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, Clone # 31606

Purification: Protein A or G purified from ascites

Immunogen: E. coli-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.

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

<table>
<thead>
<tr>
<th>Sample</th>
<th>Western Blot</th>
<th>1 µg/mL</th>
<th>Recombinant Human IL-13 (Catalog # 213-ILB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Cytometry</td>
<td>2.5 µg/10⁶ cells</td>
<td>See Below</td>
<td></td>
</tr>
<tr>
<td>CyTOF-ready</td>
<td>Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Neutralization: Measured by its ability to neutralize IL-13-induced proliferation in the TF-1 human erythroleukemic cell line.

Kitamura, T. et al. (1989) J. Cell Physiol. 140:323. The Neutralization Dose (ND₅₀) 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 supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

Stability & Storage: Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 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 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 (9, 10). Additionally, IL-13 binds with high affinity to IL-13 Rα2 which is expressed intracellularly, on the cell surface, and as a soluble molecule (11-14). IL-13 Rα2 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 Rα2 (17).

References: