

Interleukin-9 Human E. coli

Product Data Sheet

Type: Recombinant	Cat. No.:	
Source: E. coli	RBG10009002	(2 µg)
Species: Human	RBG10009010	(10 µg)
Other names: IL-9, MEA, P40 cytokine, P40 T-cell and mast cell growth factor, T-cell/mast cell growth factor P40, TCGF III	RBG10009100	(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 Human IL-9 is a 14.0 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

MQGCPTLAGI LDINFLINKM QEDPASKCHC SANVTSCCLL GIPSDNCTRP CFSERLSQMT NTTMQTRYPL IFSRVKKSVE
VLKNNKCPYF SCEQPCNQTT AGNALTFLLKS LLEIFQKEKM RGMRGKI

Source

E. coli

Purity

98%

Biological Activity

The ED₅₀ as determined by the dose-dependent proliferation of human M07e cells was ? 0.2 ng/ml, corresponding to a specific activity of ? 5×10⁶ 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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