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# IL-9

Catalog # PVGS1543

## Product Information

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| **Primary Accession** | P15247 |
| **Species** | Mouse |
| **Sequence** | Gln19-Pro144 |
| **Purity** | > 95% as analyzed by SDS-PAGE |
| **Endotoxin Level** | |
| **Biological Activity** | $ED_{50}$ |
| **Expression System** | HEK 293 |
| **Formulation** | Lyophilized from a 0.2 μm filtered solution in PBS. |
| **Reconstitution** | It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in dd$H_2O$ or PBS up to 100 μg/ml. |
| **Storage & Stability** | Upon receiving, this product remains stable for up to 6 months at -70°C or -20°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. Avoid repeated freeze-thaw cycles. |

## Additional Information

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| **Gene ID** | 16198 |
| **Other Names** | Interleukin-9, IL-9, Cytokine P40, T-cell growth factor P40, Il9 |
| **Target Background** | Interleukin 9, also known as IL9, is a cytokine (cell signalling molecule) belonging to the group of interleukins. The protein encoded by this gene is a cytokine produced by T-cells and specifically by $CD4^+$ helper cells 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 (IL9R), which activates different signal transducer and activator (STAT) proteins and thus connects this cytokine to various biological processes. The gene encoding this cytokine has been identified as a candidate gene for asthma. Genetic studies on a mouse model of asthma demonstrated that this cytokine is a determining factor in the pathogenesis of bronchial hyperresponsiveness. |

## Protein Information

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| **Name** | Il9 |

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| **Function** | Multifunctional cytokine secreted mainly by T-helper 2 lymphocytes and also mast cells or NKT cells that plays important roles in the immune response against parasites (PubMed:11070175, PubMed:19433802). Affects intestinal epithelial permeability and adaptive immunity (PubMed:12704113). In addition, induces the differentiation of specific T-cell subsets such as IL-17 producing helper T-cells (TH17) and also proliferation and differentiation of mast cells (PubMed:11070175, PubMed:19433802). Mechanistically, exerts its biological effects through a receptor composed of IL9R subunit and a signal transducing subunit IL2RG (PubMed:2145361, PubMed:7718508). Receptor stimulation results in the rapid activation of JAK1 and JAK3 kinase activities leading to STAT1, STAT3 and STAT5-mediated transcriptional programs (PubMed:10464327). Induction of differentiation genes seems to be mediated by STAT1 alone, while protection of cells from apoptosis depends on STAT3 and STAT5 (PubMed:10464327). |
| **Cellular Location** | Secreted. |