

DESCRIPTION

Source *E. coli*-derived
Tyr36-Asn192, with an N-terminal Met
Accession # Q95M33

N-terminal Sequence Analysis Met

Predicted Molecular Mass 18.3 kDa

SPECIFICATIONS

SDS-PAGE 19 kDa, reducing conditions

Activity Measured by its ability to induce IFN- γ secretion by KG-1 human acute myelogenous leukemia cells in the presence of TNF- α . The ED₅₀ for this effect is typically 0.1-0.5 μ g/mL in the presence of 20 ng/mL rhTNF- α .

Endotoxin Level <1.0 EU per 1 μ g of the protein by the LAL method.

Purity >90%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 μ m filtered solution in MOPS, Na₂SO₄, EDTA and DTT with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 μ g/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-18 (IL-18), also known as IL-1F4 and IFN- γ inducing factor (IGIF), is a member of the IL-1 family of cytokines and is a key molecule in the innate immune response (1). Feline IL-18 is synthesized as a 24 kDa proprotein that contains a 35 amino acid (aa) propeptide and a 157 aa mature region (2). Under inflammatory conditions, the propeptide is cleaved by Caspase-1 in the cytoplasm to liberate the mature nonglycosylated 18 kDa monomeric IL-18 (3, 4). Mature feline IL-18 shares 87% - 89% aa sequence identity with canine and porcine IL-18 and 62% - 77% with human, mouse, rat, and rhesus IL-18. IL-18 is secreted by a variety of cell types including macrophages, dendritic cells, and epithelial cells (1, 5). Circulating mature IL-18 is sequestered by soluble IL-18 binding proteins (IL-18 BP) that inhibit IL-18 bioactivity (6). IL-18 interacts with the widely expressed IL-18 R α which then recruits the signaling subunit IL-18 R β (7, 8). The IL-1 family member IL-1F7 also binds to IL-18 R α but does not recruit IL-18 R β or induce signaling (9). IL-1F7 binds IL-18 BP and enhances its neutralizing effect on IL-18 activity (9). IL-18 synergizes with other cytokines to activate NK, Th1, and Th17 cells and to increase the production of IFN- γ (1, 5, 10, 11, 12). IL-18 can also promote Th2 cytokine release which reduces the effectiveness of antiviral responses (13, 14). Increased levels of active IL-18 contribute to the severity of autoimmunity and hypertension, while deficiency of IL-18 results in symptoms of metabolic syndrome (1, 5, 15, 16). In cancer, IL-18 stimulates Th1 and NK cells to target tumor cells, but it can also promote angiogenesis, metastasis, and tumor cell immune evasion (11).

References:

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