

# Cytokines

## Mouse Recombinant IL-12



Scientists Helping Scientists™ | WWW.STEMCELL.COM

TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

### Interleukin 12

Catalog # 78028.1  
78028

10 µg  
100 µg

## Product Description

Interleukin 12 (IL-12p70) is a heterodimeric cytokine composed of p35 and p40 subunits. IL-12 is produced by monocytes, macrophages, dendritic cells, neutrophils, and B cells in response to bacterial products and cytokines such as IFN- $\gamma$ . The IL-12 receptor is expressed on T, NK, and dendritic cells. Upon binding, IL-12 initiates signaling via the JAK/STAT signaling pathway and stimulates NK, B, and T cells to produce IFN- $\gamma$  (Watford et al.). It also regulates cytokine synthesis, proliferation of T and NK cells, and stimulates differentiation of CD4+ and CD8+ T cells (Germann & Rude). Mice that are deficient in IL-12 are susceptible to many intracellular pathogens and have impaired IFN- $\gamma$  secretion, Th1 differentiation, and NK cytolytic activity; however, Th2 development and IL-4 production are enhanced (Watford et al.).

## Product Information

**Alternative Names:** CLMF, CTL maturation factor, Cytotoxic lymphocyte maturation factor, IL-12p70, Interleukin-12, Natural killer cells stimulator factor, NKSF

**Accession Number:** p35 Subunit: P43431 / p40 Subunit: P43432

**Amino Acid Sequence:** p35 Subunit: RVIPVSGPAR CLSQSRNLLK TTDDMVKTAR EKLKHYSC TA EDIDHEDITR DQTSTLKTCL PLELHKNE SC LATRETSSTT RGSCLPPQKT SLMMTLCLGS IYEDLKMYQT EFQAINAALQ NHHHQIILD KGMLVAIDEL MQSLNHNGET LRQKPPVGEA DPYRVKMKLC ILLHAFSTRV VTINRVMGYL SSA  
p40 Subunit: MWELEKD VYV VEVDWTPDAP GETVNLCDT PEEDDITWTS DQRHGVIGSG KTLTITVKEF LDAGQYTCHK GGETLSHSHL LLHKKENGIW STEILKNFKN KTFKCEAPN YSGRFTCSWL VQRNMDLKFN IKSSSSSPDS RAVTCGMASL SAEKVTL DQR DYKYSVSCQ EDVTOPTAEE TLPIELALEA RQQNKYENYS TSFFIRDIK PDPPKNLQMK PLKNSQVEVS WEYPDSWSTP HSYFSLKFFV RIQRKKEKMK ETEEGCNQKG AFLVEKTSTE VQCKGGNVCV QAQDRYYNSS CSKWACVPCR VRS

**Predicted Molecular Mass:** 57.5 kDa

**Species:** Mouse

**Formulation:** **Lot #1000016996 or higher:** Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate, pH 7.5

**All other lots:** Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate and sodium chloride, pH 7.5

**Source:** HEK293 cells

## Specifications

**Activity:** **Lot #1000016996 or higher:** The specific activity is  $\geq 6.7 \times 10^4$  units/mg ( $EC_{50} \leq 15$  ng/mL) as determined by the secreted embryonic alkaline phosphatase (SEAP) reporter in HEK-Blue™ IL-12 cells.

**All other lots:** The specific activity is  $\geq 5 \times 10^4$  units/mg ( $EC_{50} \leq 20$  ng/mL) as determined by the induced expression of CD25 on CD8+ mouse T cells.

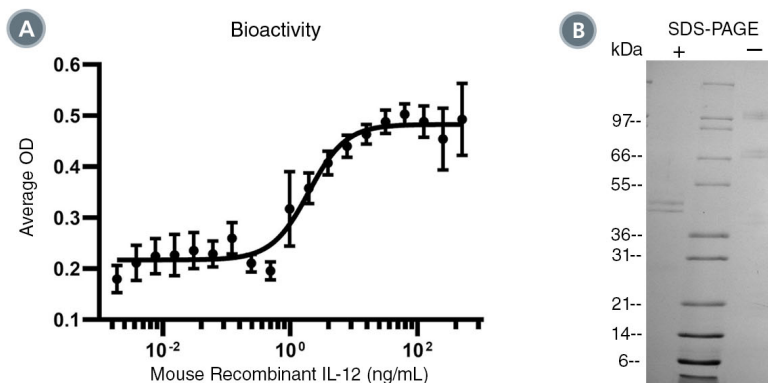
**Purity:**  $\geq 95\%$

**Endotoxin Level:** Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is  $\leq 1$  EU/ $\mu$ g protein.

## Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

## Data



(A) The biological activity of Mouse Recombinant IL-12 was tested by its ability to induce SEAP in HEK-Blue™ IL-12 cells. The EC<sub>50</sub> is defined as the effective concentration of the growth factor at which expression of CD25 is at 50% of maximum. The EC<sub>50</sub> in the above example is 2.3 ng/mL. For a representative bioactivity plot of CD25 expression on CD8+ T cells, contact us at [techsupport@stemcell.com](mailto:techsupport@stemcell.com). (B) 1 µg of Mouse Recombinant IL-12 was resolved with SDS-PAGE under reducing (+) non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse Recombinant IL-12 is a heterodimer comprising one p40 subunit and one p35 subunit. The total predicted molecular mass is 57.5 kDa but migrates to an apparent molecular mass of 70 kDa.

## Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit [www.stemcell.com/cytokines](http://www.stemcell.com/cytokines) or contact us at [techsupport@stemcell.com](mailto:techsupport@stemcell.com).

## References

- Germann T & Rude E. (1995) Interleukin-12. *Int Arch Allergy Immunol* 108(2): 103–12.
- Watford WT et al. (2003) The biology of IL-12: coordinating innate and adaptive immune responses. *Cytokine Growth Factor Rev* 14(5): 361–8.

PRODUCTS ARE FOR RESEARCH USE ONLY AND NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES UNLESS OTHERWISE STATED.

Copyright © 2020 by STEMCELL Technologies Inc. All rights reserved including graphics and images. STEMCELL Technologies & Design, STEMCELL Shield Design, and Scientists Helping Scientists are trademarks of STEMCELL Technologies Canada Inc. HEK-Blue is a trademark of InvivoGen. All other trademarks are the property of their respective holders. While STEMCELL has made all reasonable efforts to ensure that the information provided by STEMCELL and its suppliers is correct, it makes no warranties or representations as to the accuracy or completeness of such information.