



Miltenyi Biotec

# Mouse IL-12

5 µg  
25 µg  
100 µg

130-096-707  
130-096-708  
130-096-795

## Contents

### 1. Description

#### 1.1 Background information

#### 1.2 Applications

### 2. References

## 1. Description

<b>Components</b>	<b>Mouse IL-12:</b> Purified recombinant mouse interleukin 12.
<b>Sizes</b>	5 µg, 25 µg, 100 µg.
<b>Biological activity</b>	The ED <sub>50</sub> is ≤0.17 ng/mL* corresponding to a specific activity of ≥6×10 <sup>6</sup> U/mg.
<b>Primary structure</b>	Glycosylated single-chain polypeptide, p35 and p40 fused by a flexible linker region (534 amino acid residues).
<b>Molecular mass</b>	60 kDa (calculated). 70 kDa (SDS-PAGE under reducing conditions).
<b>Source</b>	Produced in HEK293 cells.
<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-12 should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C. Avoid repeated freeze-thaw cycles.
<b>Reconstitution</b>	It is recommended to reconstitute lyophilized Mouse IL-12 with deionized sterile-filtered water to a final concentration of 0.05–1.0 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.

\* The ED<sub>50</sub> is determined by induction of IFN-γ secretion by activated mouse CD4<sup>+</sup> splenic T cells.<sup>1</sup>

## 1.1 Background information

Interleukin 12 (IL-12) is a heterodimeric proinflammatory cytokine and a modulator of cell-mediated immunity, which is mainly produced by macrophages, dendritic cells, and B cells. IL-12 stimulates the production and secretion of several cytokines, in particular IFN-γ, by NK cells and T cells, induces proliferation and enhances the cytotoxic activity within these cell populations. Another important activity of IL-12, acting together with IFN-γ and IL-2, is to drive T helper (Th) cell responses towards the Th1 rather than the Th2 phenotype. Moreover, IL-12 is also important in resistance to viral disease and has significant antitumor activity. It has been shown that single chain fusion proteins of naturally occurring heterodimeric cytokines such as IL-12 or IL-23 are bioactive *in vitro* and *in vivo*.<sup>2,3</sup>

## 1.2 Applications

Mouse IL-12 can be used for a variety of applications, including:

- *In vitro* activation and proliferation of NK and T cells.
- *In vitro* differentiation of naive CD4<sup>+</sup> T cells towards Th1 cells.

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

## 2. References

1. Mattner, F. *et al.* (1993) The interleukin-12 subunit p40 specifically inhibits effects of the interleukin-12 heterodimer. *Eur. J. Immunol.* 23: 2202–2208.
2. Lieschke, G.J. *et al.* (1997) Bioactive murine and human interleukin-12 fusion proteins which retain antitumor activity *in vivo*. *Nat. Biotechnol.* 15: 35–40.
3. Miller, J.M. *et al.* (2010) Vesicular stomatitis virus modified with single chain IL-23 exhibits oncolytic activity against tumor cells *in vitro* and *in vivo*. *Int. J. Infeferon Cytokine Mediator Res.* 2010: 63–72.

All protocols and data sheets are available at [www.miltenyibiotec.com](http://www.miltenyibiotec.com).

## Warranty

The products sold hereunder are warranted only to be free from defects in workmanship and material at the time of delivery to the customer. Miltenyi Biotec GmbH makes no warranty or representation, either expressed or implied, with respect to the fitness of a product for a particular purpose. There are no warranties, expressed or implied, which extend beyond the technical specifications of the products. Miltenyi Biotec GmbH's liability is limited to either replacement of the products or refund of the purchase price. Miltenyi Biotec GmbH is not liable for any property damage, personal injury or economic loss caused by the product.

MACS is a registered trademark of Miltenyi Biotec GmbH.

Unless otherwise specifically indicated, Miltenyi Biotec products and services are for research use only and not for diagnostic or therapeutic use.

Copyright © 2011 Miltenyi Biotec GmbH. All rights reserved.