

**DESCRIPTION**

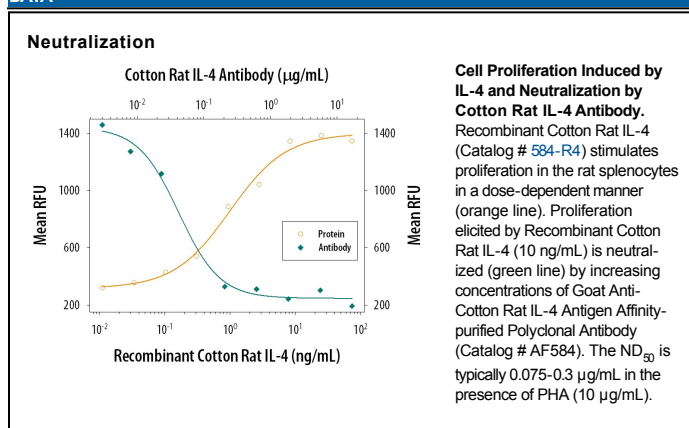
<b>Species Reactivity</b>	Cotton Rat
<b>Specificity</b>	Detects cotton rat IL-4 in direct ELISAs and Western blots. In direct ELISAs, approximately 10% cross-reactivity with recombinant rat IL-4 is observed, 5% cross-reactivity with recombinant mouse IL-4 is observed, and less than 1% cross-reactivity with recombinant human IL-4 and recombinant porcine 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 cotton rat IL-4 Cys21-Phe147 Accession # AAL18820
<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. *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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	0.1 µg/mL	Recombinant Cotton Rat IL-4 (Catalog # 584-R4)
<b>Neutralization</b>		Measured by its ability to neutralize IL-4-induced proliferation in the rat splenocytes. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.075-0.3 µg/mL in the presence of 10 ng/mL Recombinant Cotton Rat IL-4 and 10 µg/mL PHA.

**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. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<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 kDa-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  $\alpha$ -helix structure (4). Cotton rat IL-4 is synthesized with a 24 amino acid (aa) signal sequence. Mature cotton rat IL-4 shares 41%, 44%, 57%, and 68% aa sequence identity with bovine, human, mouse, and rat IL-4, respectively. IL-4 exerts its effects through two receptor complexes (5, 6). 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 IgE in 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 (7-10). IL-4 plays a dominant role in the development of allergic inflammation and asthma (9, 11).

**References:**

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