

# Cytokines

## Human Recombinant IL-7



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### Interleukin 7

Catalog #	78053.1	10 µg
	78053	100 µg
	78053.2	500 µg
	78053.3	1000 µg

## Product Description

Interleukin 7 (IL-7) is a member of the Type I cytokine family that is critical for T and B cell development and survival. It is produced by non-hematopoietic cells in the thymus, lymphoid organs, and by bone marrow stromal cells (Lundström et al.). IL-7 binds to a receptor (IL-7R) composed of common gamma chain and IL-7Ra (CD127) and signals through the JAK/STAT and PI3K pathways. IL-7 regulates the survival of naïve and memory CD4+ and CD8+ T cells,  $\gamma\delta$  T cells, NK T cells, innate lymphoid cells, and T regulatory cells (Carrette & Surh). Although a deficiency in IL-7R still permits the generation of normal numbers of peripheral B cells in humans, stimulation of human B cell precursors with IL-7 could promote STAT-5-dependent proliferation and survival in vitro (Clark et al.; Corfe & Paige).

## Product Information

Alternative Names:	Interleukin-7, LP-1, Lymphopoietin 1, Pre-B cell factor
Accession Number:	P13232
Amino Acid Sequence:	MDCDIEGKDG KQYESVLMVS IDQLLDSMKE IGSNCLNNEF NFFKRHICDA NKEGMFLFRA ARKLRQFLKM NSTGDFDLHL LKVSEGTTL LNCTGQVKGR KPAALGEAQP TKSLEENKSL KEQKKLNDLC FLKRLLEIK TCWNKILMGT KEH
Predicted Molecular Mass:	17.5 kDa
Species:	Human
Cross Reactivity:	Mouse
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing acetic acid.
Source:	E. coli

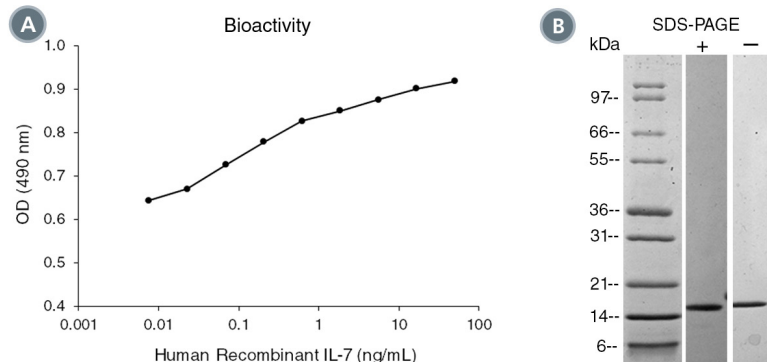
## Specifications

Activity:	The specific activity is $\geq 1 \times 10^6$ units/mg ( $EC_{50} \leq 1$ ng/mL) as determined by a cell proliferation assay using 2E8 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is $\leq 1$ EU/µg protein.

## Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Resuspend the product in sterile water containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 month or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles. NOTE: If reconstituted product will be used immediately, BSA is not required.

## Data



(A) The biological activity of Human Recombinant IL-7 was tested by its ability to promote the proliferation of 2E8 cells. Cell proliferation was measured after 66 hours of culture using a fluorometric assay method. The EC<sub>50</sub> is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC<sub>50</sub> in the above example is 0.06 - 0.09 ng/mL.

(B) 1 µg of Human Recombinant IL-7 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IL-7 has a predicted molecular mass of 17.5 kDa.

## Related Products

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## References

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- Clark MR et al. (2014) Orchestrating B cell lymphopoiesis through interplay of IL-7 receptor and pre-B cell receptor signalling. *Nat Rev Immunol* 14(2): 69–80.
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- Lundström W et al. (2012) IL-7 in human health and disease. *Semin Immunol* 24(3): 218–24.

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