

Cytokines

Mouse Recombinant IL-3



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Interleukin 3

| | | |
|-----------|---------|---------|
| Catalog # | 78042.1 | 10 µg |
| | 78042 | 100 µg |
| | 78042.2 | 1000 µg |

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 mast cells, basophils, neutrophils, eosinophils, macrophages, dendritic cells, erythrocytes, and megakaryocytes (Broughton et al.; Fung et al.; Metcalf 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 mast cells, basophils, and eosinophils. The mouse IL-3 receptor consists of a unique alpha subunit (CD123) and two beta subunits, one specific for IL-3 (β IL-3), the other shared with the receptors for IL-5 and GM-CSF (beta common chain, β c, or CD131). IL-3 binding to heterodimeric receptors containing the alpha subunit and one of either beta subunits activates JAK/STAT, MAPK, and PI3K signaling pathways (Scott & Begley).

Product Information

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|---------------------------|---|
| Alternative Names: | HCGF, Interleukin-3, MCGF, Multi-CSF, P-cell stimulation factor |
| Accession Number: | P01586 |
| Amino Acid Sequence: | MDTHRLTRTL NCSSIVKEII GKLPEPELKT DDEGPSLRNK SFRRVNLSKF VESQGEVDPE DRYVIKSNLQ KLNCLPTSA NDSALPGVFI RDLDDFRKKL RFYMHVHLNDL ETVLTSRPPQ PASGSVSPNR GTVEC |
| Predicted Molecular Mass: | 15.2 kDa |
| Species: | Mouse |
| Cross Reactivity: | Highly species-specific |
| Formulation: | Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid. |
| Source: | E. coli |

Specifications

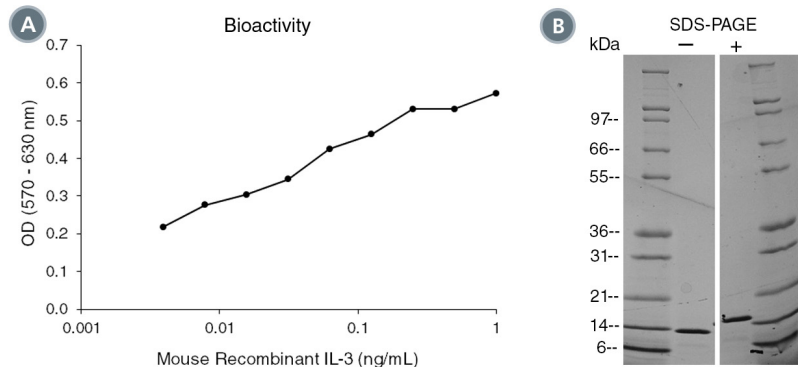
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|------------------|---|
| Activity: | The specific activity is $\geq 4 \times 10^6$ units/mg ($EC_{50} \leq 0.25$ ng/mL) as determined by a cell proliferation assay using NFS-60 cells. |
| Purity: | $\geq 95\%$ |
| Endotoxin Level: | Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 1 EU/ μ g protein. |

Preparation and Storage

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| 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 $2 - 8^{\circ}\text{C}$ 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 Mouse Recombinant IL-3 was tested by its ability to promote the proliferation of NFS-60 cells. Cell proliferation was measured after 60 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 0.11 ng/mL.

(B) 1 µg of Mouse Recombinant IL-3 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse 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, visit 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.
- Fung MC et al. Molecular cloning of cDNA for murine interleukin-3. *Nature* 307(5948): 233–7.
- Metcalf D et al. (1986) Effects of purified bacterially synthesized murine multi-CSF (IL-3) on hematopoiesis in normal adult mice. *Blood* 68(1): 46–57.
- Scott CL & Begley CG. (1999) The beta common chain (beta c) of the granulocyte macrophage-colony stimulating factor, interleukin-3 and interleukin-5 receptors. *Int J Biochem Cell Biol* 31(10): 1011–5.

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