

## IL-12 Protein, Mouse (HEK293, Fc)

<b>Cat. No.:</b>	HY-P73157
<b>Synonyms:</b>	IL-12; Interleukin 12; Interleukin-12 subunit alpha; IL-12A; Cytotoxic lymphocyte maturation factor 35 kDa subunit; CLMF p35; IL-12 subunit p35; Interleukin-12 subunit beta; IL-12B; Cytotoxic lymphocyte maturation factor 40 kDa subunit; CLMF p40; IL-12 subunit p40
<b>Species:</b>	Mouse
<b>Source:</b>	HEK293
<b>Accession:</b>	P43431 (R23-A215) & P43432 (M23-S335)
<b>Gene ID:</b>	16159&16160
<b>Molecular Weight:</b>	Approximately 55&75 kDa

### PROPERTIES

<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

#### Background

Interleukin-12 subunit alpha (IL-12A; IL-12p35), an immune-suppressive cytokine, encodes a subunit of the cytokine IL-12 that acts on T and natural killer cells, and has a broad array of biological activities. IL-12A is a disulfide-linked heterodimer composed of the 35-kD subunit encoded by this gene, and a 40-kD subunit that is a member of the cytokine receptor family. IL-12 is primarily produced by professional antigen-presenting cells (APCs) such as B-cells and dendritic cells (DCs) as well as macrophages and granulocytes, induces the production of IFN-gamma, favors the differentiation of Th1 cells and is an important link between innate resistance and adaptive immunity<sup>[1][2]</sup>.

The amino acid sequence of human IL-12A protein has low homology between mouse IL-12A protein. While, human IL-12A shares 94% aa sequence identity with Rhesus Macaque IL-12A protein.

IL-12 family cytokines are pleiotropic immunological playmakers that coordinate innate and adaptive immune responses mainly via regulation of T-cell populations. The four core members of the Interleukin-12 (IL-12) family of cytokines, IL-12, IL-23, IL-27 and IL-35 are heterodimers which share α-cytokine subunits (IL-12p35 (IL-12A), IL-23p19, and IL-27p28) and β-cytokine subunits (IL-12p40, Ebi3). The subunits are each encoded by separate chromosomes and their expression is regulated independently. Among them, the IL-12A subunit has immunoregulatory functions hitherto attributed to IL-35. Pairing of the α-subunits, IL-12A or IL-23p19 with IL-12p40, gives rise to the two pro-inflammatory members IL-12 and IL-23,

---

respectively, whereas the two immunosuppressive members of the family, IL-27 and IL-35, derive from pairing of IL-27p28 or IL-12A with Ebi3<sup>[1][2]</sup>.

IL-12A suppresses lymphocyte proliferation, induces expansion of IL-10-expressing and IL-35-expressing B cells and ameliorates autoimmune uveitis in mice by antagonizing pathogenic Th17 responses. IL-12A-mediated expansion of Treg and Breg cells and its amelioration of experimental autoimmune encephalomyelitis (EAE) correlated with inhibition of cytokine-induced activation of STAT1/STAT3 pathways. IL-12A may be utilized for in vivo expansion of Tregs and Bregs cells and autologous Tregs and Bregs cell immunotherapy<sup>[1][2]</sup>.

---

## REFERENCES

---

[1]. Ivy M Dambuza, et al. IL-12p35 induces expansion of IL-10 and IL-35-expressing regulatory B cells and ameliorates autoimmune disease. Nat Commun. 2017 Sep 28;8(1):719.

[2]. Jin Kyeong Choi, et al. IL-12p35 Inhibits Neuroinflammation and Ameliorates Autoimmune Encephalomyelitis. Front Immunol. 2017 Oct 5;8:1258.

---

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

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