

## Recombinant Human IL-18 Protein

Catalog Number: GMP-TL902

### Product Name

Generic Name	Recombinant Human IL-18 Protein
Synonym	Interleukin-18, Interleukin-1 gamma, IL1F4

### Product Information

Protein sequence	A DNA sequence encoding the human IL-18 (NP_001553.1) was expressed with no tag.
Expression Host	E. coli
QC Testing Purity	> 90 % as determined by SDS-PAGE
Activity	Measured by its ability to induce IFN- $\gamma$ secretion by KG-1 cells in the presence of TNF- $\alpha$ . The ED <sub>50</sub> for this effect is 5-30 ng/mL.
Endotoxin Level	< 0.1 EU per 1 $\mu$ g of the protein by the LAL method.
Molecular Mass	Predicts a molecular mass of 18.2 kD.
Formulation	Lyophilized from sterile PBS, pH 7.4. Normally 6 % mannitol are added as protectants before lyophilization.
Stability & Storage	24 months at 2 °C to 8 °C in lyophilized state. 6 months at -20 °C under sterile conditions after reconstitution. 12 months at -80 °C under sterile conditions after reconstitution. Recommend to aliquot the protein into smaller quantities after reconstituting with water for injection, normal saline or PBS, and keep the diluted concentration above 100 $\mu$ g/mL. Avoid repeated freeze-thaw cycles.

### Background

IL-18 is a proinflammatory cytokine that plays an important role in NK cell activation and Th1 cell response. It is expressed as a 24 kDa precursor by endothelial and epithelial cells, keratinocytes,  $\gamma\delta$  T cells, and phagocytes. IL-18 is related to the IL-1 family in terms of both structure and function. In terms of structure, IL-18 and IL-1 $\beta$  share significant primary amino acid sequences and are similarly folded as all-beta pleated sheet molecules. Like IL-1 $\beta$ , IL-18 is synthesized as a biologically inactive precursor molecule lacking a signal peptide. In the presence of IL-1 $\beta$  or IL-23, IL-18 induces the antigen-independent production of IL-17 by gamma  $\delta$  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.

### References

1. Çakır M, Tekin S, Taşlıdere A, Çakan P, Düzova H, Gül CC (2011) Protective effect of N-(p-amylicinnamoyl) anthranilic acid, phospholipase A2 enzyme inhibitor, and transient receptor potential melastatin-2 channel blocker against renal ischemia-reperfusion injury. *Cell Biochem. 2018J Cell Biochem*, 120(3):3822-3832.
2. Xu F, Sang W, Li L, He X, Wang F, Wen T, Zeng N. (2019) Protective effects of ethyl acetate extracts of *Rimulus Cinnamon* on systemic inflammation and lung injury in endotoxin-poisoned mice. *Drug Chem Toxicol*, 42(3):309-316.