

**DESCRIPTION**

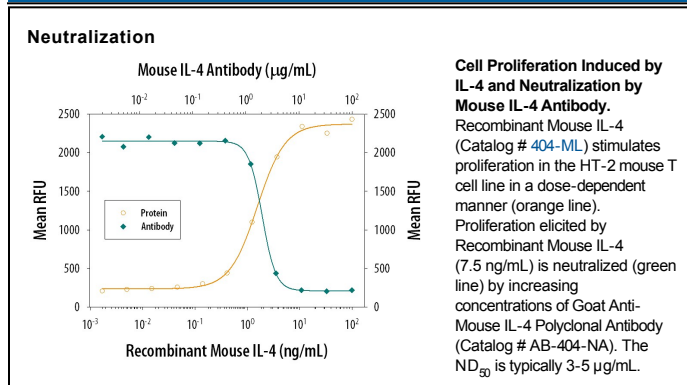
|                           |  |
|---------------------------|--|
| <b>Species Reactivity</b> | Mouse  |
| <b>Specificity</b>        | Detects mouse IL-4 in direct ELISAs and Western blots. In direct ELISAs, approximately 30% cross-reactivity with recombinant rat IL-4 and no cross-reactivity with recombinant human IL-4 is observed. |
| <b>Source</b>             | Polyclonal Goat IgG  |
| <b>Purification</b>       | Protein A or G purified  |
| <b>Immunogen</b>          | <i>E. coli</i> -derived recombinant mouse IL-4<br>His23-Ser140<br>Accession # P07750   |
| <b>Endotoxin Level</b>    | <0.10 EU per 1 µg of the antibody by the LAL method.   |
| <b>Formulation</b>        | 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.

|                       | <b>Recommended Concentration</b>  | <b>Sample</b>                             |
|-----------------------|---|---|
| <b>Western Blot</b>   | 1 µg/mL   | Recombinant Mouse IL-4 (Catalog # 404-ML) |
| <b>Neutralization</b> | Measured by its ability to neutralize IL-4-induced proliferation in the HT-2 mouse T cell line. The Neutralization Dose (ND <sub>50</sub> ) is typically 3-5 µg/mL in the presence of 7.5 ng/mL Recombinant Mouse IL-4. |   |

**DATA**



**PREPARATION AND STORAGE**

|                                |  |
|--------------------------------|--|
| <b>Reconstitution</b>          | Reconstitute at 1 mg/mL in sterile PBS.  |
| <b>Shipping</b>                | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.  |
| <b>Stability &amp; Storage</b> | <b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul> |

**BACKGROUND**

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 (1-4). It is a glycosylated polypeptide that contains three intrachain disulfide bridges and adopts a bundled four  $\alpha$ -helix structure (5). Mouse IL-4 is synthesized with a 24 amino acid (aa) signal sequence. Mature mouse IL-4 shares 39%, 39%, and 59% aa sequence identity with bovine, human, and rat IL-4, respectively. Human, mouse, and rat IL-4 are species-specific in their activities (6-8). IL-4 exerts its effects through two receptor complexes (9, 10). The type I receptor, which is expressed on hematopoietic cells, is a heterodimer of the ligand binding IL-4 R $\alpha$  and the common  $\gamma$  chain (a shared subunit of the receptors for IL-2, -7, -9, -15, and -21). The type II receptor on nonhematopoietic cells consists of IL-4 R $\alpha$  and IL-13 R $\alpha$ 1. The type II receptor also transduces IL-13 mediated signals. IL-4 is primarily expressed by Th2-biased CD4<sup>+</sup> T cells, mast cells, basophils, and eosinophils (1, 2). It promotes cell proliferation, survival, and immunoglobulin class switch to IgG1 and IgE in mouse B cells, acquisition of the Th2 phenotype by naïve CD4<sup>+</sup> T cells, priming and chemotaxis of mast cells, eosinophils, and basophils, and the proliferation and activation of epithelial cells (11-14). IL-4 plays a dominant role in the development of allergic inflammation and asthma (13, 15).

**References:**

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