

DESCRIPTION	
<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse IL-13 in direct ELISAs and Western blots. In direct ELISAs, approximately 55% cross-reactivity with recombinant rat IL-13 is observed, and approximately 5% cross-reactivity with recombinant human IL-13 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant mouse IL-13 Ser26-Phe131 Accession # P20109
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

APPLICATIONS	
<b>Please Note:</b> Optimal dilutions should be determined by each laboratory for each application. <i>General Protocols</i> are available in the <i>Technical Information</i> section on our website.	
	<b>Recommended Concentration      Sample</b>
<b>Western Blot</b>	0.1 µg/mL      Recombinant Mouse IL-13 (Catalog # 413-ML)
<b>Immunocytochemistry</b>	5-15 µg/mL      See Below
<b>Neutralization</b>	Measured by its ability to neutralize IL-13-induced proliferation in the TF-1 human erythroleukemic cell line. Kitamura, T. <i>et al.</i> (1989) <i>J. Cell Physiol.</i> <b>140</b> :323. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.05-0.15 µg/mL in the presence of 10 ng/mL Recombinant Mouse IL-13.

DATA	
<p><b>Neutralization</b></p> <p><b>Cell Proliferation Induced by IL-13 and Neutralization by Mouse IL-13 Antibody.</b> Recombinant Mouse IL-13 (Catalog # 413-ML) stimulates proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Mouse IL-13 (10 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Mouse IL-13 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-413-NA). The ND<sub>50</sub> is typically 0.05-0.15 µg/mL.</p>	<p><b>Immunocytochemistry</b></p> <p><b>IL-13 in Mouse Splenocytes.</b> IL-13 was detected in immersion fixed mouse splenocytes using Goat Anti-Mouse IL-13 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-413-NA) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). View our protocol for <a href="#">Fluorescent ICC Staining of Non-adherent Cells</a>.</p>

PREPARATION AND STORAGE	
<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**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<sup>+</sup> 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-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 (9, 10). 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 (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:**

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