

### General Information

Synonyms	Hematopoietic growth factor; IL3; IL-3; interleukin 3 (colony-stimulating factor, multiple); interleukin-3
Accession #	P01586
Source	Human embryonic kidney cell, HEK293-derived mouse IL-3 protein
	Asp33-Cys166
Predicted Molecular weight	15.1 kDa

### Components and Storage

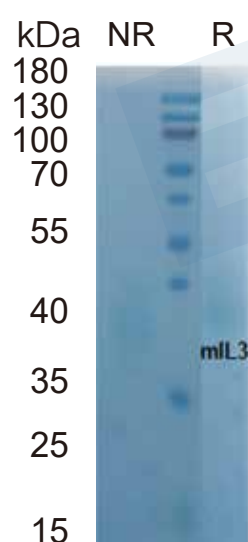
Formulation	Solution protein. Dissolved in sterile PBS buffer. This solution can be diluted into other aqueous buffers. Centrifuge the vial prior to opening.
Storage and Stability	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 12 months from date of receipt, -20 to -70 ° C as supplied.

Shipping Shipping with dry ice

### Quality

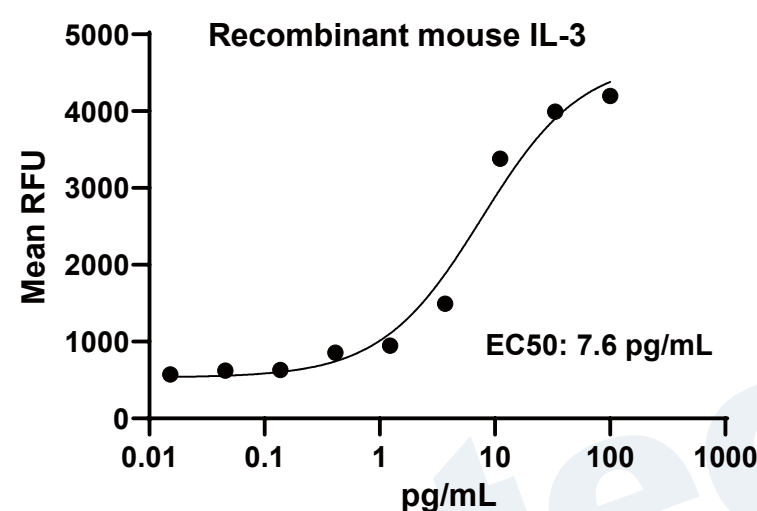
Purity	> 95%, determined by SDS-PAGE
Endotoxin Level	<0.010 EU per 1 ug of the protein by the LAL method
Activity	Measured in a cell proliferation assay using NFS-60 mouse myelogenous leukemia lymphoblast cells. The EC50 for this effect is 3-12 pg/mL.

### SDS-PAGE



4 ug/lane protein was resolved with SDS-PAGE under non-reducing (NR) and reducing (R) conditions and visualized by Coomassie Blue staining.

### Bioactivity



Recombinant mouse IL-3 (Catalog # MF-1003) stimulates cell proliferation of the NFS-60 mouse myelogenous leukemia lymphoblast cells.

### Background

**Interleukin-3 (IL-3)** is a pleiotropic factor produced primarily by activated T cells that can stimulate the proliferation and differentiation of pluripotent hematopoietic stem cells as well as various lineage committed progenitors. In addition, IL-3 also affects the functional activity of mature mast cells, basophils, eosinophils and macrophages. Because of its multiple functions and targets, it was originally studied under different names, including mast cell growth factor P-cell stimulating factor, burst promoting activity, multi-colony stimulating factor, thy-1 inducing factor and WEHI-3 growth factor. In addition to activated T cells, other cell types such as human thymic epithelial cells, activated mouse mast cells, mouse keratinocytes and neurons/astrocytes can also produce IL-3. At the amino acid sequence level, mature human and mouse IL-3 share only 29% sequence identity. Consistent with this lack of homology, IL-3 activity is highly species-specific and human IL-3 does not show activity on mouse cells. IL-3 exerts its biological activities through binding to specific cell surface receptors. The high affinity receptor responsible for IL-3 signaling is composed of alpha and beta subunits. The IL-3R alpha is a member of the cytokine receptor super family and binds IL-3 with low affinity. Two distinct beta subunits, AIC2A (beta IL-3) and AIC2B (beta c) are present in mouse cells. beta IL-3 also binds IL-3 with low affinity and forms a high affinity receptor with the alpha subunit. The beta c subunits does not bind any cytokine but forms functional high affinity receptors with the alpha subunit of the IL-3, IL-5 and GM-CSF receptors. Receptors for IL-3 are present on bone marrow progenitors, macrophages, mast cells, eosinophils, megakaryocytes, basophils and various myeloid leukemic cells.

### Reference

1. Yokota, T. et al., 1984, Proc. Natl. Acad. Sci. USA 81:1070.
2. Fung, M.C. et al., 1984, Nature 307:233.
3. Miyatake, S. et al., 1985, Proc. Natl. Acad. Sci. USA 82:316.

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