

# Active Recombinant Mouse IL9 Protein (Met1-Pro144), His-tagged

Cat. No. IL9-858M    Lot. No. (See product label)

## SPECIFICATION

**Product Overview**      Recombinant Mouse IL9 Protein (NP\_032399.1) (Met1-Pro144) was produced by Baculovirus-Insect Cells expression system. This protein was expressed with a polyhistidine tag at the C-terminus.

**Species**      Mouse

**Source**      Insect Cells

**ProteinLength**      Met1-Pro144

**Description**      Interleukin 9, also known as IL-9, is a cytokine (cell signalling molecule) belonging to the group of interleukins. IL-9 is a cytokine that acts as a regulator of a variety of hematopoietic cells. This cytokine stimulates cell proliferation and prevents apoptosis. It functions through the interleukin 9 receptor (IL-9R), which activates different signal transducer and activator (STAT) proteins and thus connects this cytokine to various biological processes. Genetic studies on a mouse model of asthma demonstrated that this cytokine is a determining factor in the pathogenesis of bronchial hyperresponsiveness. IL-9 is a key molecule that affects differentiation of TH17 cells and Treg function. IL-9 predominantly produced by TH17 cells, synergizes with TGF- $\beta$ 1 to differentiate naïve CD4+ T cells into TH17 cells, while IL-9 secretion by TH17 cells is regulated by IL-23. Interestingly, IL-9 enhances the suppressive functions of FoxP3+ CD4+ Treg cells in vitro, and absence of IL-9 signaling weakens the suppressive activity of nTregs in vivo, leading to an increase in effector cells and

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worsening of experimental autoimmune encephalomyelitis. The mechanism of IL-9 effects on TH17 and Tregs is through activation of STAT3 and STAT5 signaling. Our findings highlight a role of IL-9 as a regulator of pathogenic versus protective mechanisms of immune responses.

<b>Predicted N Terminal</b>	Gln 19
<b>Form</b>	Lyophilized from sterile 50 mM Tris, 150 mM NaCl, pH 8.0, 10 % glycerol. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization.
<b>Bio-activity</b>	Measured in a cell proliferation assay using MC/9-2 mouse mast cells. The ED50 for this effect is typically 0.5-2ng/mL.
<b>Molecular Mass</b>	The recombinant mouse IL9 consists of 137 amino acids and predicts a molecular mass of 15.6 kDa.
<b>Endotoxin</b>	< 1.0 EU per µg protein as determined by the LAL method.
<b>Purity</b>	> 95 % as determined by SDS-PAGE.
<b>Stability</b>	Samples are stable for up to twelve months from date of receipt at -70 centigrade.
<b>Storage</b>	Store it under sterile conditions at -20 centigrade to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
<b>Reconstitution</b>	It is recommended that sterile water be added to the vial to prepare a stock solution of 0.2 mg/ml. Centrifuge the vial at 4°C before opening to recover the entire contents.

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**Shipping**

In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature.

Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

**GENE INFORMATION**

<b>Gene Name</b>	IL9 interleukin 9 [ <i>Mus musculus</i> ]
<b>Official Symbol</b>	IL9
<b>Synonyms</b>	IL9; interleukin 9; interleukin-9; cytokine P40; P40; IL-9;
<b>Gene ID</b>	16198
<b>mRNA Refseq</b>	NM_008373
<b>Protein Refseq</b>	NP_032399
<b>UniProt ID</b>	P15247

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