

Human Interleukin 7 (IL-7)

CATALOG NUMBER: IL-07-010P, 10 µg

Introduction	<p>IL7, previously known as preBcell growth factor and lymphopoietin1, was originally purified on the basis of its ability to promote the proliferation of precursor B cells. It has now been shown that IL7 can also stimulate the proliferation of thymocytes, T cell progenitors and mature CD4+ and CD8+ T cells. IL7 can induce the formation of lymphokine-activated killer (LAK) cells as well as the development of cytotoxic T lymphocytes (CTL). IL7 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, IL7 can upregulate the production of proinflammatory cytokines and stimulate the tumoricidal activity of monocytes/macrophages. IL7 is expressed by adherent stromal cells from various tissues. Human IL7 cDNA encodes a precursor protein of 177 amino residues containing a 25 amino acid residue signal peptide. Mouse IL7 has approximately 65% amino acid sequence identity with human IL7 and both proteins exhibit cross-species activity. IL7 bioactivities are mediated by the binding of IL7 to functional high affinity receptor complexes. The ligand binding subunit (IL7R) of the IL7 receptor complex has been cloned from human and mouse sources. In addition to the membrane-anchored form of the IL7 receptor, a human cDNA clone that encodes a soluble form of the IL7R has also been isolated. The γ chain of the IL2 receptor complex has been shown to be an essential component for IL7 signal transduction. Both IL7R and IL2Rγ are members of the hematopoietin receptor superfamily. Cells known to express IL7 receptors include preB cells, T cells and bone marrow cells.</p>
Description	<p>Recombinant human IL-7 produced in <i>E. coli</i> is a single, non-glycosylated, polypeptide chain containing 154 amino acids, three pairs of disulfide bond and having a predicted molecular mass of approximately 17.5 kDa.</p>
Source	<p><i>E. coli</i>.</p>
Purity	<p>≥ 97% purity (by SDS PAGE and HPLC)</p>
Endotoxin Level	<p>≤ 1 EU/mg, determined by the LAL method</p>
Biological Activity	<p>Measured in a cell proliferation assay using 2E8 cells; the specific activity shall be not less than 2.4×10^8 IU/mg</p>
Formulation	<p>Sterile lyophilized powder, in PBS containing 0.1% HAS, pH 7.4</p> <p>Reconstitute with double distilled water at a concentration of no less than 50 µg/ml with 0.1% human serum albumin (A highly purified plant-derived human serum albumin is strongly suggested to be used, Cat# HAS-1r) or bovine serum albumin as a stock.</p>
Storage	<p>Stable for 6-months from the date of shipment when kept at -20 °C or -70 °C. Upon reconstitution, it can be stored at 4 °C for at least one month or -20 °C for at least three months. Avoid repeated freeze-thaw cycles.</p>
Usage	<p>This product is produced for LABORATORY RESEARCH USE ONLY.</p>

