# Recombinant Human IL-2 Protein (high-efficiency)

## Product Name

Recombinant Human IL-2 Protein (high-efficiency)

## Size/Catalog Number

100μg / GMP-TL906-0100

## Product Information

**Synonyms:** Interleukin 2, lymphokine, T-cell growth factor (TCGF)
**Accession:** Uniprot P60568
**Expressed Region:** Ala21-Thr153
**Tag:** Tag-free
**Expression system:** *E.coli*
**Predicted Molecular Weight:** 15.4 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 CTLL-2 cells, corresponding to a specific activity of ≥ $1.0\times10^7$ IU/mg.
**Form**： Lyophilized from sterile 20mM phosphate-buffered saline (PBS), pH 7.4, normally containing 6–8% (w/v) mannitol as protectant

## Background

The recombinant human IL-2 protein is a high-purity tag-free immunomodulator produced in E. coli expression systems, meticulously refolded to preserve native conformational integrity. As a pivotal member of the IL-2 cytokine family, it engages the heterotrimeric IL-2Rαβγ receptor to activate JAK1/JAK3-STAT5 signaling, driving clonal expansion of antigen-primed CD4+/CD8+ T cells through Bcl-2-mediated survival and Cyclin D3-dependent cell cycle progression. In NK cell culture systems, it selectively activates CD56dim effector differentiation via IL-2Rβγ engagement at high concentrations, potentiating antibody-dependent cellular cytotoxicity (ADCC) and IFN-γ production. This molecule serves as an essential component in adoptive cell therapy manufacturing, enabling large-scale expansion of CAR-T/TIL products through pulsatile dosing strategies that maintain IL-2Rα expression dynamics, while its tag-free architecture eliminates Fc receptor-mediated off-target effects, ensuring GMP-compliant production of therapeutic immune cells.

## 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. Wang Y, Dai H, Li H, Lv H, Wang T, Fu X, Han W. Growth of human colorectal cancer SW1116 cells is inhibited by cytokine-induced killer cells. Clin Dev Immunol. 2011;2011:621414.

2. Sangiolo D, Mesiano G, Carnevale-Schianca F, Piacibello W, Aglietta M, Cignetti A. Cytokine

induced killer cells as adoptive immunotherapy strategy to augment graft versus tumor after hematopoietic cell transplantation. Expert Opin Biol Ther. 2009 Jul;9(7):831-40.

## Intended Us

For research and manufacturing purposes only.