

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 and 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, γ/δ T cells, NKT cells, innate lymphoid cells, and regulatory T 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 STAT5-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 TCWINKILMGT 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

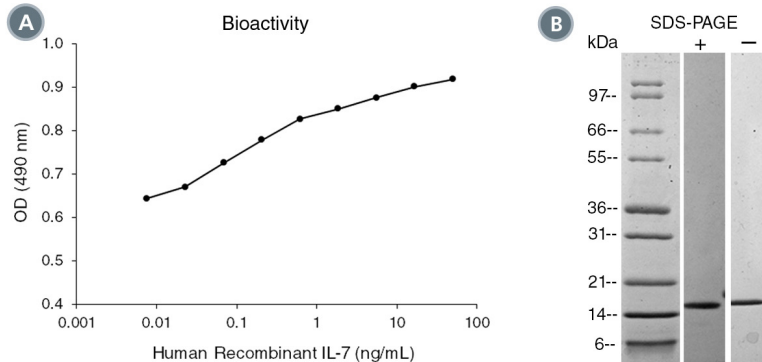
Activity:	The specific activity is $\geq 1 \times 10^6$ units/mg ($EC_{50} \leq 1$ ng/mL) as determined by a cell proliferation assay using 2E8 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 1 EU/ μ g protein.

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. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

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 EC₅₀ is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC₅₀ 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

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

- Carrette F & Surh CD. (2012) IL-7 signaling and CD127 receptor regulation in the control of T cell homeostasis. *Semin Immunol* 24(3): 209–17.
- 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.
- Corfe SA & Paige CJ. (2012) The many roles of IL-7 in B cell development; mediator of survival, proliferation and differentiation. *Semin Immunol* 24(3): 198–208.
- Lundström W et al. (2012) IL-7 in human health and disease. *Semin Immunol* 24(3): 218–24.

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