

IL-2 Protein, Human (Biotinylated, HEK293, Fc-Avi)

Cat. No.:	HY-P78858
Synonyms:	IL2; TCGF; lymphokine; Interleukin 2
Species:	Human
Source:	HEK293
Accession:	P60568 (A21-T153)
Gene ID:	3558
Molecular Weight:	45-50 kDa

PROPERTIES

Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized Human IL2RA at 5 µg/mL can bind Biotinylated Human IL2, the EC ₅₀ is 32.94-82.61 ng/mL.
Appearance	Lyophilized powder
Formulation	Lyophilized a 0.22 µm filtered solution of PBS, 6% Trehalose, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

The cytokine interleukin-2 (IL-2), produced primarily by activated CD4-positive helper T-cells and, to a lesser extent, by activated CD8-positive T-cells and natural killer (NK) cells, plays pivotal roles in the immune response and tolerance. IL-2 binds to a receptor complex composed of either the high-affinity trimeric IL-2R (IL2RA/CD25, IL2RB/CD122, and IL2RG/CD132) or the low-affinity dimeric IL-2R (IL2RB and IL2RG). This interaction induces oligomerization and conformational changes in the IL-2R subunits, initiating downstream signaling with the phosphorylation of JAK1 and JAK3. Subsequently, JAK1 and JAK3 phosphorylate the receptor, creating a docking site for the phosphorylation of various substrates, including STAT5. This process activates multiple pathways, including STAT, phosphoinositide-3-kinase/PI3K, and mitogen-activated protein kinase/MAPK pathways. IL-2 functions as a T-cell growth factor, enhances NK-cell cytolytic activity, and promotes robust proliferation of activated B-cells, leading to increased immunoglobulin production. Furthermore, IL-2 plays a crucial role in regulating the adaptive immune system by controlling the survival and proliferation of regulatory T-cells, essential for maintaining immune tolerance. Additionally, IL-2 participates in the differentiation and homeostasis of various effector T-cell subsets, including Th1, Th2, Th17, as well as memory CD8-positive T-cells.

Caution: Product has not been fully validated for medical applications. For research use only.

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