

DESCRIPTION

Source *E. coli*-derived rhesus macaque IL-18/IL-1F4 protein
Tyr37-Asp193
Accession # AAK13416

N-terminal Sequence Analysis Tyr37

Predicted Molecular Mass 18.2 kDa

SPECIFICATIONS

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 1-4 ng/mL in the presence of 20 ng/mL recombinant human TNF- α .

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

Purity >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Supplied as a 0.2 μ m filtered solution in Tris, NaCl, EDTA, TCEP and PEG 8000. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution It is recommended that sterile PBS be added to the vial to prepare a working stock solution of no less than 100 μ g/mL. The carrier-free protein should be used immediately upon reconstitution to avoid losses in activity due to non-specific binding to the inside surface of the vial. For long term storage as a dilute solution, a carrier protein (e.g. 0.1% HSA or BSA) should be added to the vial.

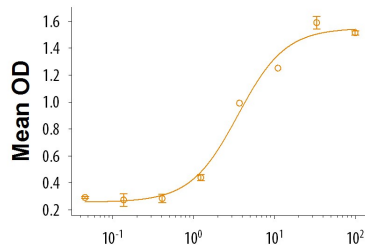
Shipping The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 6 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after opening.

DATA

Bioactivity



Recombinant Rhesus Macaque IL-18 (ng/mL)

Recombinant Rhesus Macaque IL-18/IL-1F4 (Catalog # 2548-RM) induces IFN-gamma secretion by KG-1 human acute myelogenous leukemia cells in the presence of TNF-alpha. The ED₅₀ for this effect is 1-4 ng/mL.

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). Rhesus IL-18 is synthesized as a 24 kDa proprotein that contains a 36 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 rhesus IL-18 shares 96% aa sequence identity with human IL-18 and 60% - 76% with mouse, rat, canine, feline, and porcine 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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