

DESCRIPTION	
Species Reactivity	Human
Specificity	Detects human IL-7 in direct ELISAs and Western blots. In Western blots, detects recombinant mouse IL-7 but no cross-reactivity with recombinant rat IL-17.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human IL-7 Asp26-His177 Accession # P13232
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	See Below
Neutralization	Measured by its ability to neutralize IL-7-induced proliferation in PHA-activated human peripheral blood mononuclear cells (PBMC). Yokota, T. <i>et al.</i> (1986) Proc. Natl. Acad. Sci. USA 83 :5894. The Neutralization Dose (ND ₅₀) is typically 0.02-0.04 µg/mL in the presence of 2.5 ng/mL Recombinant Human IL-7.	

DATA

Western Blot

Detection of Recombinant Human and Mouse IL-7 by Western Blot. Western blot shows 25 ng of Recombinant Human IL-7 (Catalog # 207-IL), Recombinant Mouse IL-7 (Catalog # 407-ML) and Recombinant Rat IL-7 (Catalog # 7857-RL). PVDF Membrane was probed with 0.1 µg/mL of Goat Anti-Human IL-7 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-207-NA) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). A specific band was detected for IL-7 at approximately 17 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 3.

Neutralization

Cell Proliferation Induced by IL-7 and Neutralization by Human IL-7 Antibody. Recombinant Human IL-7 (Catalog # 207-IL) stimulates proliferation in PHA-activated human peripheral blood mononuclear cells (PBMC) in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human IL-7 (2.5 ng/mL) is neutralized (green line) by increasing concentrations of Human IL-7 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-207-NA). The ND₅₀ is typically 0.02-0.04 µg/mL.

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. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 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.