

Cytokines

Human Recombinant IL-12



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Catalog # 78027.1
78027

5 µg
25 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: CTL maturation factor, Cytotoxic lymphocyte maturation factor, IL-12p70, Interleukin-12, Natural killer cells stimulator factor, NKSF

Accession Number: p35 Subunit: P29459
p40 Subunit: P29460

Amino Acid Sequence: p35 Subunit: RNLPVATPDP GMFPC LHHSQ NLLRAVSNML QKARQTLEFY PCTSEIIDHE DITKDKTSTV
EACLPLELTK NESCLNSRET SFITNGSCLA SRKTSFMMAL CLSSIEDLK MYQVEFKTMN AKLLMDPKRQ
IFLDQNMLAV IDELMQALNF NSETVPQKSS LEEPDFYKTK IKLCILLHAF RIRAVTIDRV MSYLNAS

p40 Subunit: IWELKKDVYV VELDWPDPAD GEMVLTCDT PEEDGITWTL DQSSEVLGSG KTLTIQVKEF
GDAGQYTCHK GGEVLSHSL LLHKKEDGIW STDILKDQKE PKNKTFLRCE AKNYSGRFTC WWLTTISTDL
TFSVKSSRGS SDPQGVTCGA ATLSAERVGR DNKEYEYSVE CQEDSACPAE EESLPIEVMV DAVHKLKYEN
YTSSFFIRDI IKPDPPKNLQ LKPLKNSRQV EVSWEYPDTW STPHSYFSLT FCVQVQGKSK REKKDRVFTD
KTSATVICRK NASISVRAQD RYYSSSWSEW ASVPCS

Predicted Molecular Mass: p35 Subunit: 22.5 kDa; p40 Subunit: 34.7 kDa

Species: Human

Cross Reactivity: Mouse, Monkey

Formulation: Lyophilized after dialysis against phosphate-buffered saline.

Source: HEK293

Specifications

Activity: The specific activity is $\geq 5 \times 10^5$ units/mg ($EC_{50} \leq 2$ ng/mL) as determined by the induction of IFN-γ from NK cells co-stimulated with IL-18.

Purity: $\geq 95\%$

Endotoxin Level: Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

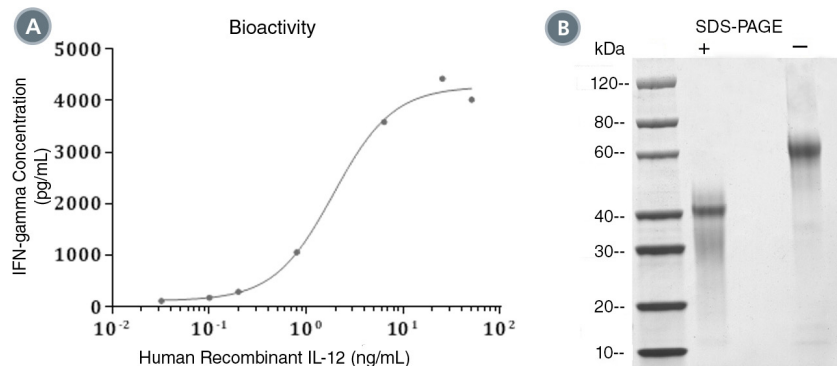
Preparation and Storage

Storage: Store at -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. As a general guide, do not store at 2 - 8°C for more than 1 week or at -20°C for more than 2 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant IL-12 was tested by its ability to produce IFN-gamma in NK cells co-stimulated with IL-18. The EC50 is defined as the effective concentration of the growth factor at which IFN-gamma production is at 50% of maximum. The EC50 in the above example is less than 2 ng/mL.

(B) 2 µg of Human Recombinant IL-12 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IL-12 has a predicted molecular mass of 57.2 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 & Rüde 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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