Interleukin-9 Murine E. coli

Product Data Sheet

Type: Recombinant
Source: E. coli
Species: Murine
Other names: IL-9, MEA, P40 cytokine, P40 T-cell and mast cell growth factor, T-cell/mast cell growth factor P40, TCGF III

Cat. No.:

RBG20009002	(2 µg)
RBG20009010	(10 µg)
RBG20009100	(100 µg)

Description

IL-9 is an immunoregulatory cytokine produced by IL-2 activated Th2 lymphocytes. IL-9 enhances the proliferation of T lymphocytes, mast cells, erythroid precursor cells and megakaryoblastic leukemia cell lines. Over-expression of IL-9 has been implicated in the pathogenesis of anaplastic lymphoma and Hodgkin's disease. Whereas murine IL-9 can function on human cells, human IL-9 is inactive on mouse cells. Recombinant Murine IL-9 is a 14.3 kDa protein of 127 amino acid residues, including 10 cysteine residues that are fully conserved between the human murine proteins.

Introduction to the Molecule

Interleukin-9 (IL-9) is a proinflammatory cytokine historically believed to be involved in type 2 immune responses. However, recent evidence suggests IL-9 may be secreted by other T Helper lineages such as Treg and Th17 in addition to a new category called Th9. This Th9 lineage can either be derived from Th2 cells with TGF beta or differentiated directly from naïve CD4+ T cells with TGF beta and IL-4. The IL-9 expression in subsets such as Treg and Th17 illustrates the plasticity of cells to reprogram to alternative fates. IL-9 is a member of the common cytokine receptor gamma chain-dependent family of cytokines which also includes IL-2, IL-4, IL-7, IL-15 and IL-21. IL-9 is an extensively glycosylated protein of 14 kDa containing ten cysteine residues involved in disulfide bonding. The human gene maps to chromosome 5q31-32 which is a chromosomal region sometimes deleted in patients with myelodysplastic syndrome. Its pleiotropic effects on Th2 lymphocytes, B lymphocytes, mast cells, eosinophils, IgE production and gut and airway epithelial cells have implicated IL-9 in asthma and other allergy-related disorders. The existence of an IL-9- mediated autocrine loop has been suggested for some malignancies such as Hodgkin's disease and large cell anaplastic lymphoma for Hodgkin's cell lines. IL-9 is expressed by Reed-Sternberg cells and Hodgkin lymphoma cells and some large aplastic lymphoma cells, while non-Hodgkin lymphomas and peripheral T-cell lymphomas do not express it

Research topic

Cytokines and chemokines and related molecules

Amino Acid Sequence

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MQRCSTTWGI RDTNYLIENL KDDPPSKCSC SGNVTSCLCL SVPTDDCTTP CYREGLLQLT NATQKSRLLP VFHRVKRIVE
VLKNITCPSF SCEKPCNQTM AGNTMSFLKS LLGTFQKTEM QRQKSRP
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Source

E. coli

Purity

98%

Biological Activity

The ED_{50} as determined by the dose-dependent proliferation of human MO7e cells is < 0.5 ng/ml, corresponding to a specific activity of > 2×10^6 units/mg.

Endotoxin

Endotoxin level is <0.1 ng/µg of protein (<1EU/µg).

Reconstitution

Centrifuge the vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. Do not vortex. This solution can be stored at 2-8°C for up to 1 week. For extended storage, it is recommended to further dilute in a buffer containing a carrier

protein (example 0.1% BSA) and store in working aliquots at -20°C to -80°C.

Storage, Stability/Shelf Life

-20°C

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