

IL-18, human recombinant protein

Information

Gene ID	3606
Accession #	Q14116
Alternate Names	
Source	<i>Escherichia coli</i> .
M.Wt	Approximately 18.2 kDa, a single non-glycosylated polypeptide chain containing 157 amino acids.
AA Sequence	YFGKLESKLS VIRNLNDQVL FIDQGNRPLF EDMTSDSCRD NAPRTIFIIS MYKDSQPRGM AVTISVKCEK ISTLSCENKI ISFKEMNPPD NIKDTKSDII FFQRSVPGHD NKMQFESSY EGYFLACEKE RDLFKLILKK EDELGDRSIM FTVQNE
Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
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.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS, pH 7.0.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.
Biological Activity	Test in processing.
Shipping Condition	Gel pack.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Components and Storage

Components	10 µg	100 µg	500 µg
IL-18, human recombinant protein	10 µg	100 µg	500 µg

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Quality Control

Purity	> 95 % by SDS-PAGE analyses.
Endotoxin	Less than 0.1 EU/μg of rHuIL-18 as determined by LAL method.

Description

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, gamma δ 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. IL-18 binds to the widely expressed IL-18 R alpha which recruits IL-18 R beta to form the signaling receptor complex. Its bioactivity is negatively regulated by interactions with IL-18 binding proteins and virally encoded IL-18BP homologs. In the presence of IL-12 or IL-15, IL-18 enhances anti-viral Th1 immune responses by inducing IFN-gamma production and the cytolytic activity of CD8+ T cells and NK cells. 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. In the presence of IL-1 beta or IL-23, IL-18 induces the antigen-independent production of IL-17 by gamma δ T cells and CD4+ T cells. IL-18 also promotes myeloid dendritic cell maturation and triggers neutrophil respiratory burst. In cancer, IL-18 exhibits diverse activities including enhancing anti-tumor immunity, inhibiting or promoting angiogenesis, and promoting tumor cell metastasis. Mature human IL-18 shares approximately 63% amino acid sequence identity with mouse and rat IL-18. Alternative splicing in human ovarian cancer generates an isoform that is resistant to Caspase-1 activation. A cell surface form can be expressed on M-CSF induced macrophages and released in response to bacterial endotoxin.



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