



Genorise[®] Recombinant Canine IL-9

Catalog Number: GR122139

Background

Interleukin 9 (IL-9) is a pleiotropic cytokine (cell signaling molecule) belonging to the group of interleukins.^[1] IL-9 is produced by variety of cells like mast cells, NKT cells, Th2, Th17, Treg, ILC2, and Th9 cells in different amounts. Among them, Th9 cells are regarded as the major CD4⁺ T cells that produce IL-9. IL-9 is secreted by CD4⁺ helper cells that acts as a regulator of a variety of hematopoietic cells.^[2] Interleukin 33 (IL-33) induces IL-9 expression and secretion in T cells, which was confirmed by the results obtained in mice by using Human in vitro system.^[3] Whereas the report of others confirms that TGF- β is an essential factor for IL-9 induction.^[4] TGF- β may be important for production of IL-9 but it is not only the definite requirement for IL-9 induction, since cultures with IL-33 without TGF- β have noticeably increased secretion of IL-9, suggesting an important role of IL-33, even though that the effect was not found significant on the gene level.^[5] 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 namely STAT1, STAT3 and STAT5 and thus connects this cytokine to various biological processes.^[6] 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. Interleukin-9 has also shown to inhibit melanoma growth in mice.^[7] Additionally, it gives rise to the multiplication of hematologic neoplasia and also Hodgkin's lymphoma in humans but IL-9 also has antitumor properties in solid tumors, for example melanoma.

References

1. Kelleher K, et al. (1991). *Blood*. 77 (7): 1436–41.
2. Perumal NB, Kaplan MH (2011). *Trends in Immunology*. 32 (4): 146–50.
3. Humphreys NE, et al. (2008). *Journal of Immunology*. 180 (4): 2443–9.
4. Beriou G, et al. (2010). *Journal of Immunology*. 185 (1): 46–54.
5. Blom L, et al. (2011). *PLoS One*. 6 (7): e21695. doi:10.1371/journal.pone.0021695.
6. Purwar R, et al. (2012). *Nature Medicine*. 18 (8): 1248–53.
7. Knoop L, Renaud JC (2004). *Growth Factors*. 22 (4): 207–15.

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.

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Description

Sources: Expressed in *E. coli*.

Composition: Gln19-Val139

Accession #: A0A8I3NQB0

Molecular weight: 13 kDa

Activity: Measured in a cell proliferation assay using MO7e human megakaryocytic leukemic cells. Avanzi G et al. (1988) Br. J. Laematol 69:359.

The ED50 for this effect is typically 0.3-0.8 ng/ml.

Endotoxin level: < 1 EU per 1 µg of the protein by the LAL method.

Purity: > 95%, by SDS-PAGE under reducing conditions and visualized by silver staining.

Formulation: Lyophilized from a 0.2 µm filtered PBS solution containing BSA.

Reconstitution: Reconstitute at 50-500 µg/ml in sterile PBS and 0.05% azide and store at -20°C ~ -70°C for up to 3 months.

Shipping and storage: The product is shipped at 4 °C with ice pad or at ambient temperature.

Upon receipt, store it immediately at -20°C to avoid loss of activity and use it in 6 months.

Related products

1. GR238016 50 ml Reagent Reservoir, 100/pack, 5 bags/pack (20/bag)
2. GR238004 Tissue Culture 96-well Microplate, individually packed, Case of 50
3. GR238019 1.5 ml Microcentrifuge tube with screw cap and free-standing, pack of 500
4. GR238007 125 ml leak-resistant HDPE bottle, colorless, pack of 24
5. GR238002 Microplate 12x8-Well Strip High Binding, Case of 50
6. GR238003 Microplate 12x8-Well Strip Medium Binding, Case of 50
7. GR238032 42592 Costar Stripwell Microplate 1 x 8 Flat Bottom, High Binding, Case of 100
8. GR238001 468667 Thermo Microplate 12x8-Well Strip Nunc Maxisorp F8, Case of 60
9. GR238031 96-well microplate sealer plastic, pack of 100