Product Description

Interleukin 2 (IL-2) is a monomeric cytokine that was originally identified as a T cell growth factor (Gaffen & Liu). It binds to heterotrimeric receptors consisting of CD25, CD122, and CD132. Upon binding, it activates JAK3-, STAT5-, and AKT-dependent signaling pathways, which results in cellular proliferation and survival (Ma et al.). The majority of IL-2 is secreted by activated CD4+ and CD8+ T cells, although B cells and dendritic cells were found to produce IL-2 in small amounts. IL-2 downregulates immune responses to prevent autoimmunity during thymic development, influences the development of CD4+CD25+ regulatory T cells, and affects development of follicular helper T cells. IL-2 also controls inflammation by inhibiting Th17 differentiation (Banchereau et al.). High IL-2 levels in serum are associated with progression of scleroderma, rheumatoid arthritis, and gastric and non-small cell lung cancer, though no known disease can be directly attributed to the lack or excess of IL-2 (Gaffen & Liu). Human Recombinant IL-2 has a serine substitute for cysteine at position 126.

Product Information

Alternative Names: Aldesleukin, Interleukin-2, T cell growth factor, TCGF
Accession Number: P60568
Amino Acid Sequence: P60568
APTSSSTKKT QLQLHELALLL LQMILNGINN YKNPKLTRML TFKFYMPPKA TELKHALQCLE EELKPLEEVL NLAQSKNFHL RPRDLISNIN VI\VLEKGSE TTFMCEYADE TATIVEFLNR WITFCQSIIS TLTLT
Predicted Molecular Mass: 15.3 kDa
Species: Human
Cross Reactivity: Mouse, Rat, Monkey
Formulation: Lyophilized after dialysis against phosphate-buffered saline.
Source: CHO

Specifications

Activity: The EC50 is ≤ 2 ng/mL as determined by a cell proliferation assay using CTLL-2 cells. The specific activity is approximately $4.1 \times 10^4$ IU/µg as calibrated against the human recombinant IL-2 WHO International Standard (NIBSC code: 86/500).
Purity: ≥ 95%
Endotoxin Level: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Storage: Store at -80°C.
Stability: Stable as supplied for 12 months from date of receipt.
Preparation: Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. As a general guide, do not store at 2 - 8°C for more than 1 week or at -20°C to -80°C for more than 2 months. Avoid repeated freeze-thaw cycles.
A) The biological activity of Human Recombinant IL-2 (CHO-expressed) was tested by its ability to promote the proliferation of CTLL-2 cells. Cell proliferation was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is 1.2 ng/mL.

B) 2 μg of Human Recombinant IL-2 (CHO-expressed) was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IL-2 (CHO-expressed) has a predicted molecular mass of 15.3 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References


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