

## Recombinant Human IL-15 Protein

### Product Name

Recombinant Human IL-15 Protein

### Size/Catalog Number

50µg / GMP-TL202-0050

100µg / GMP-TL202-0100

### Product Information

**Synonyms:** Interleukin-15

**Accession:** Uniprot P40933 & Q13261

**Expressed Region:** P40933 (Asn23-Ser136(Asn72Asp)) & Q13261 (Ile31-Arg95)

**Fusion Tag:** Human IgG1 Fc fragment fused to C-terminus

**Expression system:** HEK293 cells

**Predicted Molecular weight:** 53.5 kDa

**Purity:** > 95% as determined by SDS-PAGE and HPLC

**Endotoxin:** < 0.01 EU per 1 µg of protein (LAL method)

**Activity:** Measured in a cell proliferation assay using CTLL-2 cells, the ED50 is 0.2~3 ng/mL, corresponding to a specific activity of >5.0×10<sup>6</sup> 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-15 fusion protein is a genetically engineered chimeric immunomodulatory molecule constructed by tandem fusion of the IL-15 cytokine core, sushi domain of IL-15 receptor  $\alpha$  (IL-15R $\alpha$ ), and human IgG Fc fragment through flexible linkers. This molecular design mimics the natural trans-presentation mechanism of IL-15, where the sushi domain mediates high-affinity binding to IL-15R $\alpha$  to form stable superagonist complexes, while the Fc fragment enhances molecular stability, prolongs serum half-life, and achieves extended pharmacokinetic properties through FcRn-mediated recycling. In the field of cell therapy, this fusion protein significantly enhances the expansion efficiency and viability of immune cells during in vitro culture processes, particularly in preparing highly active NK cell and tumor-specific T cell therapeutic products. By persistently activating the IL-2/IL-15 receptor  $\beta\gamma$  complex (CD122/ $\gamma\text{c}$ ), it effectively promotes the proliferation and functional maintenance of CD8<sup>+</sup> memory T cells, NK cells, and NKT cells, while preserving the metabolic fitness and anti-tumor phenotype of effector cells. This innovative structural design overcomes the limitations of natural IL-15 such as short half-life and low bioavailability, providing an optimized molecular tool for cancer immunotherapy and the development of cell therapy products.

### 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  $\geq 100$  µg/mL to prevent adsorption.

**Handling:** Aliquot to avoid repeated freeze-thaw cycles.

### References

1. Zhu X, Marcus WD, Xu W, Lee HI, Han K, Egan JO, Yovandich JL, Rhode PR, Wong HC. Novel human interleukin-15 agonists. *J Immunol.* 2009 Sep 15;183(6):3598-607.
2. Chirifu M, Hayashi C, Nakamura T, Toma S, Shuto T, Kai H, Yamagata Y, Davis SJ, Ikemizu S. Crystal structure of the IL-15-IL-15Ralpha complex, a cytokine-receptor unit presented in trans. *Nat Immunol.* 2007 Sep;8(9):1001-7.

**Intended Us**

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