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. This product is animal component-free.

Product Information

Alternative Names: Aldesleukin, Interleukin-2, T cell growth factor, TCGF
Accession Number: P60568
Amino Acid Sequence:

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MAPTSSSTKK TQLQLEHLLL DLQMILNGIN NYKNPKLTRM LTFKFYMPKK ATELKPLEEV LNLAQSKLNH LRPRDLISNI NVIVLELKGS ETTMFCEYAD ETATIVEFLN RWITFCQSIILSTLT
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Predicted Molecular Mass: 15.5 kDa
Species: Human
Cross Reactivity: Mouse, Rat, Monkey
Formulation: Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid
Source: E. coli

Specifications

Activity: The specific activity is \( \geq 3.3 \times 10^{5} \) units/mg (EC50 \( \leq 3 \) ng/mL) as determined by a cell proliferation assay using CTLL-2 cells.
Purity: \( \geq 95\% \)
Endotoxin Level: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is \( \leq 1 \) EU/\( \mu \)g protein.

Preparation and Storage

Storage: Store at -20°C to -80°C.
Stability: Stable as supplied for 12 months from date of receipt.
Preparation: Centrifuge vial before opening. Reconstitute the product in 10 mM hydrochloric acid to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.
(A) The biological activity of Human Recombinant IL-2, ACF was tested by its ability to promote the proliferation of CTLL-2 cells. Cell proliferation was measured after 72 hours of culture using a fluorometric assay method. The EC50 is defined as the effective concentration of the cytokine at which cell proliferation is at 50% of maximum. The EC50 in the example above is 1.99 ng/mL.

(B) 1 μg of Human Recombinant IL-2, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IL-2, ACF has a predicted molecular mass of 15.5 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