

### General Information

Synonyms	Human IL7; hIL-7; Interleukin-7; interleukin 7; Lymphopoietin-1; PBGF
Accession #	P13232
Source	Human embryonic kidney cell, HEK293-derived human IL-7 protein
	Asp26-His177
Predicted Molecular weight	17.4 kDa

### Components and Storage

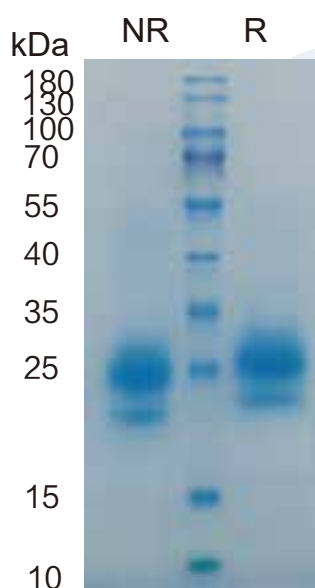
Formulation	Solution protein.
	Dissolved in sterile PBS buffer.
	This solution can be diluted into other aqueous buffers. Centrifuge the vial prior to opening.

Storage and Stability	Avoid repeated freeze-thaw cycles.
	It is recommended that the protein be aliquoted for optimal storage.
	12 months from date of receipt, -20 to -70 °C as supplied.
Shipping	Shipping with dry ice.

### Quality

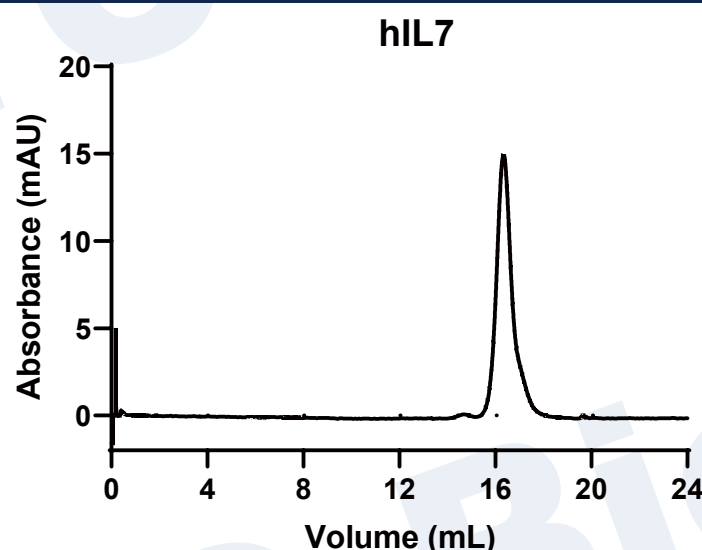
Purity	> 95%, determined by SDS-PAGE.
Endotoxin Level	<0.010 EU per 1 ug of the protein by the LAL method.
Activity	Measured in a cell proliferation assay using PHA-activated human peripheral blood lymphocytes (PBL). The EC50 for this effect is 0.1-0.5 ng/mL.

### SDS-PAGE



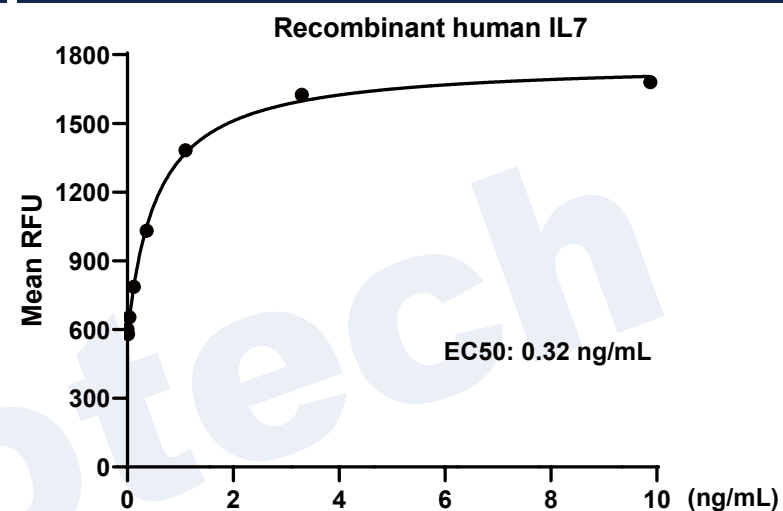
4 ug/lane protein was resolved with SDS-PAGE under non-reducing (NR) and reducing (R) conditions and visualized by Coomassie Blue staining.

### Gel filtration



Size-exclusion chromatography of recombinant human IL7 protein (280 nm absorbance)

### Bioactivity



Recombinant human IL7 (Catalog # HF-1007) stimulates cell proliferation of the PHA-activated human peripheral blood lymphocytes (PBL).

### Background

**Interleukin-7 (IL-7)**, is a 25 kDa cytokine of the hemopoietin family that plays important roles in lymphocyte differentiation, proliferation, and survival (1-4). Human IL-7 cDNA encodes 177 amino acids (aa) that include a 25 aa signal peptide (3). Human IL-7 shares approximately 60-63% aa sequence identity with mouse, rat, canine and feline IL-7, and 72-76% with equine, bovine, ovine, porcine, feline and canine IL-7. Human and mouse IL-7 exhibit cross-species activity (2, 3). IL-7 protein is produced by a wide variety of cells in primary and secondary lymphoid tissues, including stromal epithelial cells of the thymus, bone marrow, and intestines (1, 2, 5). Circulating IL-7 protein is limiting in healthy animals, but increases during lymphopenia (1, 6). IL-7 signals through a complex of the IL-7 Receptor alpha subunit (IL-7 R alpha, also known as CD127) with the common gamma chain (gamma c) (1). IL-7 contributes to the maintenance of all naive and memory T cells, mainly by promoting expression of the anti-apoptotic protein Bcl-2 (7-9). It is required for optimal T cell-dendritic cell interaction (6). IL-7 is expressed early in B cell development prior to the appearance of surface IgM (1, 5, 7). In mouse, IL-7 activation of IL-7 R alpha is critical for both T cell and B cell lineage development, while in humans, it is required for T cell but not for B cell development (4, 7, 10, 11). However, IL-7 functions in both mouse and human pro-B cells to suppress premature Ig light chain recombination during proliferative growth (12, 13).

### Reference

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