TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713
INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM
FOR GLOBAL CONTACT DETAILS VISIT WWW.STEMCELL.COM

Human Recombinant IL-7

Interleukin 7

Catalog #78053.1	10 µg
Catalog #78053	100 µg
Catalog #78053.2	200 µg
Catalog #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 LKVSEGTTIL LNCTGQVKGR KPAALGEAQP TKSLEENKSL KEQKKLNDLC FLKRLLQEIK TCWNKILMGT KEH

Predicted Molecular Mass: 17.5 kDa

Species: Human

Product Formulation: Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate, pH 7.5.

Source: E. coli

Purity: ≥ 97%

Specifications

Activity: The specific activity is ≥ 2 x 10^6 units/mg (EC50 ≤ 0.5 ng/mL), as determined by a cell proliferation assay using phytohemagglutinin (PHA)-stimulated human peripheral blood mononuclear cells (PBMCs).

Endotoxin Level: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

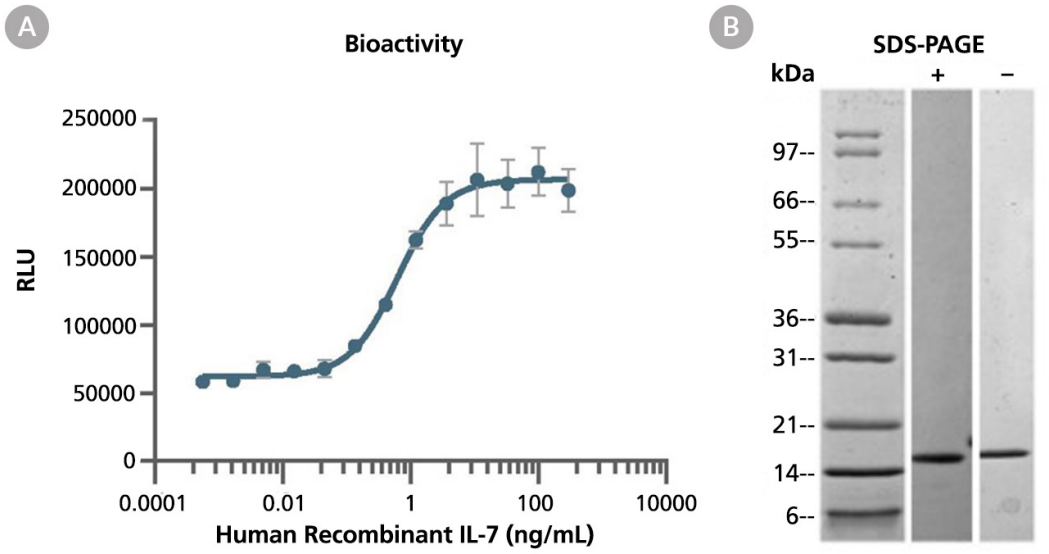
Preparation and Storage

Stability and Storage: Store at -20 to -80°C. 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 PHA-stimulated PBMCs. The EC50 is defined as the effective concentration of the cytokine at which cell proliferation is at 50% of maximum. The EC50 in the above example is ≤ 0.5 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 or peptide pools, 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.