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Recombinant Mouse IL-18 Protein

Catalog Number:	670201, 670202
Size:	20 μg, 100 μg
Target Name:	IL-18, IL18, IL1F4, Interferon-gamma-inducing factor, IGIF, IL-1g
Regulatory Status:	RUO

PRODUCT DETAILS

Application:	Bioassay
Format:	Lyophilized from sterile PBS, pH 7.4.
Expression Host:	E.coli
Species:	Mouse
accession number:	P70380-1
Sources:	A DNA sequence encoding the mouse IL18 (P70380-1) (Asn36-Ser192) was expressed and purified.
Molecular Weight:	The recombinant mouse IL18 consists of 158 amino acids and predicts a molecular mass of 18.2 KDa. It migrates as an approximately 19 KDa band in SDS-PAGE under reducing conditions.
Affinity Tag:	None
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin level:	< 1.0 EU per μg protein
Protein Concentration:	Lyophilized
Storage and Handling:	Samples are stable for up to twelve months from date of receipt at -20℃ to -80℃. Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.

BACKGROUND INFORMATION

Mouse IL-18 is a pro-inflammatory cytokine belonging to the interleukin-1 (IL-1) family, primarily produced by macrophages, dendritic cells, and epithelial cells. It plays a central role in innate and adaptive immunity by promoting interferon-γ (IFN-γ) production, particularly in natural killer (NK) cells and T lymphocytes. IL-18 is synthesized as an inactive precursor (pro–IL-18) that requires cleavage by caspase-1 within the inflammasome complex to generate the biologically active mature cytokine.

Structurally, mature IL-18 adopts a β-trefoil fold characteristic of IL-1 family cytokines. It exerts its function by binding to a heterodimeric receptor complex composed of IL-18Rα (IL-1R5) and IL-18Rβ (IL-1R7). Upon ligand binding, this receptor complex recruits the adaptor protein MyD88, initiating downstream signaling cascades that activate NF-κB and MAPK pathways, leading to the expression of inflammatory cytokines and immune mediators. IL-18 activity is tightly regulated by IL-18 binding protein (IL-18BP), a soluble decoy that neutralizes excess cytokine.

In disease, dysregulated IL-18 production is associated with inflammatory and autoimmune conditions, including sepsis,

inflammatory bowel disease, and metabolic disorders. Elevated IL-18 levels can drive excessive inflammation and tissue damage, while insufficient activity may impair host defense against infections. In cancer, IL-18 has complex roles, contributing to both anti-tumor immunity and, in some contexts, tumor progression.

Therapeutically, IL-18 is being explored as an immunomodulatory target. Recombinant IL-18 or engineered IL-18 variants are investigated to enhance anti-tumor immunity, whereas IL-18 neutralization strategies, such as IL-18BP or antibodies, are being developed to treat inflammatory diseases.

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