

DESCRIPTION

Source *E. coli*-derived
Asp26-His177, with an N-terminal Met
Accession # P13232
Produced using non-animal reagents in an animal-free laboratory.

N-terminal Sequence Analysis Met

Predicted Molecular Mass 17 kDa

SPECIFICATIONS

Activity Measured in a cell proliferation assay using PHA-activated human peripheral blood lymphocytes (PBL). Yokota, T. *et al.* (1986) Proc. Natl. Acad. Sci. USA **83**:5894.
The ED₅₀ for this effect is typically 0.2-0.5 ng/mL.

Endotoxin Level <1.0 EU per 1 µg of the protein by the LAL method.

Purity >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 0.2 mg/mL in sterile PBS.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

IL-7, previously known as pre-B-cell growth factor and lymphopoietin-1, was originally purified on the basis of its ability to promote the proliferation of precursor B-cells. It has now been shown that IL-7 can also stimulate the proliferation of thymocytes, T cell progenitors and mature CD4⁺ and CD8⁺ T cells. IL-7 can induce the formation of lymphokine-activated killer (LAK) cells as well as the development of cytotoxic T lymphocytes (CTL). IL-7 was also shown to induce the V(D)J rearrangement of the T cell receptor β gene in mouse fetal thymocytes. Among myeloid lineage cells, IL-7 can up-regulate the production of pro-inflammatory cytokines and stimulate the tumoricidal activity of monocytes/macrophages. IL-7 is expressed by adherent stromal cells from various tissues.

Human IL-7 cDNA encodes a precursor protein of 177 amino residues containing a 25 amino acid residue signal peptide. Mouse IL-7 has approximately 65% amino acid sequence identity with human IL-7 and both proteins exhibit cross-species activity.

IL-7 bioactivities are mediated by the binding of IL-7 to functional high-affinity receptor complexes. The ligand binding subunit (IL-7 R) of the IL-7 receptor complex has been cloned from human and mouse sources. In addition to the membrane-anchored form of the IL-7 receptor, a human cDNA clone that encodes a soluble form of the IL-7 R has also been isolated. The γ chain of the IL-2 receptor complex has been shown to be an essential component for IL-7 signal transduction. Both IL-7 R and IL-2 R_γ are members of the hematopoietin receptor superfamily. Cells known to express IL-7 receptors include pre-B cells, T cells and bone marrow cells.