

## Animal-Free IL-9 Protein, Human (His)

<b>Cat. No.:</b>	HY-P700134AF
<b>Synonyms:</b>	Interleukin-9; IL-9; Cytokine P40; T-Cell Growth Factor P40; IL9
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	P15248 (Q19-I144)
<b>Gene ID:</b>	3578
<b>Molecular Weight:</b>	Approximately 14.93 kDa

### PROPERTIES

<b>AA Sequence</b>	<p>           Q G C P T L A G I L    D I N F L I N K M Q    E D P A S K C H C S    A N V T S C L C L G            I P S D N C T R P C    F S E R L S Q M T N    T T M Q T R Y P L I    F S R V K K S V E V            L K N N K C P Y F S    C E Q P C N Q T T A    G N A L T F L K S L    L E I F Q K E K M R            G M R G K I         </p>
<b>Biological Activity</b>	Measure by its ability to induce proliferation in MO7e cells. The ED <sub>50</sub> for this effect is <0.25 ng/mL. The specific activity of recombinant human IL-9 is approximately >5 x10 <sup>6</sup> IU/ mg
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a solution containing 1X PBS, pH 8.0.
<b>Endotoxin Level</b>	<0.01 EU per 1 µg of the protein by the LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

<b>Background</b>	<p>IL-9 protein, a multifunctional cytokine primarily secreted by T-helper 2 lymphocytes, mast cells, or NKT cells, plays crucial roles in the immune response against parasites. Its impact extends to intestinal epithelial permeability and adaptive immunity. IL-9 further contributes to the differentiation of specific T-cell subsets, including IL-17 producing helper T-cells (TH17), and promotes the proliferation and differentiation of mast cells. Functionally, IL-9 exerts its biological effects through a receptor composed of the IL9R subunit and the signal transducing subunit IL2RG. Receptor stimulation rapidly activates JAK1 and JAK3 kinase activities, leading to STAT1, STAT3, and STAT5-mediated transcriptional programs. While</p>
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the induction of differentiation genes appears to be mediated by STAT1 alone, the protection of cells from apoptosis depends on STAT3 and STAT5. IL-9 interacts with the IL9R subunit and IL2RG, forming a molecular basis for its diverse cellular effects.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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