IL-12 Protein, Human (Biotinylated, HEK293, His-Avi)

Cat. No.:	HY-P77702
Synonyms:	CLMF; CLMF2; IL-12A; IL-12B; IL12; IL12 p70; IMD28; IMD29; NFSK; NKSF1; NKSF2; P35; IL-12 subunit p35; IL12A; interleukin 12
Species:	Human
Source:	HEK293
Accession:	P29459 (R23-S219) & P29460 (I23-S328)
Gene ID:	3592&3593
Molecular Weight:	Approximately 40-45 kDa

PROPERTIES

Biological Activity	Immobilized Anti-IL-12 Antibody, hFc Tag at 1μg/ml (100μl/well) on the plate. Dose response curve for Biotinylated Human IL-12, His Tag with the EC_{50} of 13.0ng/ml determined by ELISA.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4. Normally 5% trehalose is added as protectant before lyophilization.
Endotoxin Level	<1 EU/μg, determined by 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	IL-35 Protein plays a pivotal role in immune regulation, exhibiting versatility in its functions. It heterodimerizes with IL12B to form the IL-12 cytokine or with EBI3/IL27B to create the IL-35 cytokine. IL-12, primarily produced by professional antigen-presenting cells such as B-cells, dendritic cells, macrophages, and granulocytes, serves as a crucial link between innate resistance and adaptive immunity, regulating T-cell and natural killer-cell responses while inducing interferon-gamma production and favoring the differentiation of T-helper 1 cells. Mechanistically, IL-12 exerts its effects through a receptor composed of IL12R1 and IL12R2 subunits, leading to tyrosine phosphorylation of cellular substrates and subsequent regulation of cytokine/growth factor responsive genes by recruited phosphorylated STAT4. In the context of IL-35, IL-35 contributes significantly to maintaining immune homeostasis in the liver microenvironment and functions as an immune-suppressive cytokine. Notably, IL-35 mediates its effects through unconventional receptors composed of IL12RB2 and gp130/IL6ST heterodimers or homodimers, requiring the transcription factors STAT1 and STAT4 for signaling. Additionally, IL-35 interacts with NBR1, promoting IL-12 secretion. The IL-35 heterodimer with EBI3/IL27B, known as interleukin IL-35, is not disulfide-linked, distinguishing it from the disulfide-linked IL-12 heterodimer with IL12B.

Caution: Product has not been fully validated for medical applications. For research use only.

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