Animal-Free IL-12 alpha Protein, Mouse (His)

Cat. No.:	HY-P700190AF
Synonyms:	Interleukin-12 subunit alpha; IL-12 subunit p35; IL-12A; Cytotoxic Lymphocyte Maturation Factor 35 kDa
Species:	Mouse
Source:	E. coli
Accession:	P43431 (R23-A215)
Gene ID:	16159
Molecular Weight:	Approximately 22.65 kDa

PROPERTIES

AA Sequence	M R V I P V S G P A R C L S Q S R N L L K T T D D M V K T A R E K L K H Y S C T A E D I D H E D I T R D Q T S T L K T C L P L E L H K N E S C L A T R E T S S T T R G S C L P P Q K T S L M M T L C L G S I Y E D L K M Y Q T E F Q A I N A A L Q N H N H Q Q I I L D K G M L V A I D E L M Q S L N H N G E T L R Q K P P V G E A D P Y R V K M K L C I L L H A F S T R V V T I N R V M G Y L S S A
Biological Activity	Measure by its ability to induce proliferation in T-cell enriched PBMC. The ED_{50} for this effect is <0.2 ng/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a solution containing 1X PBS, pH 7.4.
Endotoxin Level	<0.1 EU per 1 μg of the protein by the LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The IL-12 alpha Protein is capable of heterodimerizing with IL12B to form the IL-12 cytokine or with EBI3/IL27B to form the IL-35 cytokine. IL-12 is predominantly produced by professional antigen-presenting cells such as B-cells, dendritic cells, macrophages, and granulocytes. It plays a crucial role in regulating T-cell and natural killer-cell responses, inducing interferon-gamma (IFN-gamma) production, promoting the differentiation of T-helper 1 (Th1) cells, and bridging innate resistance with adaptive immunity. The IL-12 receptor, composed of IL12R1 and IL12R2 subunits, mediates the biological effects of IL-12 by initiating the tyrosine phosphorylation of cellular substrates, including TYK2 and JAK2 kinases. The

recruited phosphorylated STAT4 translocates to the nucleus, where it regulates the expression of cytokine and growth factor responsive genes. As part of IL-35, IL-12 alpha Protein plays vital roles in maintaining immune homeostasis in the liver microenvironment and serves as an immune-suppressive cytokine. Signaling occurs through unconventional receptors composed of IL12RB2 and gp130/IL6ST heterodimers or homodimers, requiring the involvement of transcription factors STAT1 and STAT4. The formation of a unique heterodimer between STAT1 and STAT4 enables binding to specific DNA sites. The IL-12 alpha Protein can form disulfide-linked heterodimers with IL12B, known as interleukin IL-12, and non-disulfide-linked heterodimers with EBI3/IL27B, known as interleukin IL-35. Additionally, it interacts with NBR1, promoting IL-12 secretion.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA