

## Recombinant Human IL-7 (His, Strep)

### Information

Gene ID	3574
Accession #	P13232
Alternate Names	LP-1; pre-B cell factor
Source	HEK293
Protein sequence	DCDIEGKDGKQYESVLMVSIQQLLDMSKEIGSNCLNNEFNFFKRHICDANKEGMFLFRAARKLRQFLKMNS TGDFDLHLLKVSEGTILLNCTGQVKGRKPAALGEAQPTKSLEENKSLKEQKKLNDLCFLKRLLQEIKTCWN KILMGTKEH
Tag	C-His, C-Strep
M.Wt	The protein has a calculated MW of 17.3 KDa.
Appearance	Solution protein.
Stability & Storage	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. -2 years from date of receipt, -20 to -70 °C as supplied.
Concentration	1 mg/mL
Formulation	Supplied as a 0.2 µm filtered solution in PBS, pH7.4.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	Fully biologically active as determined by a cell proliferation assay using PHA-activated human peripheral blood lymphocytes (PBL). The EC50 for this effect is 1 ng/mL.
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

### Quality Control

Purity	> 95 % by SDS-PAGE.
Endotoxin	Less than 1.0 EU/µg as determined by LAL method.

### Description

Interleukin-7 (IL-7) is a 25 kDa hematopoietic family cytokine that plays an important role in lymphocyte differentiation, proliferation, and survival. Human IL-7 cDNA encodes 177 amino acids (aa), including 25 aa signal peptides. Human IL-7 has approximately 60-63% aa sequence identity with mouse, rat, canine, and feline IL-7, and 72-76% with equine, cattle, sheep, pig, cat, and canine IL-7. Human and mouse IL-7 exhibit cross-species activity. IL-7 protein is produced by a variety of cells in primary and secondary lymphoid tissues, including stromal epithelial cells of the thymus, bone marrow, and intestine. Circulating IL-7 protein is limited in healthy animals but increases during lymphopenia. 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). IL-7 contributes to the maintenance of all naïve and memory T cells, primarily by promoting the expression of the anti-apoptotic protein Bcl-2. It is required for optimal T cell-dendritic cell interactions. IL-7 is expressed early in B cell development prior to the appearance of surface IgM. In mice, IL-7 activation of IL-7 R $\alpha$  is essential for both the development of both T cells and B cell

lineages, whereas in humans it is essential for T cells but not for B cell development. However, IL-7 has the function of inhibiting premature Ig light chain recombination during proliferative growth in both mouse and human B protocytes.





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