Cytokines

Human Recombinant IL-3

Interleukin 3

Catalog #	78040.1	10 µg
	78040	100 µg
	78040.2	1000 µg

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Product Description

Interleukin 3 (IL-3) is a species-specific pleiotropic cytokine that promotes the survival and proliferation of pluripotent hematopoietic stem cells and lineage-committed progenitor cells and their differentiation into mature cells of most lineages, including basophils, neutrophils, eosinophils, macrophages, dendritic cells, erythrocytes, and megakaryocytes (Yang et al.; Dorssers et al.; Broughton et al.). IL-3 is produced by activated T cells and has a physiological role in inflammation and allergies by promoting the secretion of inflammatory mediators such as histamine, IL-4, and IL-6 by basophils and eosinophils (Broughton et al.). The IL-3 receptor consists of a unique alpha subunit (CD123) and a beta common subunit (βc or CD131) that is shared with the receptors for IL-5 and GM-CSF, and is the principal signal transduction subunit for these cytokines. IL-3 binding to the heterodimeric receptor activates JAK/STAT, MAPK, and PI3K signaling pathways (Woodcock et al.).

Product Information

Alternative Names:	HCGF, Interleukin-3, MCGF, Multi-CSF, P-cell stimulation factor
Accession Number:	P08700
Amino Acid Sequence:	MAPMTQTTSL KTSWVNCSNM IDEIITHLKQ PPLPLLDFNN LNGEDQDILM ENNLRRPNLE AFNRAVKSLQ NASAIESILK NLLPCLPLAT AAPTRHPIHI KDGDWNEFRR KLTFYLKTLE NAQAQQTTLS LAIF
Predicted Molecular Mass:	15.2 kDa
Species:	Human
Cross Reactivity:	Does not show activity on mouse cells
Formulation:	Lyophilized from a sterile filtered aqueous solution containing 0.1% trifluoroacetic acid.
Source:	E. coli

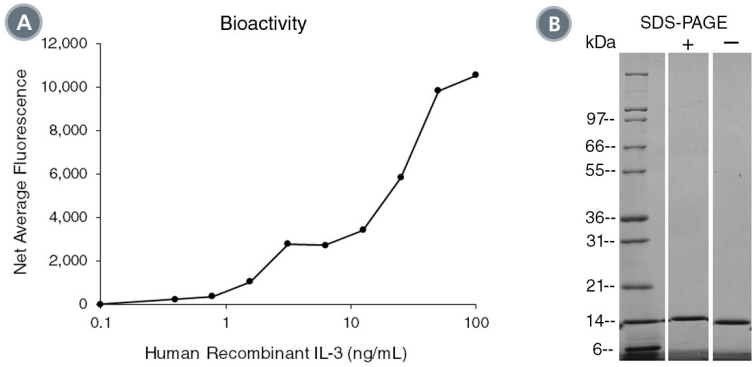
Specifications

Activity:	The specific activity is ≥ 4 x 10^4 units/mg (EC50 ≤ 0.025 µg/mL) as determined by a cell proliferation using TF-1 cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic limulus amebocyte lysate (LAL) analysis and is ≤ 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.
Reconstitution:	Centrifuge vial before opening. Resuspend the product in 20 mM acetic acid 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-3 was tested by its ability to promote the proliferation of TF-1 cells. Cell proliferation was measured after 72 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 12.4 - 18.6 ng/mL.
(B) 1 µg of Human Recombinant IL-3 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IL-3 has a predicted molecular mass of 15.2 kDa.

Related Products

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

References

Broughton SE et al. (2012) The GM-CSF/IL-3/IL-5 cytokine receptor family: from ligand recognition to initiation of signaling. Immunol Rev 250(1): 277–302.
Dorssers L et al. (1987) Characterization of a human multilineage-colony-stimulating factor cDNA clone identified by a conserved noncoding sequence in mouse interleukin-3. Gene 55(1): 115–24.
Woodcock JM et al. (1999) The functional basis of granulocyte-macrophage colony stimulating factor, interleukin-3 and interleukin-5 receptor activation, basic and clinical implications. Int J Biochem Cell Biol 31(10): 1017–25.
Yang YC et al. (1986) Human IL-3 (multi-CSF): identification by expression cloning of a novel hematopoietic growth factor related to murine IL-3. Cell 47(1): 3–10.