

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-13 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human IL-4 or recombinant mouse IL-13 is observed.
Source	Monoclonal Mouse IgG ₁ Clone # 31606
Purification	Protein A or G purified from ascites
Immunogen	<i>E. coli</i> -derived recombinant human IL-13 Gly35-Asn146 Accession # P35225
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	1 µg/mL	Recombinant Human IL-13 (Catalog # 213-ILB)
Flow Cytometry	2.5 µg/10 ⁶ cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
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 1-4 µg/mL in the presence of 10 ng/mL Recombinant Human IL-13.	

DATA

Flow Cytometry

Detection of IL-13 in Human PBMCs by Flow Cytometry. Human peripheral blood mononuclear cells (PBMCs) treated with 5 ng/mL Recombinant Human IL-4 (Catalog # 204-IL) and 10 µg/mL Goat Anti-Human IFN-γ Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-285-NA) for 3 days were stained with Mouse Anti-Human IL-13 Monoclonal Antibody (Catalog # MAB2131) followed by Allophycocyanin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0101B) and Mouse Anti-Human CD4 PE-conjugated Monoclonal Antibody (Catalog # FAB3791P). Quadrant markers were set based on control antibody staining (Catalog # MAB002).

Neutralization

Cell Proliferation Induced by IL-13 and Neutralization by Human IL-13 Antibody. Recombinant Human IL-13 (Catalog # 213-ILB) stimulates proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human IL-13 (10 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human IL-13 Monoclonal Antibody (Catalog # MAB2131). The ND₅₀ is typically 1-4 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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 human IL-13 shares 57%, 59%, and 94% amino acid sequence identity with mouse, 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 over-expressed 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:

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