

DESCRIPTION	
Species Reactivity	Mouse
Specificity	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.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant mouse IL-13 Ser26-Phe131 Accession # P20109
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

APPLICATIONS		
Please Note: 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.		
	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Mouse IL-13 (Catalog # 413-ML)
Immunocytochemistry	5-15 µg/mL	See Below
Neutralization	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> 140 :323. The Neutralization Dose (ND ₅₀) is typically 0.05-0.15 µg/mL in the presence of 10 ng/mL Recombinant Mouse IL-13.	

DATA	
<p>Neutralization</p> <p>The graph shows two curves: Protein (orange circles) and Antibody (green diamonds). The x-axis is Recombinant Mouse IL-3 (ng/mL) on a log scale from 10⁻² to 10⁴. The y-axis is Mean RFU from 2000 to 9000. The Protein curve increases from ~3000 to ~8000 RFU. The Antibody curve decreases from ~6500 to ~2000 RFU. The curves intersect at approximately 10⁰ ng/mL.</p>	<p>Cell Proliferation Induced by IL-13 and Neutralization by Mouse IL-13 Antibody. 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 ND₅₀ is typically 0.05-0.15 µg/mL.</p>
<p>Immunocytochemistry</p> <p>The image shows several cells with red cytoplasmic staining and blue nuclei (DAPI). The red staining indicates the presence of IL-13 in the mouse splenocytes.</p>	<p>IL-13 in Mouse Splenocytes. 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 Fluorescent ICC Staining of Non-adherent Cells.</p>

PREPARATION AND STORAGE	
Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	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
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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⁺ 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, 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- 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).

References:

1. Wills-Karp, M. (2004) *Immunol. Rev.* **202**:175.
2. Nakajima, H. and K. Takatsu (2007) *Int. Arch. Allergy Immunol.* **142**:265.
3. Brown, K.D. *et al.* (1989) *J. Immunol.* **142**:679.
4. Moy, F.J. *et al.* (2001) *J. Mol. Biol.* **310**:219.
5. Eisenmesser, E.Z. *et al.* (2001) *J. Mol. Biol.* **310**:231.
6. Ruetten, H. and C. Thiemermann (1997) *Shock* **8**:409.
7. Lakkis, F.G. *et al.* (1997) *Biochem. Biophys. Res. Commun.* **235**:529.
8. Wynn, T.A. (2003) *Annu. Rev. Immunol.* **21**:425.
9. Andrews, A.L. *et al.* (2002) *J. Biol. Chem.* **277**:46073.
10. Tabata, Y. *et al.* (2007) *Curr. Allergy Asthma Rep.* **7**:338.
11. Chiamonte, M.G. *et al.* (2003) *J. Exp. Med.* **197**:687.
12. Daines, M.O. and G.K. Hershey (2002) *J. Biol. Chem.* **277**:10387.
13. Matsumura, M. *et al.* (2007) *Biochem. Biophys. Res. Commun.* **360**:464.
14. Tabata, Y. *et al.* (2007) *J. Immunol.* **177**:7905.
15. Andrews, A.L. *et al.* (2006) *J. Allergy Clin. Immunol.* **118**:858.
16. Joshi, B.H. *et al.* (2006) *Vitam. Horm.* **74**:479.
17. Andrews, A-L. *et al.* (2007) *J. Allergy Clin. Immunol.* **120**:91.