

## DESCRIPTION

<b>Species Reactivity</b>	Cotton Rat
<b>Specificity</b>	Detects cotton rat IL-4 in ELISAs and Western blots. In sandwich immunoassays, less than 0.05% cross-reactivity with recombinant human (rh) IL-4, recombinant rat (rr) IL-4, recombinant porcine (rp) IL-4, rhIL-4 sR, recombinant mouse (rm) IL-4 R, recombinant feline IL-4, and recombinant canine IL-4 is observed. In Western blots, approximately 10% cross-reactivity with rIL-4 is observed, 5% cross-reactivity with rmlL-4 is observed, and less than 1% cross-reactivity with rhIL-4 and rplL-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>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. 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	Sample
<b>Western Blot</b>	0.1 µg/mL	Recombinant Cotton Rat IL-4 (Catalog # 584-R4)
<b>Cotton Rat IL-4 Sandwich Immunoassay</b>		<b>Reagent</b>
<b>ELISA Capture</b>	2-8 µg/mL	Cotton Rat IL-4 Antibody (Catalog # MAB584)
<b>ELISA Detection</b>	0.1-0.4 µg/mL	Cotton Rat IL-4 Biotinylated Antibody (Catalog # BAF584)
<b>Standard</b>		Recombinant Cotton Rat IL-4 (Catalog # 584-R4)

## 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>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <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 α-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 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 nonhematopoietic 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<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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