

DESCRIPTION

Species Reactivity	Porcine
Specificity	Detects porcine IL-4 in ELISAs and Western blots. In ELISAs, this antibody shows less than 2% cross-reactivity with recombinant feline IL-4 and less than 0.5% cross-reactivity with recombinant human IL-4, recombinant canine IL-4, recombinant cotton rat IL-4, recombinant mouse IL-4, and recombinant rat IL-4.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant porcine IL-4 His25-Cys133 Accession # Q04745
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 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.

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Porcine IL-4 (Catalog # 654-P4)
Immunocytochemistry	5-15 µg/mL	See Below
Porcine IL-4 Sandwich Immunoassay		Reagent
ELISA Capture	0.2-0.8 µg/mL	Porcine IL-4 Antibody (Catalog # AF654)
ELISA Detection	0.1-0.4 µg/mL	Porcine IL-4 Biotinylated Antibody (Catalog # BAF654)
Standard		Recombinant Porcine IL-4 (Catalog # 654-P4)
Neutralization	Measured by its ability to neutralize IL-4-induced proliferation in the TF-1 human erythroleukemic cell line. The Neutralization Dose (ND ₅₀) is typically 1-5 µg/mL in the presence of 2 ng/mL Recombinant Porcine IL-4.	

DATA

Neutralization

Cell Proliferation Induced by IL-4 and Neutralization by Porcine IL-4 Antibody. Recombinant Porcine IL-4 (Catalog # 654-P4) stimulates proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Porcine IL-4 (2 ng/mL) is neutralized (green line) by increasing concentrations of Porcine IL-4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF654). The ND₅₀ is typically 1-5 µg/mL.

Immunocytochemistry

IL-4 in Porcine PBMCs. IL-4 was detected in immersion fixed porcine peripheral blood mononuclear cells (PBMCs) using Goat Anti-Porcine IL-4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF654) at 5 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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. <ul style="list-style-type: none"> • 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.

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 (1-3). It is a glycosylated polypeptide that contains three intrachain disulfide bridges and adopts a bundled four α -helix structure (4). Porcine IL-4 is synthesized with a 24 amino acid (aa) signal sequence. Mature porcine IL-4 shares 78%, 59%, 41%, and 41% aa sequence identity with bovine, human, mouse, and rat IL-4, respectively. Human IL-4 is active on porcine vascular endothelial cells (5). IL-4 exerts its effects through two receptor complexes (6, 7). The type I receptor, which is expressed on hematopoietic cells, is a heterodimer of the ligand binding IL-4 R α 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 R α and IL-13 R α 1. 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 IgE in 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 (8, 11). IL-4 plays a dominant role in the development of allergic inflammation and asthma (10, 12).

References:

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