**DESCRIPTION**

**Source** Spodoptera frugiperda, Sf 21 (baculovirus)-derived human IL-12/IL-23 p40 protein

Ile23-Ser328

Accession # P29460

**N-terminal Sequence Analysis**

Ile23

**Predicted Molecular Mass** 34.7 kDa

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**SPECIFICATIONS**

**SDS-PAGE** 40 kDa, reducing conditions

**Activity** Measured by its binding ability in a functional ELISA.

When Recombinant Human IL-12 Rβ1 Fc Chimera (Catalog # 839-B1) is immobilized at 1 µg/mL (100 µL/well), the concentration of Recombinant Human IL-12/IL-23 p40 Monomer that produces 50% of the optimal binding response is 1-6 ng/mL.

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >90%, by SDS-PAGE under reducing conditions and visualized by silver stain.

**Formulation** Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

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**PREPARATION AND STORAGE**

**Reconstitution** Reconstitute at 100 µg/mL in sterile PBS.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

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**DATA**

**Binding Activity**

When Recombinant Human IL-12 Rβ1 Fc Chimera
(Catalog # 839-B1) is immobilized at 1 µg/mL
(100 µL/well), Recombinant Human IL-12/IL-23 p40 Monomer
(Catalog # 309-IL) binds with an $ED_{50}$ of 1-6 ng/mL.

Recombinant Human IL-12/IL-23 p40 (ng/mL)

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**BACKGROUND**

Interleukin 12, also known as natural killer cell stimulatory factor (NKSF) or cytotoxic lymphocyte maturation factor (CLMF), is a pleiotropic cytokine originally identified in the medium of activated human B lymphoblastoid cell lines. IL-12 is produced by macrophages and B lymphocytes and has multiple effects on T cells and NK cells, including stimulation of cytotoxic activity, proliferation, and promotion of Th1 development as well as IFN-γ and TNF production. IL-12 is a disulfide-linked, 70 kDa (p70) heterodimeric glycoprotein composed of a 40 kDa (p40) subunit and a 35 kDa (p35) subunit. The p40 and p35 subunits by themselves have no IL-12 activity, the p40 dimer has been shown to bind the IL-12 receptor and to be an IL-12 antagonist. Free p35 has not been detected in supernatant solutions of cultured cells expressing only p35 or both p35 and p40 mRNAs. In contrast, p40 is secreted in excess of IL-12 in cells expressing both p35 and p40 mRNAs. The p40 subunit of IL-12 has been shown to have extensive amino acid sequence homology to the extracellular domain of the human IL-6 receptor while the p35 subunit shows distant but significant sequence similarity to IL-6, G-CSF, and chicken MGF. These observations have led to the suggestion that IL-12 might have evolved from a cytokine/soluble receptor complex. Human and mouse IL-12 share 70% and 60% amino acid sequence homology in their p40 and p35 subunits, respectively. IL-12 apparently shows species specificity with human IL-12 reportedly showing minimal activity in the murine system.