

Cytokines

Mouse Recombinant IL-12



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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- γ . 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- γ (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- γ 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 RGSCLPQKT 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 DY EKYSVSCQ EDVTOPTAEE TLP IELALEA RQQNKYENYS TSFFIRDIK PDPPKNLQMK PLKNSQVEVS WEYPDSWSTP HSYFSLKFFV RIQRKKEKMK ETEEGCNQKG AFLVEKTSTE VQCKGGNVCV QAQDRYYNSS CSKWACVPCR VRS

Predicted Molecular Mass: 57.5 kDa

Species: Mouse

Cross Reactivity: Human

Formulation: Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate and sodium chloride, pH 7.5.

Source: HEK293

Specifications

Activity: 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 ≤ 1 EU/ μ g protein.

Preparation and Storage

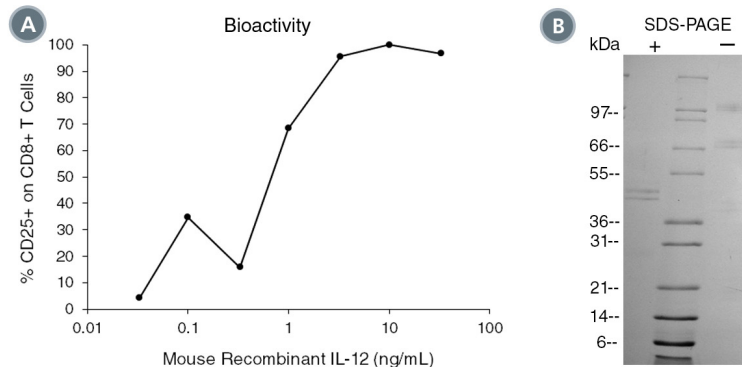
Storage: Store at -20°C to -80°C .

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 $2 - 8^{\circ}\text{C}$ 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 CD25 expression on mouse spleen CD8+ T cells. Expression of CD25 on CD8+ T cells was measured after 72 hours of culture using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which expression of CD25 is at 50% of maximum. The EC50 in the above example is 1 - 1.8 ng/mL.

(B) 1 μ g 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 comprised of 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 or contact us at techsupport@stemcell.com.

References

- Germann T & Rude 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.

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