# Human Interleukin-2 / IL-2 Protein

**Catalog Number:** GMP-11848-HNAE

Sino Biological
Biological Solution Specialist

## General Information

**Gene Name Synonym:**

IL-2; Interleukin-2; lymphokine; TCGF

**Protein Construction:**

A DNA sequence encoding the mature form of human IL2 (P60568-1) (Ala 21-Thr 153) was expressed and purified with an initial Met.

**Source:** Human

**Expression Host:** E. coli

## QC Testing

**Purity:** ≥ 95 % as determined by SDS-PAGE. ≥ 95 % as determined by SEC-HPLC.

**Bio Activity:**

1. Measured in a cell proliferation assay using CTLL2. The ED50 for this effect is typically 1-8 ng/mL. The specific activity of recombinant human IL-2 is approximately 20,000 IU/μg.
2. Using the Octet RED System, the affinity constant (Kd) of IL2 Protein, Human, Recombinant (Cat. GMP-11848-HNAE) bound Anti-IL2 Antibody (Cat. 11848-MM03) was 0.1 nM.

**Endotoxin:**

< 5 EU per mg of the protein.

**Predicted N terminal:** Met

**Molecular Mass:**

The recombinant human IL-2 consists of 134 amino acids and predicts a molecular mass of 15.5 kDa.

**Formulation:**

Supplied as sterile 20mM HAc-NaAc+0.004% Tween-80 pH 4.0

## Usage Guide

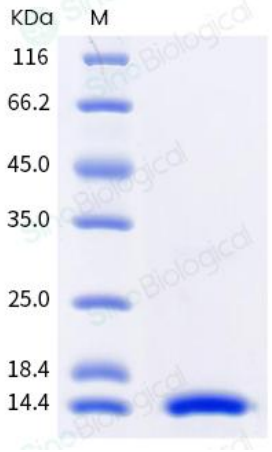
Samples are stable for up to thirty-six months from date of receipt at -20℃ to -80℃.Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.

**Avoid repeated freeze-thaw cycles.**

**Reconstitution:**

Detailed reconstitution instructions are sent along with the products.

**SDS-PAGE:**




## Protein Description

Interleukin-2, also known as a T-cell growth factor, TCGF, Aldesleukin, and IL2, is a secreted protein that belongs to the IL-2 family. Interleukin-2 / IL-2 was the first interleukin molecule to be discovered. Interleukin-2 / IL-2 molecule was first purified to homogeneity by immunoaffinity chromatography by Kendall Smith and his team at Dartmouth Medical School. Interleukin-2 / IL-2 was also the first cytokine shown to mediate its effects via a specific IL-2 receptor, and it was also the first interleukin to be cloned and expressed from a complementary DNA (cDNA) library. Interleukin-2 / IL-2 was designated number 2 because Smith's data at the time indicated that IL-1, produced by macrophages, facilitates IL-2 production by T lymphocytes (T cells). Interleukin-2 / IL-2 is produced by T-cells in response to antigenic or mitogenic stimulation, this protein is required for T-cell proliferation and other activities crucial to regulation of the immune response. Interleukin-2 / IL-2 is normally produced by the body during an immune response. When environmental substances (molecules or microbes) gain access to the body, these substances (termed antigens) are recognized as foreign by antigen receptors that are expressed on the surface of lymphocytes. Antigen binding to the T cell receptor (TCR) stimulates the secretion of Interleukin-2 / IL-2 and the expression of IL-2 receptors IL-2R. The IL-2 / IL-2R interaction then stimulates the growth, differentiation, and survival of antigen-selected cytotoxic T cells via the activation of the expression of specific genes. Interleukin-2 / IL-2 can stimulate B-cells, monocytes, lymphokine-activated killer cells, natural killer cells, and glioma cells. The World Reference Standard for Interleukin-2 / IL-2 is produced by the National Institute of Biological Standards and Control in the UK. A recombinant form of Interleukin-2 / IL-2 for clinical use is manufactured by Chiron Corporation with the brand name Proleukin. It has been approved by the Food and Drug Administration (FDA) for the treatment of cancers (malignant melanoma, renal cell cancer), and is in clinical trials for the treatment of chronic viral infections, and as a booster (adjuvant) for vaccines. The use of Interleukin-2 / IL-2 in HIV therapy is ineffective.

**References**

1.Smith KA, et al.,1980, J. Exp. Med.151 (6): 1551-6. 2.Smith KA, et al.,1980, Nature. 287 (5785): 853-5. 3.Taniguchi T, et al.,1983, Nature. 302 (5906): 305.

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