



Recombinant Human Interleukin 13

Catalog Number: **SJB13**

Strength: **25µg**

Specifications and Use

Description: Recombinant human IL-13 produced in E.coli is a single, non-glycosylated, polypeptide chain containing 113 amino acids, two pairs of disulfide bond and having a molecular mass of approximately 12.3kD.

Source: E.coli.

Molecular Mass: Approximately 12.3kD.

Purity: $\geq 97\%$, as determined by SDS-PAGE and HPLC method.

Endotoxin Level : $\leq 1\text{EU}/\mu\text{g}$, determined by the LAL method.

Biological Activity Measured in a cell proliferation assay using TF. The specific activity shall be not less than $1 \times 10^6 \text{IU}/\text{mg}$.

Formulation: Sterile lyophilized powder, in PBS containing 0.1% HSA, pH7.4.

Reconstitution: It is recommended that sterile PBS containing at least 0.1% human serum albumin or bovine serum albumin be added to the vial, to prepare a stock solution of not less than $100\mu\text{g}/\text{ml}$.

Storage: Lyophilized samples are stable for greater than six months from date of receipt at -20°C to -70°C .

■ Upon reconstitution, this cytokine can be stored under sterile conditions at $2-8^\circ\text{C}$ for one month or at -20°C to -70°C in a manual defrost freezer for three months without detectable loss of activity.

■ Avoid repeated freeze-thaw cycles. IL13 is an 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. IL13 circulates as a monomer with two internal disulfide bonds that contribute to a bundled four alpha helix configuration. Mature human IL13 shares 57%, 59%, and 94% amino acid sequence identity with mouse, rat, and rhesus IL13, respectively. Despite the low homology, it exhibits crossspecies activity between human, mouse, and rat. IL13 has diverse activities on numerous cell types. On macrophages, IL13 suppresses the production of proinflammatory cytokines and other cytotoxic substances. On B cells, IL13 induces immunoglobulin class switching to IgE, upregulates the expression of MHC class II, CD71, CD72, and CD23, and costimulates proliferation. IL13 upregulates IL6 while downregulating IL1 and TNF α production by fibroblasts and endothelial cells. IL13 binds with low affinity to IL13 R α 1, triggering IL 13 R α 1 association with IL4 R α . This high affinity receptor complex also functions as the type 2 IL 4 receptor complex. Additionally, IL13 binds with high affinity to IL13 R α 2 which is expressed intracellularly, on the cell surface, and as a soluble molecule. IL13R α 2 regulates the bioavailability of both IL13 and IL4 and is overexpressed in glioma and several bronchial pathologies. Compared to wild type IL13, the atopy-associated R110Q variant of IL13 elicits increased responsiveness from eosinophils that express low levels of IL 13R α 2.

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