Biotinylated Recombinant Human IL-18/IL-1F4

Catalog Number: BT9124

DESCRIPTION

Source	*E. coli*-derived human IL-18/IL-1F4 protein Tyr37-Asp193 Accession # Q14116
N-terminal Sequence Analysis	Tyr37
Structure / Form	Biotinylated via amines
Predicted Molecular Mass	18 kDa

SPECIFICATIONS

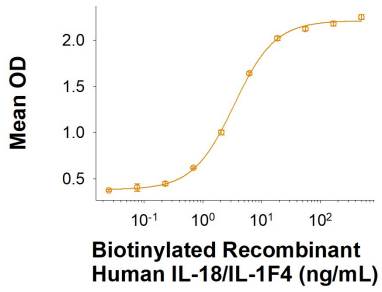
SDS-PAGE	15-21 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human IL-18 BPa His-tag Protein (Catalog # 11236-BP) is immobilized at 0.25 µg/mL (100 µL/well), the concentration of Biotinylated Recombinant Human IL-18/IL-1F4 (Catalog # BT9124) that produces 50% of the binding response is 1.50-12.0 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 and DTT with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 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.

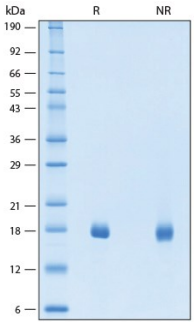
DATA

Binding Activity



Biotinylated Recombinant Human IL-18/IL-1F4 Protein Binding Activity. Measured by its binding ability in a functional ELISA. When Recombinant Human IL-18 BPa His-tag Protein (Catalog # 11236-BP) is immobilized at 0.25 µg/mL (100 µL/well), the concentration of Biotinylated Recombinant Human IL-18/IL-1F4 (Catalog # BT9124) that produces 50% of the binding response is 1.50-12.0 ng/mL.

SDS-PAGE



Biotinylated Recombinant Human IL-18/IL-1F4 Protein SDS-PAGE. 2 µg/lane of Biotinylated Recombinant Human IL-18/IL-1F4 Protein (Catalog # BT9124) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 15-21 kDa.

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BACKGROUND

Interleukin-18 (IL-18) is a proinflammatory cytokine in the IL-1 family that exerts distinct immune effects depending on the local cytokine environment. It is expressed as a 24 kDa precursor by endothelial and epithelial cells, keratinocytes, γδ T cells, and phagocytes. The precursor is activated intracellularly by Caspase-1 mediated proteolysis to release the 17 kDa mature cytokine. The precursor can also be released by necrotic cells for extracellular cleavage by multiple proteases. IL-18 activation is induced by infection or tissue damage and contributes to disease pathology in chronic inflammation (1-3). IL-18 binds to the widely expressed IL-18 Rα which recruits IL-18 Rβ to form the signaling receptor complex (4, 5). Its bioactivity is negatively regulated by interactions with IL-18 binding proteins and virally encoded IL-18BP homologs (6). In the presence of IL-12 or IL-15, IL-18 enhances anti-viral Th1 immune responses by inducing IFN-γ production and the cytolytic activity of CD8+ T cells and NK cells (7, 8). In the absence of IL-12 or IL-15, however, IL-18 promotes production of the Th2 cytokines IL-4 and IL-13 by CD4+ T cells and basophils (9, 10). In the presence of IL-1β or IL-23, IL-18 induces the antigen-independent production of IL-17 by γδ T cells and CD4+ T cells (11). IL-18 also promotes myeloid dendritic cell maturation and triggers neutrophil respiratory burst (12, 13). In cancer, IL-18 exhibits diverse activities including enhancing anti-tumor immunity, inhibiting or promoting angiogenesis, and promoting tumor cell metastasis (14). Mature human IL-18 shares approximately 63% amino acid sequence identity with mouse and rat IL-18 (15). Alternative splicing in human ovarian cancer generates an isoform that is resistant to Caspase-1 activation (16). A cell surface form can be expressed on M-CSF induced macrophages and released in response to bacterial endotoxin (17).

References:

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