

## Recombinant Rat Interleukin-13, 113aa (Rat IL-13,113aa)

### Product Information

Product Name	Cat#	Size
	90176ES10	10 µg
Recombinant Rat Interleukin-13, 113aa (Rat IL-13,113aa)	90176ES60	100 µg
	90176ES76	500 µg

### Product Description

IL-13 is a 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. IL-13 circulates as a monomer with two internal disulfide bonds that contribute to a bundled four alpha -helix configuration. Mature rat IL-13 shares 59%, 75%, and 60% amino acid sequence identity with human, mouse, and rhesus IL-13, respectively. Despite the low homology, it exhibits cross-species activity between human, mouse, and rat. IL-13 has diverse activities on numerous cell types. 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-13 R alpha 1, triggering IL-13 R alpha 1 association with IL-4 R alpha. This high affinity receptor complex also functions as the type 2 IL-4 receptor complex. Additionally, IL-13 binds with high affinity to IL-13 R alpha 2 which is expressed intracellularly, on the cell surface, and as a soluble molecule. IL-13 R alpha 2 regulates the bioavailability of both IL-13 and IL-4 and is overexpressed in glioma and several bronchial pathologies. 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.

### Product Properties

<b>Synonyms</b>	T-cell Activation Protein P600
<b>Accession</b>	P42203
<b>GeneID</b>	116553
<b>Source</b>	E.coli-derived Rat IL-13, 113aa, Thr19-His131.
<b>Molecular Weight</b>	Approximately 12.3 kDa.
<b>AA Sequence</b>	TPGPVRRSTS PPVALRELIE ELSNITQDQK TSLCNSSMVW SVDLTAGGFC AALESLTNIS SCNAIHRTQR ILNGLCNQKA SDVASSPPDT KIEVAQFISK LLNYSKQLFR YGH
<b>Tag</b>	None
<b>Physical Appearance</b>	Sterile Filtered White lyophilized (freeze-dried) powder.
<b>Purity</b>	> 98% by SDS-PAGE and HPLC analyses.
<b>Biological Activity</b>	The ED <sub>50</sub> as determined by a cell proliferation assay using human TF-1 cells is less than 5 ng/mL, corresponding to a specific activity of > 2.0 × 10 <sup>5</sup> IU/mg. Fully biologically active when compared to standard.
<b>Endotoxin</b>	< 1.0 EU per 1µg of the protein by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered concentrated solution in 2 × PBS, pH 7.4, 5 % trehalose.

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We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom.

#### **Reconstitution**

Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at  $\leq -20^{\circ}\text{C}$ . Further dilutions should be made in appropriate buffered solutions.

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#### **Shipping and Storage**

The products are shipped with ice pack and can be stored at  $-20^{\circ}\text{C}$  to  $-80^{\circ}\text{C}$  for 1 year.

Recommend to aliquot the protein into smaller quantities when first used and avoid repeated freeze-thaw cycles.

#### **Cautions**

1. Avoid repeated freeze-thaw cycles.
2. For your safety and health, please wear lab coats and disposable gloves for operation.
3. For research use only!