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Mouse Interleukin-4 (mIL-4)

For Research Use Only. Not for Use in Diagnostic Procedures.

MW (kDa):	UniProt ID:	Entrez-Gene Id:
16	#P07750	16189

Background

IL-4 is produced by T cells, NK T cells, $\gamma\delta$ cells, and mast cells (1). Target cells include B cells, T cells, and macrophages (1). IL-4 induces the polarization of naive helper T cells into the TH2 phenotype (1,2). IL-4 also promotes B cell proliferation, antibody class switching and the production other TH2 cytokines including IL-5 and IL-9. IL-4 induced TH2 polarization is important in developing humoral immunity against extracellular pathogens (1) and is involved in the development of allergy and asthma (3). IL-4 binds to two distinct receptors, the Type I receptor and Type II receptor. Type I receptor is a heterodimer consisting of IL-4Ra chain and the common gamma chain, γc (4,5). Type II receptor, which is shared with IL-13, is a heterodimer of IL-4Ra and IL-13Ra1. Signaling initiated via Type I receptor results in the activation of Jak1/Stat6, Jak3 and the PI3K/Akt pathways (4). The Type II receptor activates the Jak1/Stat6 and the Tyk2/Stat3 pathways (4).

Endotoxin

Less than 0.01 ng endotoxin/1 μ g mIL-4.

Purity

>98% as determined by SDS-PAGE of 6 μ g reduced (+) and non-reduced (-) recombinant mIL-4. All lots are greater than 98% pure.

Source / Purification

Recombinant mouse IL-4 (mIL-4) His21-Ser140 (Accession #NP_067258) was expressed in human 293 cells at Cell Signaling Technology.

Bioactivity

The bioactivity of recombinant mIL-4 was determined in an HT-2 cell proliferation assay. The ED₅₀ of each lot is between 100-400 pg/ml.

Background References

- Corthay, A. (2006) *Scand J Immunol* 64, 93-6.
- Wynn, T.A. (2003) *Annu Rev Immunol* 21, 425-56.
- Nakajima, H. and Takatsu, K. (2007) *Int Arch Allergy Immunol* 142, 265-73.
- Wills-Karp, M. and Finkelman, F.D. (2008) *Sci Signal* 1, pe55.
- Mueller, T.D. et al. (2002) *Biochim Biophys Acta* 1592, 237-50.

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