

# Mouse IL-4

## research grade

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#### 1. Description

<b>Products</b>	Mouse IL-4, research grade. Recombinant mouse interleukin 4.						
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Content in µg	Order no.						
10	130-094-061						
25	130-097-757						
<b>Biological activity</b>	The ED <sub>50</sub> is ≤0.2 ng/mL corresponding to an activity of ≥5×10 <sup>6</sup> U/mg.  ▲ <b>Note:</b> The ED <sub>50</sub> is determined by proliferation assay using HT-2 cells. The proliferation assay is calibrated with the reference standard for mouse IL-4 (NIBSC code 91/656) provided by the WHO/National Institute for Biological Standards and Control.						
<b>Primary structure</b>	Single, non-glycosylated polypeptide chain (121 amino acid residues).						
<b>Molecular mass</b>	13.7 kDa.						
<b>Source</b>	Produced in <i>E. coli</i> .						
<b>Product format</b>	Lyophilized from a filtered (0.2 µm) buffer solution.						
<b>Stabilizer</b>	Mannitol and trehalose.						
<b>Purity</b>	>97% as determined by SDS-PAGE analysis.						
<b>Endotoxin level</b>	Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.						
<b>Storage</b>	Lyophilized Mouse IL-4, research grade should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C or below. Avoid repeated freeze-thaw cycles.						
<b>Reconstitution</b>	It is recommended to reconstitute lyophilized Mouse IL-4, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.						

#### 1.1 Background information

IL-4 is produced mainly by activated T<sub>H</sub>2 cells and, to a lesser extent, by T<sub>H</sub>1 cells. It binds to the IL-4 receptor α (CD124), followed by the dimerization with other receptor chains to generate type 1 and type 2 receptors. IL-4 promotes the proliferation and differentiation of activated B cells and the expression of MHC class II antigens. Mice over expressing IL-4 have elevated levels of IgE and IgG1 and show a deficiency in T cell maturation. CD4<sup>+</sup> T cells from knockout mice lacking IL-4 are not able to produce T<sub>H</sub>2 cytokines after *in vitro* stimulation. The biological activity of IL-4 is species-specific, i.e. murine IL-4 is inactive on human cells and *vice versa*.

#### 1.2 Applications

Mouse IL-4 can be used for a variety of applications, including:

- *In vitro* differentiation of naive CD4<sup>+</sup> T cells towards T<sub>H</sub>2 cells.
- *In vitro* studies of bone marrow precursor development to DCs, together with GM-CSF.
- *In vitro* investigation of B cell-T cell interaction, together with CD40-Ligand.

Optimal concentration for a specific application should be determined by a dose-response experiment.

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