

DESCRIPTION

Source *E. coli*-derived
His18-Ser146, with an N-terminal Met
Accession # NP_001003347

N-terminal Sequence Analysis Met

Predicted Molecular Mass 15.0 kDa

SPECIFICATIONS

SDS-PAGE 14 kDa, reducing conditions

Activity Measured in a cell proliferation assay using N1186 human T cells. Parrish-Novak, J. *et al.* (2000) *Nature* **408**:57.
The ED₅₀ for this effect is typically 1–5 ng/mL.

Endotoxin Level <0.01 EU per 1 µg of the protein by the LAL method.

Purity >95%, 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 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.

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 canine IL-21 precursor contains a predicted 17 amino acid (aa) signal sequence and a 129 aa mature chain. Mature canine IL-21 shares 75%, 66%, 67%, and 64% aa sequence identity with mature human, mouse, rabbit, and rat IL-21, respectively.

References:

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