Recombinant Human Interleukin-4

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	**200-023-DC**
Size:	50 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	*IL4*
Synonyms:	Interleukin-4, B-cell stimulating factor, Lymphocyte stimulatory factor 1

IL-4 is a pleiotropic cytokine that regulates diverse T and B cell responses including cell proliferation, survival and gene expression. Produced by mast cells, T cells and bone marrow stromal cells, IL-4 regulates the differentiation of naive CD4+ T cells into helper Th2 cells, characterized by their cytokine-secretion profile that includes secretion of IL-4, IL-5, IL-6, IL-10, and IL-13, which favor a humoral immune response. Another dominant function of IL-4 is the regulation of immunoglobulin class switching to the IgG1 and IgE isotypes. Excessive IL-4 production by Th2 cells has been associated with elevated IgE production and allergy. Recombinant human IL-4 is a 14.9 kDa globular protein containing 130 amino acid residues.

References

1. Benczik, M. and S.L. Gaffen (2004) Immunol. Invest. 33:109.
2. Chomarat, P. and J. Banchereau (1998) Int. Rev. Immunol. 17:1.
3. Yokota, T. *et al*. (1986) Proc. Natl. Acad. Sci. 83:5894.
4. Redfield, C. *et al*. (1991) Biochemistry 30:11029.
5. Ramirez, F. *et al*. (1988) J. Immunol. Meth. 221:141.
6. Leitenberg, D. and T.L. Feldbush (1988) Cell. Immunol. 111:451.
7. Mosman, T.R. *et al*. (1987) J. Immunol. 138:1813.
8. Mueller, T.D. *et al*. (2002) Biochim. Biophys. Acta 1592:237.

Sequence

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MHKCDITLQEIIKTLNSLTEQKTLCTELTVTDIFAASKNTTEKETF
CRAATVLRQFYSHHEKDTRCLGATAQQFHRHKQLIRFLKRLDRNLW
GLAGLNSCPVKEANQSTLENFLERLKTIMREKYSKCSS
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Database References

Protein RefSeq:	NP_000580
Uniprot ID:	P05112
mRNA RefSeq:	NM_000589

Product Specifications

Expressed in	E.coli
Purity	> 98% by SDS-PAGE & silver stain
Endotoxin level	< 0.1ng per µg (IEU/µg) of rh IL-4
Buffer	PBS
Stabilizer	None
Formulation	lyophilized
Length (aa):	130
MW:	14.9 kDa
Result by N-terminal sequencing	MHKCDITL

Stability: The lyophilized IL-4, though stable at room temperature, is best stored desiccated below 0°C. Reconstituted IL-4 should be stored in working aliquots at -20°C.

Reconstitution: The lyophilized IL-4 should be reconstituted in water to a concentration not less than 100µg/ml. This solution can be diluted into other buffered solutions or stored at -20°C for future use.

AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: The ED_{50} as determined by the dose-dependent stimulation of human TF-1 cells is 0.1-0.5 ng/ml. As positive control the WHO standard 88/656 was used.

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Recombinant Human Interleukin-4

Handling/Applications

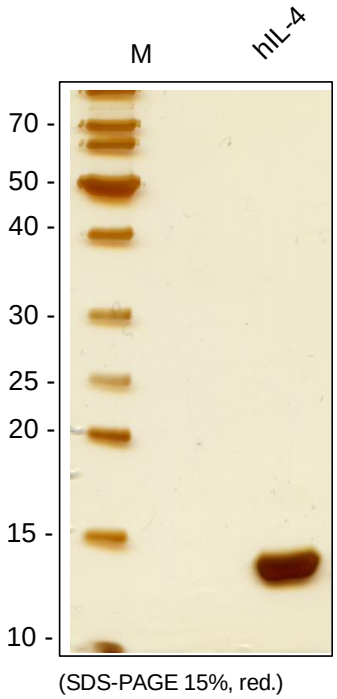

Figure 1. SDS-PAGE analysis of recombinant human IL-4. Sample was loaded in 15% SDS-polyacrylamide gel under reducing conditions and stained with Silver staining.

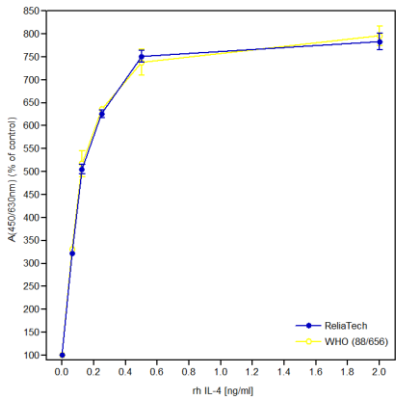

Fig. 2: Proliferation assay with TF1 cells. The cells were stimulated using recombinant human IL-4 and the WHO standard 88/656. The cells were stimulated with increasing amounts of the recombinant proteins. Values are the means (±SD) of triplicate determinations and expressed as percentage of control.

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