

## DESCRIPTION

<b>Species Reactivity</b>	Porcine
<b>Specificity</b>	Detects porcine IL-5 in direct ELISAs and Western blots. In direct ELISAs, less than 30% cross-reactivity with recombinant canine IL-5 and less than 10% cross-reactivity with recombinant human IL-5, recombinant mouse IL-5, and recombinant rat IL-5 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant porcine IL-5 Ile20-Ser134 Accession # Q9MYM5
<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 either lyophilized or as a 0.2 µm filtered solution in PBS.

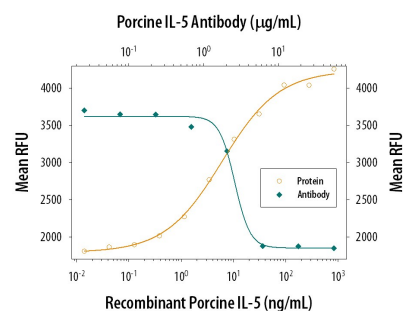
## APPLICATIONS

**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 Porcine IL-5 (Catalog # 3137-PL)
<b>Immunocytochemistry</b>	5-15 µg/mL	See Below
<b>Neutralization</b>	Measured by its ability to neutralize IL-5-induced proliferation in the TF-1 human erythroleukemic cell line. Kitamura, T. <i>et al.</i> (1989) J. Cell Physiol. <b>140</b> :323. The Neutralization Dose (ND <sub>50</sub> ) is typically <5 µg/mL in the presence of 25 ng/mL Recombinant Porcine IL-5.	

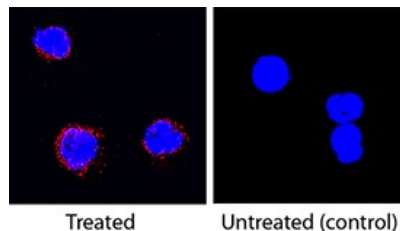
## DATA

### Neutralization



**Cell Proliferation Induced by IL-5 and Neutralization by Porcine IL-5 Antibody.**  
Recombinant Porcine IL-5 (Catalog # 3137-PL) stimulates proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Porcine IL-5 (25 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Porcine IL-5 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3137). The ND<sub>50</sub> is typically <5 µg/mL.

### Immunocytochemistry



**IL-5 in Porcine PBMCs.**  
IL-5 was detected in immersion fixed porcine peripheral blood mononuclear cells treated with calcium ionomycin and PMA using Goat Anti-Porcine IL-5 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3137) at 15 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

<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-5 (IL-5) is a secreted disulfide-linked homodimeric glycoprotein that belongs to the  $\alpha$ -helical group of cytokines that includes IL-3, IL-5 and GM-CSF (1-3). IL-5 is primarily produced by CD4<sup>+</sup> Th2 cells, but eosinophils and mast cells also produce IL-5. Porcine IL-5 is synthesized as a 134 amino acid (aa) precursor that contains a 19 aa signal sequence and a 115 aa mature segment (5). Four  $\alpha$ -helices and two cysteines that form interchain disulfide bonds with a second, antiparallel IL-5 molecule are conserved among species (3-5). Monomeric IL-5 is a predicted 14 kDa protein but usage of N-linked glycosylation sites may increase its molecular weight (5). Mature porcine IL-5 shares 90%, 88%, 86%, 85%, 84%, 66%, 68%, 63%, 63% and 59% aa sequence identity with mature bovine, sheep, cat, equine, canine, human, guinea pig, cotton rat, murine and rat IL-5, respectively. Recombinant porcine IL-5 induced proliferation in the human TF-1 cell line (5). The receptor for human IL-5 consists of a 60 kDa ligand-binding subunit (IL-5 R $\alpha$ ) and a 120 kDa signal-transducing subunit ( $\beta_c$ ). It is suggested that dimeric IL-5 binding to IL-5 R $\alpha$  recruits  $\beta_c$ , which subsequently covalently links with IL-5 R $\alpha$ . Two receptor complexes then associate to form the physiologic IL-5 receptor (6, 7). IL-5 binds proteoglycans, potentially enhancing its activity (8). Following receptor binding, IL-5 promotes the maturation, activation and migration of eosinophils, as demonstrated during asthmatic eosinophilic lung inflammation (1-3). It also mobilizes eosinophils and CD34<sup>+</sup> progenitors from marrow. It also enhances Ig release from B cells and contributes to IL-4 production. Finally, it primes basophils for histamine and leukotriene release (1, 2, 9).

## References:

1. Lalani, T. *et al.* (1999) Ann. Allergy Asthma Immunol. **82**:317.
2. Martinez-Moczygemba, M. and D.P. Huston (2003) J. Allergy Clin. Immunol. **112**:653.
3. Zabeau, L. *et al.* (2003) Curr. Drug Targets Inflamm. Allergy **2**:319.
4. Mertens, B. *et al.* (1996) Gene **176**:273.
5. Sylvén, H. *et al.* (2000) Immunogenetics **51**:59.
6. Bagley, C.J. *et al.* (1997) Blood **89**:1471.
7. Ishino, T. *et al.* (2005) J. Biol. Chem. **280**:22951.
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