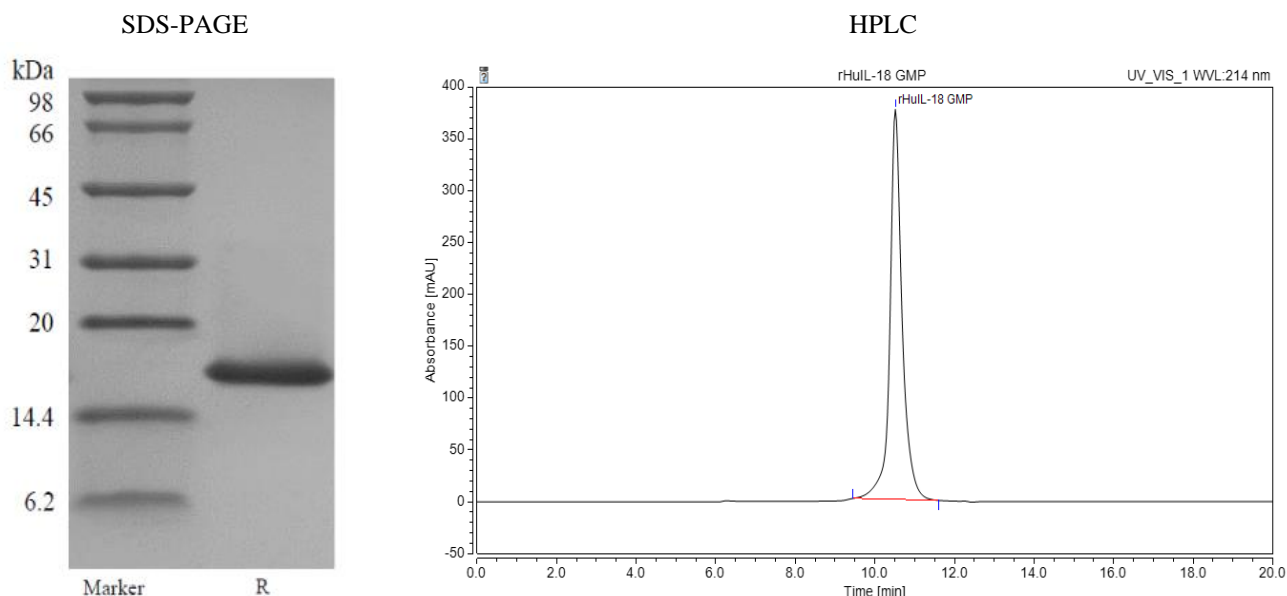


Catalog Number:	GMP-101-18
Source:	<i>Escherichia coli</i>
Molecular Weight:	Approximately 18.2 kDa, a single non-glycosylated polypeptide chain containing 157 amino acids.
Size:	5 µg/100 µg/1 mg
Sequence:	YFGKLESKLS VIRNLNDQVL FIDQGNRPLF EDMTSDSCRD NAPRTIFIIS MYKDSQPRGM AVTISVKCEK ISTLSCENKI ISFKEMNPPD NIKDTKSDII FFQRSVPGHD NKMQFESSY EGYFLACEKE RDLFKLILKK EDELGDRSIM FTVQNE
Purity:	> 95% by SDS-PAGE analyses. > 98% by HPLC analyses.
Biological Activity:	Measured by its ability to induce IFN-gamma secretion by KG-1 human acute myelogenous leukemia cells. The ED ₅₀ for this effect is 1.5-15 ng/mL. The specific activity of recombinant human IL-18 is > 3.0 × 10 ⁶ Units/mg, which is calibrated against rHuIL-18 WHO reference reagent (NIBSC code: 03/200).
Physical Appearance:	Sterile filtered white lyophilized (freeze-dried) powder.
Formulation:	Lyophilized from a 0.2 µm filtered solution in PBS, 0.05% Tween-20, pH 7.0.
Endotoxin:	Less than 0.01 EU/µg of rHuIL-18 GMP as determined by LAL method.
Sterility:	Negative.
Mycoplasma:	Negative.
Host Cell Protein:	Less than 0.05% when tested by ELISA.
Host Cell DNA:	Less than 20 ng/mg when tested by qPCR.
In Vitro Virus Assay:	Negative.
Reconstitution:	Prior to opening, it is recommended to centrifuge the vial briefly to bring the contents down the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-0.3 mg/mL. If animal-origin-free condition is expected in your product, then sterile distilled water is recommended. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.
Shipping:	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage:	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none">● A minimum of 12 months from date of receipt, when stored at ≤ -20 °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.● Refer to lot-specific CoA for the Expiry Date.
Usage:	This material is offered by Shanghai PrimeGene Bio-Tech for research, laboratory, or further evaluation purposes. NOT FOR HUMAN USE.
Quality Statement:	The manufacturing and testing of these products comply with ICH Q7 guidelines.



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, 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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