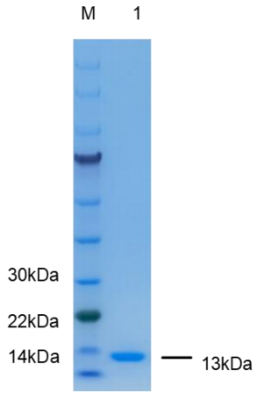
# Human Interleukin 2 (IL2) Protein, Recombinant

## 1. For Sale

| Product Name | Catalog # | Size |
|---|---|---|
| Human Interleukin 2 (IL2) Protein, Recombinant | P01I0308P | 10ug |
| | | 50ug |
| | | 500ug |
| | | 1mg |

## 2. Product Description

| | |
|---|---|
| Other Names | IL-2; TCGF; lymphokine |
| Protein & NCBI Number | P60568, NM_000586.4 |
| Host | E.coli |
| Express Region | Ala21-Thr153 |
| Protein Sequence | APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTFKFYMPKKATELKH LQCLEEELKPLEEVLNLAQSKNFHLRPRDLISNINVIVLELKGSETTFMCEYADET ATIVEFLNRWITFCQSIISTLT |
| Molecular Weight | The protein consists of 133 amino acids, with a predicted molecular weight of 15.4kDa, and the actual molecular weight is 13kDa. |
| Fusion Tag | None |
| Purity | ≥90% SDS-PAGE |
| Physical Property | Liquid |
| Components | 0.01M PBS+20% glycerol, sterile solution |
| Storage & Stability | After aliquoting, the stability of the samples can be maintained for up to 6 months at -20°C to -80°C, avoiding repeated freeze-thaw cycles. |
| Applications | Antibody preparation, immunoassay (ELISA, WB), subcellular localization and interaction protein identification, etc. |
| Lead Time | 5 to 10 business days;<br>2 to 3 days for stock products |
| Figure.<br>SDS-PAGE |  <br>Bis-Tris (MOPS) SDS-PAGE |

## 3. Storage and Transportation

Transport at 2-8℃, product is stable for up to twelve months from date of receipt under sterile conditions at -20℃ to -80℃.

## 4. Notes

This product is for research use only. Please wear laboratory attire and disposable gloves when handling.

## 5. Background

Interleukin-2 (IL-2) exerts both immunosuppressive and immunostimulatory effects on cytotoxic effector cells by activating regulatory T cells (Tregs). These IL-2-mediated effects depend on distinct expression patterns of IL-2 receptors (IL-2R): CD8+T cells and natural killer (NK) cells express high levels of the dimeric IL-2Rβ(CD122) and IL-2Rγ(γc) chains, while Treg cells express high levels of IL-2Rα(CD25) along with intermediate levels of CD122 and γc.

IL-2 was the first cytokine to be molecularly cloned and is an essential T cell growth factor, required for T cell proliferation, effector cell generation, and memory cell development. IL-2 supports the development, survival, and functional activity of Treg cells, thereby exerting dual and opposing roles: maintain Treg cells to suppress immune responses while activating conventional T cells to promote immune responses..

Studies have demonstrated that certain IL-2 conformations preferentially target Treg cells by increasing dependency on CD25 binding while reducing interaction with CD122. Recent therapeutic strategies have emerged that utilize IL-2, IL-2 monoclonal antibodies, or IL-2 variants to enhance the number and function of Treg cell for the treatment of autoimmune diseases, while simultaneously addressing the ongoing challenge of minimizing the activation of effector T cells, memory T cells, NK cells, and other innate lymphoid cell populations.

## 6. References


1) T. Taniguchi, H. Matsui, T. Fujita, C. Takaoka, N. Kashima, R. Yoshimoto, J. Hamuro, Structure and expression of a cloned cDNA for human interleukin-2. Nature 302, 305–310 (1983).
2) B. Sadlack, H. Merz, H. Schorle, A. Schimpl, A. C. Feller, I. Horak, Ulcerative colitis-like disease in mice with a disrupted interleukin-2 gene. Cell 75, 253–261 (1993).
3) Morgan D.A.et al.Selective in vitro growth of T lymphocytes from normal human bone marrows.Science. 1976; 193: 1007-1008.
4) Robb R.J.Smith K.A.Heterogeneity of human T-cell growth factor(s) due to variable glycosylation.Mol. Immunol. 1981; 18: 1087-1094
5) Taniguchi T.et al.Structure and expression of a cloned cDNA for human interleukin-2.Nature. 1983; 302: 305-310
6) K. A. Smith, M. F. Favata, S. Oroszlan, Production and characterization of monoclonal antibodies to human interleukin 2: Strategy and tactics. J. Immunol. 131, 1808–1815 (1983).