Recombinant Mouse IL-12 (linked heterodimer)

Catalog Number: 10051-ML

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived mouse IL-12 protein

Mouse IL-12 p40 (Met23-Ser335) Accession # P43432	GGGGSGGGGSGGGGS	Mouse IL-12 p35 (Arg23-Ala215) Accession # P43431

N-terminus C-terminus

N-terminal Sequence Analysis	Met23
Structure / Form	GS-linked heterodimer
Predicted Molecular Mass	58 kDa

SPECIFICATIONS

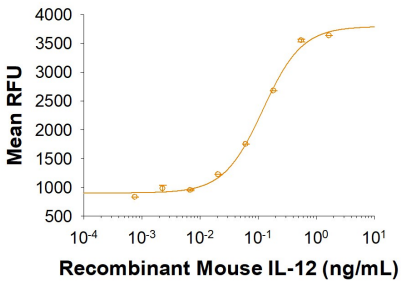
SDS-PAGE	62-82 kDa, reducing conditions
Activity	Measured in a cell proliferation assay using PHA-activated mouse splenocytes. Mattner, F. *et al.* (1993) Eur. J. Immunol. **23**:2202. The ED_{50} for this effect is 0.01-0.1 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in 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 °C under sterile conditions after reconstitution.

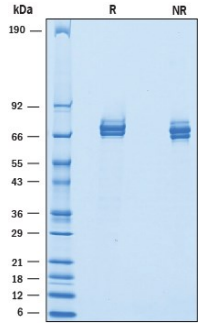
DATA

Bioactivity



Recombinant Mouse IL-12 stimulates cell proliferation of PHA-activated mouse splenocytes. The ED_{50} for this effect is 0.01-0.1 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Mouse IL-12 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 62-82 kDa.

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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 B lymphoblastoid cell lines (1). The p40 subunit of IL-12 has been shown to have extensive amino acid sequence homology to the extracellular domain of the IL-6 receptor while the p35 subunit shows distant but significant sequence similarity to IL-6, G-CSF, and chicken MGF (2, 3). These observations have led to the suggestion that IL-12 might have evolved from a cytokine/soluble receptor complex. Murine and human 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. IL-12 is produced by macrophages and B lymphocytes and has been shown to have multiple effects on T cells and natural killer (NK) cells (4). These effects include inducing production of IFN-gamma and TNF by resting and activated T and NK cells, synergizing with other IFN-gamma inducers at both the transcriptional and post-transcriptional levels. This interaction induces IFN-gamma gene expression, enhancing the cytotoxic activity of resting NK and T cells, inducing and synergizing with IL-2 in the generation of lymphokine-activated killer (LAK) cells, acting as a co-mitogen to stimulate proliferation of resting T cells, and inducing proliferation of activated T and NK cells (5). Current evidence indicates that IL-12, produced by macrophages in response to infectious agents, is a central mediator of the cell-mediated immune response by its actions on the development, proliferation, and activities of TH1 cells. In its role as the initiator of cell-mediated immunity, it has been suggested that IL-12 has therapeutic potential as a stimulator of cell-mediated immune responses to microbial pathogens, metastatic cancers, and viral infections such as AIDS.

References:

1. Gubler, U. *et al.* (1991) Proc. Natl. Acad. Sci. **88**:4143.
2. Gearing, D. *et al.* (1991) Cell **66**:9.
3. Merberg, D. *et al.* (1992) Immunology Today **13**:78.
4. Wolf, S.F. *et al.* (1991) Journal of Immunology **146**:3074.
5. Airoldi, I. *et al.* (2000) Journal of Immunology **165**:6880.

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