

Product Information

Interleukin-4, human recombinant, expressed in *E. coli*

Catalog Number **I4269**

Storage Temperature –20 °C

Synonyms: IL-4, B cell stimulatory factor-1 (BSF-1), mast cell growth factor-2 (MCGF-2), T cell growth factor-2 (TCGF-2)

Product Description

Interleukin-4 (IL-4) is a pleiotropic cytokine that regulates diverse T and B cell responses including differentiation of naive T cells into the TH2 phenotype, promoting B cell proliferation, antibody isotype switching, and expression of other TH2 cytokines including IL-5 and IL-9.^{1,2} IL-4 plays a critical role in the development of allergic inflammation and asthma.³

IL-4 binds to two distinct receptors; the type I receptor, a heterodimer consisting of the IL-4R α chain and the common gamma chain, γ c, and the type II receptor, a heterodimer of IL-4R α and IL-13R α 1.⁴

Naturally occurring IL-4 has a molecular mass of 12–20 kDa. Recombinant human IL-4 is a 14.9 kDa protein containing 129 amino acid residues. Human and mouse IL-4 share a 50% amino acid sequence homology, but their biological actions are species-specific.⁵

This product is lyophilized from a sterile-filtered solution without carrier protein.

Purity: ≥98% (SDS-PAGE)

ED₅₀: ≤0.4 ng/mL

The biological activity of human IL-4 is tested in culture using a factor dependent cell line, TF-1.⁶ The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Endotoxin: ≤1 EU/ μ g protein

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute the contents of the vial using sterile water to a concentration of 0.1 mg/mL. This solution can be further diluted into other aqueous buffers and stored at 2–8 °C for up to 1 week or at –20 °C for extended use.

Storage/Stability

Store the lyophilized product at –20 °C.

Reconstituted IL-4 should be stored in working aliquots at –20 °C. Repeated freezing and thawing, or storage in frost-free freezers is not recommended.

References

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2. O'Garra, A., and Arai, N., The molecular basis of T helper 1 and T helper 2 cell differentiation. *Trends Cell Biol.*, **10**, 542-550 (2000).
3. Ryan, J.J. et al., Mast cell homeostasis: a fundamental aspect of allergic disease. *Crit. Rev. Immunol.*, **27**, 15-32 (2007).
4. Callard, R.E. et al., IL-4 and IL-13 receptors: are they one and the same? *Immunol. Today*, **17**, 108-110 (1996).
5. Yokota, T. et al., Molecular biology of interleukin 4 and interleukin 5 genes and biology of their products that stimulate B cells, T cells and hemopoietic cells. *Immunol. Rev.*, **102**, 137-187 (1988).
6. Kitamura, T. et al., Establishment and characterization of a unique human cell line that proliferates dependently on GM-CSF, IL-3, or erythropoietin. *J. Cell Physiol.*, **140**, 323-334 (1989).

EM,EB,RBG,KAA,MAM 08/11-1

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