

Technical Data Sheet

Recombinant human IL-2 protein



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Lot Specific Information

Lot Number: Lot Specific*

Total Protein: Lot Specific*

*This information will be noted on the certificate of analysis that ships with this product.

Shelf Life

This product has a guaranteed shelf-life of one year from the date of customer receipt when stored as recommended.

Product Website Link: <https://bioxcell.com/recombinant-human-il-2-protein-rp025>

Product Information

Catalog Number:	RP025
Protein Identity:	Confirmed identity with expected mass, determined by mass spectrometry
Formulation:	Lyophilized, white powder
Endotoxin:	≤0.5 EU/mg, LAL assay
Purity:	≥95%; SDS-PAGE
Reconstitution:	Resuspend in sterile-filtered water at >50 µg/ml. Once reconstituted, store in single-use aliquots to avoid freeze-thaw cycles. Store reconstituted protein at -20 °C to -80 °C for a maximum of 12 months or until the expiry date if sooner.
Sterility:	Sterile
Production:	Microbial. Expressed in E. coli
Molecular Weight:	15.5 kDa (monomer)
Bioactivity Assay:	No significant difference between EC50 of reference and test lots
Mycoplasma:	Negative

Description

Interleukin-2 (IL-2/IL2) is a cytokine that plays a vital role in the immune system, particularly in T-cell development, growth, and activity. IL-2 is produced mainly by activated CD4+ T-cells in response to antigenic stimulation and is essential for both immune response amplification and immune regulation. IL-2 is a single-chain glycoprotein composed of 133 amino acids with a molecular weight of 15.5 kDa. The IL-2 receptor (IL-2R) is a complex made up of three subunits: IL-2Rα (CD25), IL-2Rβ (CD122), and the common gamma chain (γc, CD132). When IL-2 binds to its receptor, it activates downstream signaling pathways like JAK-STAT and PI3K-AKT, promoting cell survival, proliferation, and differentiation. IL-2 is critical for the expansion of effector T-cells, which are responsible for attacking and eliminating pathogens and cancer cells. It also plays a role in the development and maintenance of regulatory T-cells (Tregs), which prevent autoimmune responses by keeping the immune system in check. IL-2 enhances the activity of natural killer (NK) cells and B-cells, contributing to overall immune defense. IL-2 is used in cancer immunotherapy, particularly for treating metastatic melanoma and renal cell carcinoma, where it boosts the immune system's ability to attack tumors. Low-dose IL-2 is being investigated for autoimmune diseases such as lupus and type 1 diabetes, where it can promote Treg expansion to restore immune balance. IL-2 has also been explored as a treatment for chronic infections like HIV and hepatitis C by enhancing immune cell recovery and function. Its role as an adjuvant in vaccines and its potential in organ transplantation to promote immune tolerance are also being actively studied. This protein is optimized for in vivo and functional applications: low-endotoxin, tag-free, and carrier-free, supporting reproducible performance in demanding preclinical and bioactivity studies.

Storage

Store at the stock concentration at 4°C. **Do not freeze.**

It is not uncommon for a floccule or precipitate to appear during storage. The floccule is typically buffer salts precipitating out of solution or a small bit of protein aggregation. For information on how to remove floccules or precipitates see our FAQ's at <https://bioxcell.com/faqs>.

Store lyophilized protein between -20 °C and -80 °C until the date of expiry. Avoid freeze-thaw cycles

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Conditions: For research use only. Not for use in diagnostic or therapeutic procedures.

Not for resale.

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