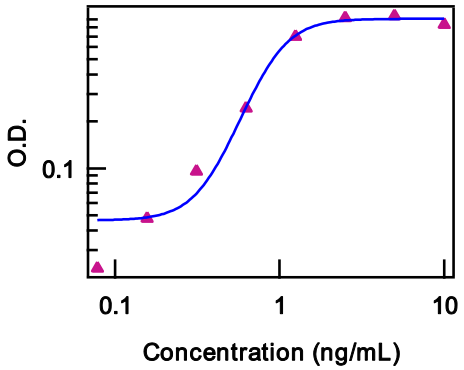
Mouse IL-9 Recombinant Protein Carrier-Free

Catalog Number: 34-8952
RUO: For Research Use Only. Not for use in diagnostic procedures.



Proliferation of the TS-1 cell line in response to Mouse IL-9 Recombinant Protein Carrier-Free

Product Information

Contents: Mouse IL-9 Recombinant Protein Carrier-Free
REF **Catalog Number:** 34-8952
Concentration: 0.5 mg/mL
Handling Conditions: For best recovery, always quick-spin vial prior to opening. For dilution of current stock, always include carrier protein (1% BSA or 10% FBS) in the buffered saline diluent.
Source: Insect-derived amino acids Met1-Pro144, accession number NM_008373
Molecular Mass: 14 kDa
Purity: > 97%, as determined by SDS-PAGE
Endotoxin: Less than 0.01 ng/ug cytokine as determined by the LAL assay.
Bioactivity: The ED50 of this protein, as determined by TS-1 proliferation assay, is less than or equal to 2 ng/mL. This corresponds to a specific activity of greater than or equal to 5 x 10e5 Units/mg.

Formulation: Sterile liquid: phosphate buffered saline, pH 7.2. 0.22 um filtered.
Temperature Limitation: For greatest stability, keep concentration of primary stock at or above 10 µg/ml. For long term storage, aliquot into polypropylene vials (volumes of 20 µl or greater) and store at or below -80°C. Avoid repeated freeze/thaw cycles.
LOT **Batch Code:** Refer to vial
Use By: Refer to vial

Description

Interleukin-9 (IL-9) is a 14 kDa cytokine originally named P40 and identified by its proliferative effects on T cell populations. The receptor, which is a heterodimer of the γ chain portion of the IL-2 receptor and the IL-9R chain, activates Jak/STAT signaling pathways upon binding its ligand. Since the discovery of IL-9, numerous other functions have been observed. It induces Th17 and T_{reg} differentiation in $CD4^+$ T cells, IgE production in B cells, and the differentiation and proliferation of mast cells. IL-9 expression was initially observed in Th2 cells, but has since been found in Th17, eosinophil, and mast cells. Th9 cells, a newly discovered subset of $CD4^+$ T cells, are characterized by the secretion of large amounts of IL-9 and IL-10. These cells are derived from Th2 cells reprogrammed by the presence of TGFβ, making IL-9 the probable mechanism by which TGFβ drives Th17 and T_{reg} differentiation.

Mouse and human IL-9 share 69% sequence homology at the nucleotide level and 57% at the protein level. Although mouse IL-9 exhibits cross-species activity, human IL-9 is species-specific.

Applications Reported

Recombinant mouse IL-9 is biologically active.

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Applications Tested
The ED_{50} of this protein, as determined by TS-1 proliferation assay, is less than or equal to 2 ng/ml. This corresponds to a specific activity of greater than or equal to 5 x 10^5 Units/mg.

References
Cheng G, Arima M, Honda K, Hirata H, Eda F, Yoshida N, Fukushima F, Ishii Y, Fukuda T. Anti-interleukin-9 antibody treatment inhibits airway inflammation and hyperreactivity in mouse asthma model. Am J Respir Crit Care Med. 2002 Aug 11; 166(3): 406-16.

Elvaman W, Bradshaw EM, Uyttenhove C, Dardalhon V, Awasthi A, Imitola J, Bettelli E, Oukka M, Van Snick J, Renauld JC, Kuchroo VK, Khoury SJ. IL-9 induces differentiation of Th17 cells and enhances function of FoxP3+ natural regulatory T cells. Proc Natl Acad Sci USA. 2009 Aug 4; 106(31): 12885-90.

Renauld JC, Kermouni A, Vink A, Louahed J, Van Snick J. Interleukin-9 and its receptor: involvement in mast cell differentiation and T cell oncogenesis. J Leukoc Biol. 1995 Mar; 57(3): 353-60.

Related Products
12-7098 Anti-Human IL-9 PE (MH9D1)
14-8958 Human IL-9 Recombinant Protein
51-7097 Anti-Human IL-9 Alexa Fluor® 647 (To Be Discontinued. Refer to Replacement Format eFluor® 660, cat. 50-7097) (MH9A4)

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