ANEWBiosystems®

Product Datasheet

Rev. 25/1/2026

Recombinant Human Interleukin-2 (IL-2), Animal Component-Free

Cat. No. :	H005C
Alternative Names:	IL2; Interleukin-2; IL-2; Interleukin 2; T-cell growth factor; TCGF; Aldesleukin
Species:	Human
Accession No.:	P60568
Expression System:	CHO
Protein Sequence:	Ala21-Thr153
Theoretical MW:	15.42 kDa
Theoretical pI:	7.05
Tag:	Tag-Free.
Formulation buffer:	PBS, 5% Mannitol and 0.01% Tween 80, pH7.4.
Appearance:	Lyophilized Powder.
Purity:	≥95% as determined by SDS-PAGE.
Bioactivity:	It has a specific activity of ≥1 × 10^7 IU/mg, as determined by a cell proliferation assay using CTLL-2 murine cytotoxic T cells.
Endotoxin Level:	≤0.01 EU/μg, as determined by the LAL assay.
Application:	Cell Culture; Activity Assays.

Preparation & Storage

Reconstitution: Reconstitute with sterile double-distilled water (ddH_2O).

⚠ Centrifuge the vial briefly before opening to ensure full recovery of the solution. Avoid vortexing and minimize vigorous pipetting to maintain protein stability.

❄ Immediately aliquot the reconstituted protein solution and store under recommended conditions. Avoid repeated freeze-thaw cycles.

Shipping: Shipped on dry ice. Short-term transit on cold packs (2-8℃) is acceptable.

Storage: **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -80℃ as supplied.
- 2-7 days at 2 to 8℃ under sterile conditions after reconstitution.
- 3-6 months at -20 to -80℃ under sterile conditions after reconstitution.

Protein Description

Background: Interleukin-2 (IL-2) is a 15.5 kDa cytokine primarily secreted by activated $CD4^+$ T cells and essential for T-cell proliferation, differentiation, and immune regulation. It signals through a receptor complex composed of IL-2Rα (CD25), IL-2Rβ (CD122), and the common γ-chain (γc, CD132). High-affinity binding (requiring all three subunits) is constitutively expressed on regulatory T cells (Tregs), making them highly sensitive to low IL-2 levels for survival and suppressive function. In contrast, effector T cells and NK cells express only the intermediate-affinity βγ dimer and require high-dose IL-2 for activation and cytotoxicity.

Thus, IL-2 uniquely bridges immune activation and tolerance. Clinically, recombinant IL-2 (aldesleukin) is approved for metastatic melanoma and renal cell carcinoma but limited by toxicity and Treg-mediated immunosuppression. Next-generation "biased" IL-2 variants engineered to selectively engage CD122/γc–sparing CD25–are in development to enhance anti-tumor immunity while minimizing Treg expansion.

References:

1. Smith, K. A. (1988). Interleukin-2: inception, impact, and implications. Science, 240(4856), 1169-1176.
2. Malek, T. R., & Castro, I. (2010). Interleukin-2 receptor signaling: at the interface between tolerance and immunity. Immunity, 33(2), 153-165.
3. Boyman, O., & Sprent, J. (2012). The role of interleukin-2 in autoimmunity and cancer. Nature Reviews Immunology, 12(3), 180-190.
4. Charych, D. H., et al. (2016). NKTR-214, an engineered cytokine with biased IL-2 receptor binding. Clinical Cancer Research, 22(3), 680-690.
5. Waldmann, T. A. (2006). The biology of interleukin-2 and interleukin-15. Nature Reviews Immunology, 6(8), 595-601.

Product Disclaimer

- This product is intended for research use only and is not for use in diagnostic, therapeutic, or clinical procedures.
- Due to the inherent nature of research reagents, any liability arising from product quality issues is limited solely to the replacement or refund of the product itself and excludes all indirect, incidental, or consequential damages.

获取前沿资讯、最新产品及活动

ANEWBiosystems 只为基于科学研究的用途提供服务，不为任何个人或者非科研性质的使用等其他用途提供服务

Tel: 86 + 132-0209-8186; 86 + 186-2016-1769　E-mail: info@anewbiosystems.com

A Foundation Built for Discovery. ––– 探索之路，基石为筑

购买产品将视为接受 ANEWBiosystems 的销售条款及条件