

## Human Interleukin 13 (IL-13)

CATALOG NUMBER: IL-13-025P, 25 µg

### Introduction

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 TNFα production by fibroblasts and endothelial cells. IL13 binds with low affinity to IL13 Rα1, triggering IL 13 Rα1 association with IL4 Rα. This high affinity receptor complex also functions as the type 2 IL 4 receptor complex. Additionally, IL13 binds with high affinity to IL13 Rα2 which is expressed intracellularly, on the cell surface, and as a soluble molecule. IL13Rα2 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 13Rα2.

### 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 predicted molecular mass of approximately 12.3 kDa.

### Source

*E. coli*.

### Purity

≥ 97% purity (by SDS PAGE and HPLC)

### Endotoxin Level

≤1 EU/mg, determined by the LAL method

### Biological Activity

Measured in a cell proliferation assay using TF-1, the specific activity shall be not less than  $1 \times 10^6$  IU/mg

### Formulation

Sterile lyophilized powder, in PBS containing 0.1% HAS, pH7.4

Reconstitute with double distilled water at a concentration of no less than 50 µg/ml with 0.1% human serum albumin (A highly purified plant-derived human serum albumin is strongly suggested to be used, Cat# HAS-1r) or bovine serum albumin as a stock.

### Storage

Stable for 6-months from the date of shipment when kept at -20 °C or -70 °C. Upon reconstitution, it can be stored at 4 °C for at least one month or -20 °C for at least three months. Avoid repeated freeze-thaw cycles.

### Usage

This product is produced for LABORATORY RESEARCH USE ONLY.