**DESCRIPTION**

**Species Reactivity** Human

**Specificity** Detects human IL-4 in Western blots. In Western blots, no cross-reactivity with recombinant mouse IL-4, recombinant cotton rat IL-4, recombinant rat IL-4, or recombinant human IL-13 is observed.

**Source** Monoclonal Mouse IgG2B Clone # 34019

**Purification** Protein A or G purified from hybridoma culture supernatant

**Immunogen** E. coli-derived recombinant human IL-4

**Accession** # P05112

**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 either lyophilized or 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.

<table>
<thead>
<tr>
<th>Sample Concentration</th>
<th>Sample</th>
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</thead>
<tbody>
<tr>
<td>Western Blot</td>
<td>1 µg/mL</td>
</tr>
<tr>
<td>Neutralization</td>
<td>Recombinant Human IL-4 (Catalog # 204-IL)</td>
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</tbody>
</table>

**Neutralization**

Measured by its ability to neutralize IL-4-induced proliferation in the TF-1 human erythroleukemic cell line. Kitauma, T. et al. (1989) J. Cell Physiol. 140:323. The Neutralization Dose (ND_{50}) is typically 0.5-1.5 µg/mL in the presence of 0.5 ng/mL Recombinant Human IL-4.

**DATA**

Cell Proliferation Induced by IL-4 and Neutralization by Human IL-4 Antibody. Recombinant Human IL-4 (Catalog # 204-IL) stimulates proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human IL-4 (0.5 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human IL-4 Monoclonal Antibody (Catalog # MAB204). The ND_{50} is typically 0.5-1.5 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.

- 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.
Interleukin-4 (IL-4), also known as B cell-stimulatory factor-1, is a monomeric, approximately 13-18 kDa Th2 cytokine that shows pleiotropic effects during immune responses (1-3). It is a glycosylated polypeptide that contains three intrachain disulfide bridges and adopts a bundled four α-helix structure (4). Human IL-4 is synthesized with a 24 aa signal sequence. Alternate splicing generates an isoform with a 16 aa internal deletion. Mature human IL-4 shares 55%, 39%, and 43% aa sequence identity with bovine, mouse, and rat IL-4, respectively. Human, mouse, and rat IL-4 are species-specific in their activities (5-7). IL-4 exerts its effects through two receptor complexes (8, 9). The type I receptor, which is expressed on hematopoietic cells, is a heterodimer of the ligand binding IL-4 Rα and the common γ chain (a shared subunit of the receptors for IL-2, -7, -9, -15, and -21). The type II receptor on non-hematopoietic cells consists of IL-4 Rα and IL-13 Rα1. The type II receptor also transduces IL-13 mediated signals. IL-4 is primarily expressed by Th2-biased CD4+ T cells, mast cells, basophils, and eosinophils (1, 2). It promotes cell proliferation, survival, and immunoglobulin class switch to IgG4 and IgE in human B cells, acquisition of the Th2 phenotype by naïve CD4+ T cells, priming and chemotaxis of mast cells, eosinophils, and basophils, and the proliferation and activation of epithelial cells (10-13). IL-4 plays a dominant role in the development of allergic inflammation and asthma (12, 14).

References: