

# Cytokines

## Mouse Recombinant IL-4



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### Interleukin 4

Catalog #	78047.1	20 µg
	78047	100 µg
	78047.2	1000 µg

## Product Description

Interleukin 4 (IL-4) is a type I cytokine produced by Th2 cells, NK T cells,  $\gamma/\delta$  T cells, eosinophils, mast cells, and activated basophils. IL-4 receptors are present on a number of cells, including hematopoietic, endothelial, epithelial, muscle, and brain tissues. IL-4 receptor engagement initiates signaling through the JAK/STAT pathway, and leads to the activation of PI3K and Ras/MAPK pathways (Nelms et al.). IL-4 plays a key role in immunoglobulin class switching in B cells and in regulating the differentiation of naïve T cells into Th2 cells, while inhibiting Th1 differentiation. IL-4 acts together with tumor necrosis factor to stimulate expression of adhesion molecules on vascular endothelial cells and to downregulate expression of E-selectin, thus recruiting T cells and eosinophils to the site of inflammation (Nelms et al.).

## Product Information

Alternative Names:	B cell stimulating factor, BCDF, BCGF, BSF-1, Interleukin-4
Accession Number:	P07750
Amino Acid Sequence:	MHIHGCDKNH LREIIGILNE VTGEGTPCTE MDVPNVLAT KNTTESELVC RASKVLRIFY LKHGKTPCLK KNSSVLMELQ RLFRAFRCLD SSISCTMNES KSTSLKDFLE SLKSIMQMDY S
Predicted Molecular Mass:	13.7 kDa
Species:	Mouse
Cross Reactivity:	Species-specific
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid.
Source:	E. coli

## Specifications

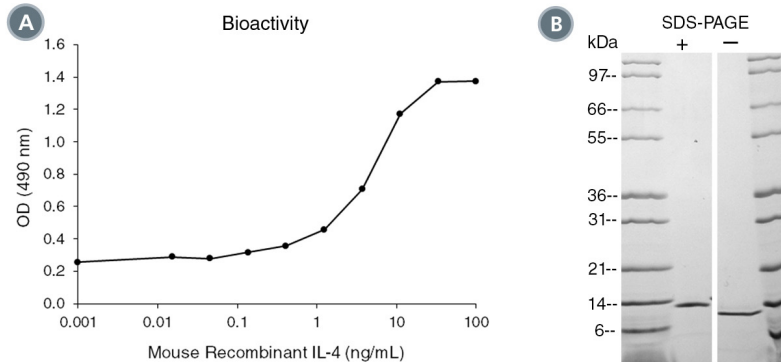
Activity:	The EC <sub>50</sub> is $\leq 20$ ng/mL as determined by a cell proliferation assay using HT-2 cells. The specific activity is approximately $2.5 \times 10^4$ IU/ $\mu$ g as calibrated against the mouse recombinant IL-4 WHO International Standard (NIBSC code: 91/656).
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is $\leq 1$ EU/ $\mu$ 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 Mouse Recombinant IL-4 was tested by its ability to promote the proliferation of HT-2 cells. Cell proliferation was measured after 67 hours of culture using a fluorometric assay method. The EC<sub>50</sub> is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC<sub>50</sub> in the above example is 3.8 - 5.7 ng/mL.

(B) 1 µg of Mouse Recombinant IL-4 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse Recombinant IL-4 has a predicted molecular mass of 13.7 kDa.

## Related Products

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## References

Nelms K et al. (1999) The IL-4 receptor: signaling mechanisms and biologic functions. *Annu Rev Immunol* 17: 701–38.

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