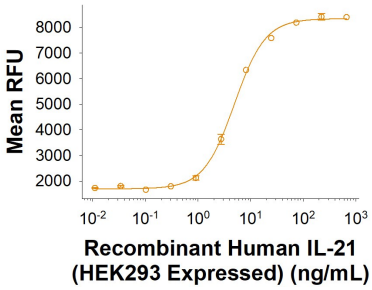
SDS-PAGE	15-17 kDa, under reducing conditions.
Activity	Measured in a cell proliferation assay using B9 mouse hybridoma cells. The ED_{50} for this effect is 3.00-30.0 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute 10 µg size at 100 µg/mL and other sizes at 500 µg/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, -20 to -70 °C under sterile conditions after reconstitution.

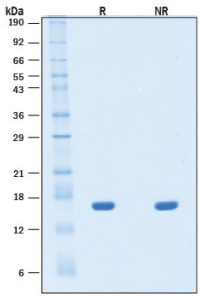
DATA

Bioactivity



Recombinant Human IL-21 (HEK293 Expressed) Protein Bioactivity. Recombinant Human IL-21 stimulates B9 mouse hybridoma cell proliferation. The ED_{50} for this effect is 3.00-30.0 ng/mL.

SDS-PAGE



Recombinant Human IL-21 (HEK293 Expressed) Protein SDS-PAGE. 2 µg/lane of Recombinant Human IL-21 (HEK293 Expressed) Protein (Catalog # 11393-IL) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 15-17 kDa, under reducing conditions.

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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).

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