**DESCRIPTION**

**Source**
E. coli-derived mouse IL-13 protein
Ser26-Phe131
Accession # P20109

**N-terminal Sequence Analysis**
Ser26

**Predicted Molecular Mass**
11.5 kDa

**SPECIFICATIONS**

**SDS-PAGE**
9 kDa, reducing conditions

**Activity**
Measured in a cell proliferation assay using TF-1 human erythroleukemic cells. Kitamura, T. et al. (1989) J. Cell Physiol. 140:323. The ED₅₀ for this effect is 0.75–3 ng/mL.

**Endotoxin Level**
<0.01 EU per 1 μg of the protein by the LAL method.

**Purity**
>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

**Formulation**
Lyophilized from a 0.2 μm filtered solution in PBS with BSA as a carrier protein. *1 mg pack size (01M) is supplied as a 0.2 μm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution**
Reconstitute at 50 μg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

**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.

**DATA**

**Bioactivity**
Recombinant Mouse IL-13 (Catalog # 413-ML) stimulates cell proliferation of the TF-1 human erythroleukemic cell line. The ED₅₀ for this effect is 0.75-3 ng/mL.

**SDS-PAGE**
1 μg lane of Recombinant Mouse IL-13 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 9 kDa.

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BACKGROUND

IL-13 is a 17 kDa immunoregulatory cytokine that plays a key role in the pathogenesis of allergic asthma and atopy. It is secreted by Th1 and Th2 CD4\(^+\) T cells, NK cells, visceral smooth muscle cells, eosinophils, mast cells, and basophils (1 - 3). IL-13 circulates as a monomer with two internal disulfide bonds that contribute to a bundled four \(\alpha\)-helix configuration (4, 5). Mature mouse IL-13 shares 57%, 75%, and 58% amino acid sequence identity with human, rat, and rhesus IL-13, respectively. Despite the low homology, it exhibits cross-species activity between human, mouse, and rat (6, 7). IL-13 has diverse activities on numerous cell types (8). On macrophages, IL-13 suppresses the production of proinflammatory cytokines and other cytotoxic substances. On B cells, IL-13 induces immunoglobulin class switching to IgE, upregulates the expression of MHC class II, CD71, CD72, and CD23, and costimulates proliferation. IL-13 upregulates IL-6 while downregulating IL-1 and TNF-\(\alpha\) production by fibroblasts and endothelial cells. IL-13 binds with low affinity to IL-13R\(\alpha_1\), triggering IL-13R\(\alpha_1\) association with IL-4R\(\alpha\). This high affinity receptor complex also functions as the type 2 IL-4 receptor complex (9, 10). Additionally, IL-13 binds with high affinity to IL-13R\(\alpha_2\) which is expressed intracellularly, on the cell surface, and as a soluble molecule (11 - 14). IL-13 R\(\alpha_2\) regulates the bioavailability of both IL-13 and IL-4 and is overexpressed in glioma and several bronchial pathologies (10, 15, 16). Compared to wild type IL-13, the atopy-associated R110Q variant of IL-13 elicits increased responsiveness from eosinophils that express low levels of IL-13 R\(\alpha_2\) (17).

References: