Canine IL-21 Antibody

Antigen Affinity-purified Polyclonal Sheep IgG
Catalog Number: AF5849

DESCRIPTION

Species Reactivity	Canine
Specificity	Detects canine IL-21 in direct ELISAs. In direct ELISAs, approximately 35% cross-reactivity with recombinant human IL-21 is observed, and less than 3% cross-reactivity with recombinant mouse IL-21 is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant canine IL-21 His18-Ser146 Accession # NP_001003347
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.

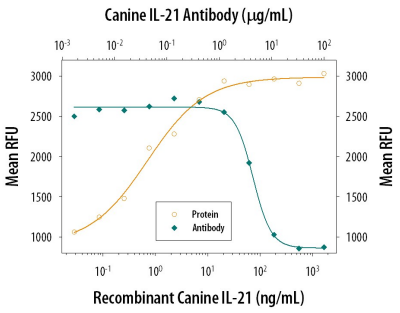
APPLICATIONS

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.*

Neutralization	Measured by its ability to neutralize IL−21-induced proliferation in the N1186 human T cell line. Parrish-Novak, J. *et al.* (2000) Nature **408**:57. The Neutralization Dose (ND_{50}) is typically 2-10 µg/mL in the presence of 10 ng/mL Recombinant Canine IL−21.

DATA

Neutralization



Cell Proliferation Induced by IL-21 and Neutralization by Canine IL-21 Antibody. Recombinant Canine IL-21 (Catalog # 5849-ML) induces proliferation in the N1186 human T cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Canine IL-21 (10 ng/mL) is neutralized (green line) by increasing concentrations of Sheep Anti-Canine IL-21 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5849). The ND_{50} is typically 2-10 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.2 mg/mL.
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.** ● 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.

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BACKGROUND

Interleukin-21 (IL-21) is a 14 kDa (predicted) four-helix-bundle cytokine and member of the IL-15/IL-21 family. It is made by activated $CD4^+$ T cells, activated NKT cells, T helper (Th) cells, and Th17 cells (1-5). Canine IL-21 is synthesized as a 146 amino acid (aa) precursor that contains a 17 aa signal sequence and a 129 aa mature chain. Mature canine IL-21 is 86%, 73%, 66%, and 64% aa identical to mature bovine, human, mouse and rat IL-21, respectively. IL-21 binds to a heterodimeric receptor, which is formed by the common γ-chain subunit (CD134), shared with IL-2, IL-4, IL-7, IL-9, IL-13, and IL-15 receptors, and its own receptor, IL-21 R, a member of the class I cytokine receptor family (1-2). IL-21 R is expressed on a variety of immune cells, including B cells, T cells, dendritic cells, and NK cells, as well as non-immune cells, such as fibroblasts, epithelial cells, and endothelial cells (1-2, 5). Binding of IL-21 to its receptor leads to the activation of members of the JAK-family protein tyrosine kinases, JAK1 and JAK3, and signal transducer and activator of transcription (Stat) molecules (1). IL-21 regulates activation, proliferation, and survival of both $CD4^+$ T cells and B cells, the functional activity of $CD8^+$ T cells and NK cells, and limits the differentiation of inducible regulatory T cells and counteracts their suppressive properties on effector T cells (1, 5-6). IL-21 also negatively regulates the maturation and function of dendritic cells (1, 5-6). IL-21 also plays a role in many inflammatory and autoimmune diseases, such as Crohn's disease, *Helicobacter pylori*-related gastritis, celiac disease, type I diabetes mellitus, psoriasis, rheumatoid arthritis, and systemic lupus erythematosus (1). IL-21 is also involved in controlling chronic viral infections (7).

References:

1. Monteleone, G. *et al.* (2009) Cytokine Growth Factor Rev. **20**:185.
2. Parrish-Novak, J. *et al.* (2000) Nature **408**:57.
3. Coquet, J.M. *et al.* (2007) J. Immunol.**178**:2827.
4. Vogelzang, A. *et al.* (2008) Immunity **29**:127.
5. Monteleone, G. *et al.* (2008) Trends Immunol. **29**:290.
6. Spolski, R. *et al.* (2008) Curr. Opin. Immunol. **20**:295.
7. Yi, J.S. *et al.* (2009) Science **324**:1572.

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