Recombinant Rat IL-9 R

Catalog Number: 4896-RR/CF

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Val38-Ala270, with a C-terminal 6-His tag Accession # EDM04022
N-terminal Sequence Analysis	Val38
Predicted Molecular Mass	27.5 kDa

SPECIFICATIONS

SDS-PAGE	33-40 kDa, reducing conditions
Activity	Measured by its ability to inhibit IL-9-induced proliferation of TS1 mouse helper T cells. The ED_{50} for this effect is 0.25-1.25 µg/mL in the presence of rrIL-9 at 50 ng/mL.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

The IL-9 receptor alpha protein is a member of the type I cytokine receptor family. It is a 62 kDa IL-9 receptor subunit (previously Gfi-2, designated CD129) that binds IL-9 and pairs with the 64 kDa cytokine receptor common γ-chain to allow cell signaling (1 - 3). The 467 amino acid (aa) rat IL-9 Rα precursor is predicted to contain a 37 aa signal sequence, a 232 aa extracellular domain (ECD) with four conserved cysteine residues in its N-terminal region, a fibronectin type III domain and a WSXWS motif, a 21 aa transmembrane (TM) domain, and a 177 aa cytoplasmic domain with a Box 1 JAK-binding motif (1, 2, 4). A potential isoform contains a 36 aa sequence that is substituted for the TM and cytoplasmic domains (5). The ECD of rat IL-9 Rα shares 86%, 63%, 66%, 63% and 59% aa identity with the ECD of mouse, human, equine, canine and bovine IL-9 Rα, respectively. Mast cells, germinal center and B-1b B cells, T cell blasts, and myeloid progenitors express IL-9 R (1, 6 - 8). The primary functions of IL-9 have been difficult to determine due to the cross-functionality and cross-induction of cytokines. IL-9 production by regulatory T cells (T-regs), however, is crucial for mast cell recruitment and differentiation, which in turn is crucial for tolerance of allografts (7). Genetic deletion and transgenic expression of IL-9 and other cytokines has also demonstrated the role of IL-9 in mastocytosis, eosinophilia and B cell infiltration of the lung in a mouse asthma-like model, while IL-9 induction of IL-13 is responsible for eosinophil recruitment and mucous upregulation (8 - 10).

References:

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