

Human IL-12 (IL12A & IL12B Heterodimer) Protein

Catalog Number: CT011-H08H



Sino Biological Inc.

Biological Solution Specialist

General Information

Gene Name Synonym:

Interleukin-12

Protein Construction:

A DNA sequence encoding the p35 subunit of human IL-12, termed as IL12A (NP_000873.2) (Met 1-Ser 219) was fused with a polyhistidine tag at the C-terminus, constructed the plasmid 1 ; A DNA sequence encoding the p40 subunit of human IL-12, termed as IL12B (NP_002178.2) (Met 1-Ser 328) was fused with a polyhistidine tag at the C-terminus, constructed the plasmid 2. The two plasmids were co-expressed and the heterodimer was purified.

Source: Human

Expression Host: Human Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio-Activity

1. Measured by its ability to bind biotinylated recombinant human IL12RB1 in a functional ELISA.

2. Measured in a cell proliferation assay using Anti-CD28 and Anti-CD3-stimulated PBMC.

The ED50 for this effect is typically 0.1-0.6 ng/mL.

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Arg 23 & Ile 23

Molecular Mass:

The recombinant IL12 heterodimer of human IL12A/IL12B comprises 525 (208 + 317) amino acids and has a calculated molecular mass of 60.2 (24 + 36.2) kDa. The apparent molecular mass of rh IL12 heterodimer is approximately 40 & 43 kDa respectively in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose and mannitol are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

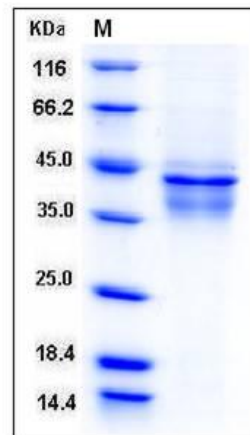
Usage Guide

Storage:

Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

SDS-PAGE:



Reconstitution:

Detailed reconstitution instructions are sent along with the products.

Protein Description

Interleukin-12 (IL-12), also known as natural killer cell stimulatory factor (NKSF) or cytotoxic lymphocyte maturation factor (CLMF), is a 70 kDa disulfide-linked heterodimeric cytokine composed of a 35-kD subunit P35 and a 40-kD subunit P40, also designated as IL-12A (Interleukin-12 subunit alpha) and IL-12B (Interleukin-12 subunit beta). IL-12 is predominantly produced by macrophages and B lymphocytes and plays an important role in the activities of natural killer cells and T lymphocytes. IL-12 is involved in the differentiation and development of Th1 cells, enhancement of natural killer cytolytic function and mitogenic effects, as well as induction of IFN-gamma during which it can synergize with other IFN-gamma inducers. The most powerful inducers of IL-12 production are bacteria, bacterial products and parasites. IL-12A shows significant sequence similarity to IL-6, G-CSF, and exerts biological activities only when the IL-12B is co-expressed. IL-12B deficient mice are resistant to the induction of experimental chronic inflammatory diseases whereas IL-12A knock-out mice develop more severe forms, suggesting opposite functions of the two subunits in the outcome of chronic inflammatory diseases.

References

1. Sieburth, D. et al., 1992, Genomics. 14: 59-62.
2. Gearing, D.P. et al., 1991, Cell. 66: 9-10.
3. Thierfelder, W.E. et al., 1996, Nature. 382: 171-174.
4. Chehimi, J. et al., 1993, Eur. J. Immunol. 23: 1826-1830.
5. Kim, J.H. et al., 1997, Clin. Exp. Immunol. 108: 243-250.

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