Recombinant Rhesus Macaque IL-12

Catalog Number: 3216-RL/CF

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived

Rhesus Macaque IL-12 (p40) (Ile23 – Ser328) Accession # P48095	6-His tag
Rhesus Macaque IL-12 (p35) (Arg57 – Ser253) Accession # NP_001038199	6-His tag

N-terminus C-terminus

N-terminal Sequence Analysis	Ile23 (p40) & Arg57 (p35)
Structure / Form	Disulfide-linked heterodimer
Predicted Molecular Mass	35.6 kDa (p40), 23.4 kDa (p35)

SPECIFICATIONS

SDS-PAGE	40-45 kDa and 36-37 kDa, reducing conditions
Activity	Measured in a cell proliferation assay using PHA-stimulated human T lymphoblasts. Symons, J.A. *et al.* (1987) in Lymphokines and Interferons, a Practical Approach. Clemens, M.J. *et al.* (eds): IRL Press. 272. The ED_{50} for this effect is 0.07-0.3 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. See Certificate of Analysis for details.

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.

BACKGROUND

Interleukin 12 (IL-12) is a 70 - 75 kDa heterodimeric glycoprotein that belongs to the IL-12 family of cytokines (1 - 3). Monkey IL-12 consists of two disulfide-linked subunits which are 35 kDa and 40 kDa in size. They show no meaningful amino acid (aa) similarity (4). The mature 35 kDa subunit (p35; also IL-12A) is an α-helix, 197 aa in length, that contains seven cysteines and two potential N-linked glycosylation sites (4). Mature Rhesus monkey p35 is 94%, 98%, 97%, 57%, 81%, and 82% aa identical to human, mangabey, baboon, mouse, equine and porcine mature p35, respectively. The mature 40 kDa subunit (p40; alsoIL-12B) is 306 aa in length and contains one intrachain disulfide bond plus three potential N-linked glycosylation sites. Mature Rhesus p40 is 96%, 97%, 99%, 67%, 85%, and 80% aa identical to human, mangabey, baboon, mouse, equine, and porcine p40, respectively. While p35 is reminescent of a hematopoietin ligand, p40 strongly resembles the N-terminus of a hematopoietin receptor, exhibiting a WSXWS motif, an immunoglobulin-like domain, and one fibronectin type III domain (5). This has led to the suggestion that IL-12 may be a cytokine-receptor analog to the IL-6/soluble IL-6R complex (6 - 8). Notably, while p40 may circulate as a monomer or homodimer, p35 is never found by itself. Cells known to produce IL-12 include macrophages and dendritic cells, monocytes, Langerhans cells, neutrophils, and keratinocytes. Functionally, IL-12 has been shown to both enhance cytotoxic activity and induce interferon-gamma (IFN-γ) production in NK cells and T cells. In response to infection, IL-27 is released initially, promoting a Th0 to Th0/1 transition state. IL-12 follows next, generating Th1 effector cells. With IL-18, IL-12 creates Th1 memory cells out of effector cells (1 - 3, 6, 7).

References:

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