### 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:
MAPTSSSTKK TQLQLEHLLL DLQMLNQLG IN YKNPKLTRM LTFKLYMPKK ATELKPLEEV LNLAKSNFHL RLRPLDISNI NVIVLELKG ETTFMCEYAD ETATIVEFLN RWITFCQSSILSTL

#### 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 EC50 is ≤ 3 ng/mL as determined by a cell proliferation assay using CTLL-2 cells. The specific activity is approximately 1.8 x 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 ≤ 1 EU/µg 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 -20°C to -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

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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 growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is 1.99 ng/mL.

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

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References