

Recombinant Human IL-18 Protein

Product Name

Recombinant Human IL-18 Protein

Size/Catalog Number

50µg / GMP-TL902-0050

Product Information

Synonyms: interleukin-18, Iboctadekin, Interleukin-1 gamma, IFN-gamma-inducing factor

Accession: Uniprot Q14116

Amino acid sequence: Tyr37-Asp193

Tag: Tag-Free

Expression system: *E.coli*

Predicted Molecular weight: 18.2 kDa

Purity: > 95% as determined by SDS-PAGE

Endotoxin: < 0.1 EU per 1 µg of protein (LAL method)

Activity: Induces IFN-γ secretion in KG-1 cells with TNF-α co-stimulation, exhibiting a specific activity of $\geq 2.0 \times 10^6$ IU/mg.

Form: Lyophilized from sterile 20mM phosphate-buffered saline (PBS), pH 7.4, normally containing 6–8% (w/v) mannitol as protectant.

Background

IL-18 is a pleiotropic proinflammatory cytokine belonging to the IL-1 superfamily, which requires caspase-1-mediated proteolytic activation to engage the heterodimeric IL-18Rα/β receptor, triggering NF-κB and MAPK signaling pathways that drive IFN-γ production in Th1 cells, NK cells, and macrophages. It synergizes with IL-12 to enhance IgG2a class switching while suppressing IL-4-dependent IgE/IgG1 production. In cell therapy manufacturing, the recombinant IL-18 protein serves as a critical culture component to augment CAR-T/NK cell effector functions and persistence through coordinated action with IL-15/IL-12, while potentiating FasL-mediated cytotoxicity and promoting memory T-cell differentiation, thereby optimizing the functional maturity and therapeutic potency of antitumor immune cell products. Its activity is tightly regulated by IL-18 binding protein (IL-18BP), establishing a dynamic equilibrium that offers targeted therapeutic strategies for inflammatory and allergic disorders.

Stability & Storage

Lyophilized powder: Stable for 12 months at -80°C or 6 months at -20°C when stored in the original sealed container under desiccant.

Reconstitution: Dissolve in sterile Water for Injection, 0.9% NaCl, or PBS (pH 7.4) maintaining final concentration ≥ 100 µg/mL to prevent adsorption.

Handling: Aliquot to avoid repeated freeze-thaw cycles.

References

1. Çakır M, Tekin S, Taşlıdere A, Çakan P, Düzova H, Gül CC. Protective effect of N-(p-amyleinnamoyl) anthranilic acid, phospholipase A2 enzyme inhibitor, and transient receptor potential melastatin-2 channel blocker against renal ischemia-reperfusion injury. J Cell Biochem. 2019 Mar;120(3):3822-3832.

2. Xu F, Sang W, Li L, He X, Wang F, Wen T, Zeng N. Protective effects of ethyl acetate extracts of Rimulus Cinnamon on systemic inflammation and lung injury in endotoxin-poisoned mice. Drug Chem Toxicol. 2019 May;42(3):309-316.

Intended Us

For research and manufacturing purposes only.