

Product Information

Interleukin-13 from mouse recombinant, expressed in *E. coli*

Catalog Number **I1896**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

Synonym: IL-13

Product Description

Interleukin-13 (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 α -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, IL13 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- α production by fibroblasts and endothelial cells. IL-13 binds with low affinity to IL-13 R α 1, triggering IL-13 R α 1 association with IL-4 R α . 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-13 R α 2, which is expressed intracellularly, on the cell surface, and as a soluble molecule.¹¹⁻¹⁴ IL-13 R α 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 α 2.¹⁷

This recombinant mouse IL-13 product is supplied lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4, with 50 μg BSA per 1 μg of cytokine.

Molecular mass:

11.5 kDa (predicted)
9 kDa (reducing conditions)

Purity: $\geq 97\%$ (SDS-PAGE)

ED₅₀: typically 0.73–3 ng/mL

The biological activity of recombinant, mouse IL-13 is measured in a cell proliferation assay using the human factor-dependent cell line, TF-1.¹⁸ The EC₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Endotoxin: <0.01 EU/ μg of the cytokine
(LAL [Limulus amoebocyte lysate] method)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute the product using 0.2 μm -filtered PBS containing 0.1% HSA or BSA to a concentration not less than 50 $\mu\text{g}/\text{ml}$.

Storage/Stability

Store the product at $-20\text{ }^{\circ}\text{C}$ for no more than 6 months.

After reconstitution, store at $2-8\text{ }^{\circ}\text{C}$ for a maximum of one month. For extended storage, freeze in working aliquots at $-70\text{ }^{\circ}\text{C}$ or $-20\text{ }^{\circ}\text{C}$. Repeated freezing and thawing is not recommended.

References

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