

#### DESCRIPTION

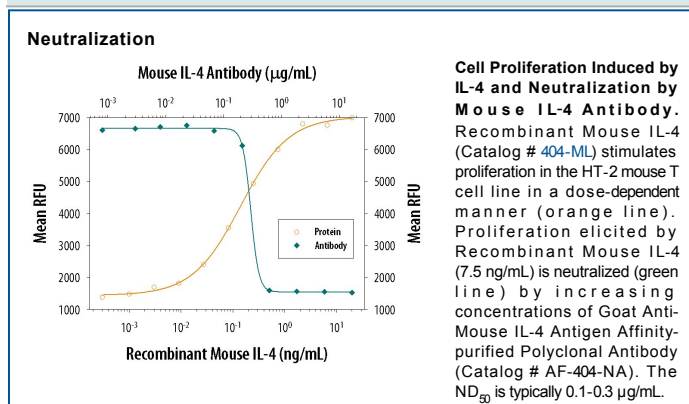
<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse IL-4 in direct ELISAs and Western blots. In Western blots, approximately 10% cross-reactivity with recombinant rat IL-4 and less than 1% cross-reactivity with recombinant human IL-4, recombinant porcine IL-4, and recombinant cotton rat IL-4 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant mouse IL-4 His23-Ser140 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>	0.1 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 0.1-0.3 µg/mL in the presence of 7.5 ng/mL Recombinant Mouse IL-4.	

#### DATA



#### PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 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:

1. Benczik, M. and S.L. Gaffen (2004) *Immunol. Invest.* **33**:109.
2. Chomarat, P. and J. Banchereau (1998) *Int. Rev. Immunol.* **17**:1.
3. Lee, F. *et al.* (1986) *Proc. Natl. Acad. Sci. USA* **83**:2061.
4. Noma, Y. *et al.* (1986) *Nature* **319**:640.
5. Redfield, C. *et al.* (1991) *Biochemistry* **30**:11029.
6. Ramirez, F. *et al.* (1988) *J. Immunol. Meth.* **221**:141.
7. Leitenberg, D. and T.L. Feldbush (1988) *Cell. Immunol.* **111**:451.
8. Mosman, T.R. *et al.* (1987) *J. Immunol.* **138**:1813.
9. Mueller, T.D. *et al.* (2002) *Biochim. Biophys. Acta* **1592**:237.
10. Nelms, K. *et al.* (1999) *Annu. Rev. Immunol.* **17**:701.
11. Paludan, S.R. (1998) *Scand. J. Immunol.* **48**:459.
12. Corthay, A. (2006) *Scand. J. Immunol.* **64**:93.
13. Ryan, J.J. *et al.* (2007) *Crit. Rev. Immunol.* **27**:15.
14. Grone, A. (2002) *Vet. Immunol. Immunopathol.* **88**:1.
15. Rosenberg, H.F. *et al.* (2007) *J. Allergy Clin. Immunol.* **119**:1303.