

## IL-12A Protein, Human, Recombinant (His)

### General Information

Synonyms: NKSF1;P35;NFSK;IL-12A;interleukin 12A;CLMF

Protein Construction: A DNA sequence encoding the p35 subunit of human IL12, termed as IL12A (P29459) (Met 1-Ser 219) was expressed, fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Arg 23

Species: Human

Expression Host: HEK293 Cells

Accession: P29459

Molecular Weight: 24 kDa (predicted); 35-40 kDa (reducing condition, due to glycosylation)

### QC Testing

Biological Activity: Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.

Purity: > 92 % as determined by SDS-PAGE

Endotoxin: < 1.0 EU/μg of the protein as determined by the LAL method.

Formulation: Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

#### Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

#### Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

#### Shipping:

In general, Lyophilized powders are shipping with blue ice.

### Protein Background

Interleukin-12 subunit alpha (IL12A/IL-12p35) is also known as Cytotoxic lymphocyte maturation factor 35 kDa subunit, cytotoxic lymphocyte maturation factor 1, p35, NK cell stimulatory factor chain 1, and interleukin-12 alpha chain. IL12A/IL-12p35 is a subunit of a cytokine that acts on T and natural killer cells and has a broad array of biological activities. The cytokine 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. IL12A/IL-12p35 is required for the T-cell-independent induction of interferon (IFN)-gamma and is important for the differentiation of both Th1 and Th2 cells. The responses of lymphocytes to this cytokine are mediated by the activator of transcription protein STAT4. Nitric oxide synthase 2A (NOS2A/NOS2) is found to be required for the signaling process of this cytokine in innate immunity. In clinical, IL-12 remains a very promising immunotherapeutic agent because recent cancer vaccination studies in animal models and humans have demonstrated its powerful adjuvant properties. The immune-modulating characteristics of IL-12 considered responsible for the adjuvant effects, as well as the results of animal and human cancer vaccination studies with IL-12, applied as an adjuvant. IL12A/IL-12p35 indicates a cytokine that is important in the development of prostate cancer.

Reference

Sattler HP,et al. (2000) Novel amplification unit at chromosome 3q25-q27 in human prostate cancer. *Prostate*. 45 (3): 207-15.

Lamont AG,et al. (1996) IL-12: a key cytokine in immune regulation. *Immunol Today*. 17(5): 214-7.

Portielje JE,et al. (2003) IL-12: a promising adjuvant for cancer vaccination. *Cancer Immunol Immunother*. 52(3): 133-44.

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