Recombinant Human IL-6 Protein

Product Name

Recombinant Human IL-6 Protein

Size / Catalog Number

50μg / GMP-TL512-0050

100μg / GMP-TL512-0100

Product Information

Synonyms: IL6, Interleukin-6, BSF2, HSF, IFNB2

Accession: UniProt P05231

Expressed Region: Val30-Met212

Tag: C-terminal 6×His-tag

Predicted Expression system: HEK293 cells

Molecular weight: 21.6 kDa

Purity: > 95% as determined by SDS-PAGE

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

Activity: Measured in a cell proliferation assay using TF-1 cells, corresponding to a specific activity of ≥ 5×10^7 IU/mg.

Form: Lyophilized from sterile PBS (pH7.4), typically supplemented with 6% mannitol as a protectant.

Background

The recombinant human IL-6- protein is produced in HEK-293 cells via transient transfection, featuring a C-terminal polyhistidine (His) tag for nickel-affinity purification. As a pleiotropic α-helical cytokine, IL-6 activates JAK-STAT and MAPK signaling pathways by binding to the IL-6Rα/gp130 heterodimeric receptor, regulating immune responses, hematopoiesis, and cellular differentiation. In cell and gene therapy applications, it critically enables: *ex vivo* expansion of hematopoietic stem cells (HSCs) and T cells, enhancement of effector functions in NK and CAR-T cells, directed differentiation of induced pluripotent stem cells (iPSCs) toward hematopoietic lineages, and synergistic construction of vascularized tissue-engineered microenvironments. The native bioactive conformation is preserved, while the His-tag design ensures precise purification without Fc-mediated off-target effects, making it particularly suitable for regenerative medicine and cell therapy systems requiring spatiotemporal control of cytokine concentrations.

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 (pH7.4), maintaining a final concentration ≥ 100 μg/mL to prevent adsorption.

Handling: Aliquot to avoid repeated freeze-thaw cycles.

References

1. Ferguson-Smith AC, Chen YF, Newman MS, *et al*. Regional localization of the interferon-beta 2/B-cell stimulatory factor 2/hepatocyte stimulating factor gene to human chromosome 7p15-p21. Genomics. 1988 Apr;2(3):203-8.

2. van der Poll T, Keogh CV, Guirao X, *et al*. Interleukin-6 gene-deficient mice show impaired defense against pneumococcal pneumonia. J Infect Dis. 1997 Aug;176(2):439-44. doi: 10.1086/514062. PMID: 9237710.

3. Banks WA, Kastin AJ, Gutierrez EG. Penetration of interleukin-6 across the murine blood-brain barrier. Neurosci Lett. 1994 Sep 26;179(1-2):53-6.

Intended Us

For research and manufacturing purposes only.