Animal-Free IL-9 Protein, Mouse (His)

Cat. No.:	HY-P700218AF
Synonyms:	rMuIL-9; Cytokine P40; T-cell Growth Factor P40
Species:	Mouse
Source:	E. coli
Accession:	P15247 (Q19-P144)
Gene ID:	16198
Molecular Weight:	Approximately 14.97 kDa

PROPERTIES

AA Sequence	Q R C S T T W G I R D T N Y L I E N L K D D P P S K C S C S G N V T S C L C L S V P T D D C T T P C Y R E G L L Q L T N A T Q K S R L L P V F H R V K R I V E V L K N I T C P S F S C E K P C N Q T M A G N T L S F L K S L L G T F Q K T E M Q R Q K S R P
Biological Activity	Measure by its ability to induce proliferation in MO7e cells.The ED_{50} for this effect is<0.2 ng/mL.The specific activity of recombinant mouse IL9 is >5 x10^6 IU/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a solution containing 1X PBS, pH 7.4.
Endotoxin Level	<0.1 EU per 1 μg of the protein by the LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	IL-9, a multifunctional cytokine primarily secreted by T-helper 2 lymphocytes and also by mast cells or NKT cells, assumes crucial roles in the immune response against parasites. Beyond its anti-parasitic function, IL-9 influences intestinal epithelial permeability and adaptive immunity. It plays a pivotal role in inducing the differentiation of specific T-cell subsets, such as IL-17-producing helper T-cells (TH17), and promotes the proliferation and differentiation of mast cells. Mechanistically, IL-9 exerts its diverse biological effects through a receptor comprised of the IL9R subunit and the signal transducing subunit IL2RG. Stimulation of this receptor leads to rapid activation of JAK1 and JAK3 kinase activities,

initiating STAT1, STAT3, and STAT5-mediated transcriptional programs. The induction of differentiation genes appears to be mediated by STAT1 alone, while the protection of cells from apoptosis depends on the concerted actions of STAT3 and STAT5. IL-9 interacts directly with IL9R and IL2RG, orchestrating a sophisticated network of interactions to modulate immune responses and cellular processes.

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