

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat IL-13 in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 30% cross-reactivity with recombinant mouse IL-13 and recombinant cotton rat IL-13 is observed, and approximately 15% cross-reactivity with recombinant human IL-13, recombinant rhesus macaque IL-13, and recombinant canine IL-13 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant rat IL-13 Thr19-His131 Accession # P42203
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.

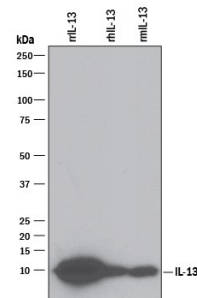
APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	0.1 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 0.2-0.8 µg/mL in the presence of 15 ng/mL Recombinant Rat IL-13.	

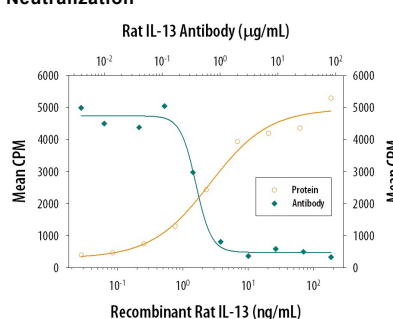
DATA

Western Blot



Detection of Recombinant Rat IL-13 by Western Blot. Western blot shows 25 ng of Recombinant Rat IL-13 (Catalog # 1945-RL), Recombinant Human IL-13 (Catalog # 213-ILB) and Recombinant Mouse IL-13 (Catalog # 413-ML). PVDF Membrane was probed with 0.1 µg/mL of Goat Anti-Rat IL-13 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1945) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). A specific band was detected for IL-13 at approximately 10 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 3.

Neutralization



Cell Proliferation Induced by IL-13 and Neutralization by Rat IL-13 Antibody. Recombinant Rat IL-13 (Catalog # 1945-RL) stimulates proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Rat IL-13 (15 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Rat IL-13 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1945). The ND₅₀ is typically 0.2-0.8 µg/mL.

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. IL-13 circulates as a monomer with two internal disulfide bonds that contribute to a bundled four α-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-α production by fibroblasts and endothelial cells. IL-13 binds with low affinity to IL-13 Rα1, triggering IL-13 Rα1 association with IL-4 Rα. 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 Rα2 which is expressed intracellularly, on the cell surface, and as a soluble molecule. IL-13 Rα2 regulates the bioavailability of both IL-13 and IL-4 and is over-expressed 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 Rα2.