Canine TNF-α Antibody

Monoclonal Mouse IgG_1 Clone # 236812

Catalog Number: MAB1507

DESCRIPTION

Species Reactivity	Canine
Specificity	Detects canine TNF-α in direct ELISAs. In direct ELISAs, 25-100% cross-reactivity with recombinant human TNF-α, recombinant porcine TNF-α, and recombinant rhesus macaque TNF-α is observed.
Source	Monoclonal Mouse IgG_1 Clone # 236812
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant canine TNF-α Val77-Leu233 Accession # P51742
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 either lyophilized or as a 0.2 µm filtered solution in PBS.

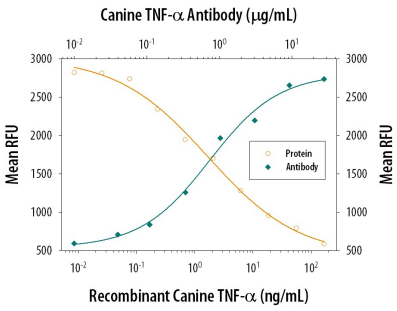
APPLICATIONS

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.*

	Recommended Concentration	Sample
Immunocytochemistry	8-25 µg/mL	See Below
Canine TNF-α Sandwich Immunoassay		**Reagent**
ELISA Capture	2-8 µg/mL	Canine TNF-α Antibody (Catalog # MAB1507)
ELISA Detection	0.1-0.4 µg/mL	Canine TNF-α Biotinylated Antibody (Catalog # BAF1507)
Standard		Recombinant Canine TNF-α (Catalog # 1507-CT)
Neutralization	Measured by its ability to neutralize TNF-α-induced cytotoxicity in the L-929 mouse fibroblast cell line. The Neutralization Dose (ND_{50}) is typically 1.25-5.0 µg/mL in the presence of 10 ng/mL Recombinant Canine TNF-α and 1 µg/mL actinomycin D.	

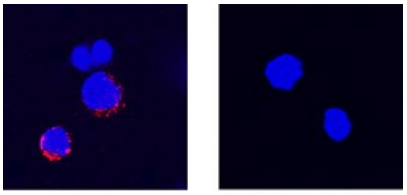
DATA

Neutralization



Cytotoxicity Induced by TNF-α and Neutralization by Canine TNF-α Antibody. Recombinant Canine TNF-α (Catalog # 1507-CT) induces cytotoxicity in the the L-929 mouse fibroblast cell line in a dose-dependent manner (orange line). Cytotoxicity elicited by Recombinant Canine TNF-α (10 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Canine TNF-α Monoclonal Antibody (Catalog # MAB1507). The ND_{50} is typically 1.25-5.0 µg/mL in the presence of the metabolic inhibitor actinomycin D (1 µg/mL).

Immunocytochemistry



TNF-α in Canine PBMCs. TNF-α was detected in immersion fixed canine peripheral blood mononuclear cells (PBMCs) untreated or treated with calcium ionomycin and PMA using Mouse Anti-Canine TNF-α Monoclonal Antibody (Catalog # MAB1507) at 15 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cell secretion. View our protocol for Fluorescent ICC Staining of Non-adherent Cells.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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.** ● 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

Tumor necrosis factor alpha (TNF-α), also known as cachectin, is the prototypic ligand of the TNF superfamily. It is a pleiotropic molecule that plays a central role in inflammation, apoptosis, and immune system development. TNF-α is produced by a wide variety of immune and epithelial cell types (1, 2). Canine TNF-α consisits of a 35 amino acid (aa) cytoplasmic domain, a 21 aa transmembrane segment, and a 177 aa extracellular domain (ECD) (3). Within the ECD, canine TNF-α shares 84-94% aa sequence identity with equine, feline, human, porcine, and rhesus and 69-77% with bovine, cotton rat, mouse, and rat with TNF-α. The 26 kDa type 2 transmembrane protein is assembled intracellularly to form a noncovalently linked homotrimer (4). Ligation of this complex induces reverse signaling that promotes lymphocyte co-stimulation but diminishes monocyte responsiveness (5). Cleavage of membrane bound TNF-α by TACE/ADAM17 releases a 55 kDa soluble trimeric form of TNF-α (6, 7). TNF-α trimers bind the ubiquitous TNF RI and the hematopoietic cell-restricted TNF RII, both of which are also expressed as homotrimers (1, 8). TNF-α regulates lymphoid tissue development through control of apoptosis (2). It also promotes inflammatory responses by inducing the activation of vascular endothelial cells and macrophages (2). TNF-α is a key cytokine in the development of several inflammatory disorders (9). It contributes to the development of type 2 diabetes through its effects on insulin resistance and fatty acid metabolism (10, 11).

References:

1. Idriss, H.T. and J.H. Naismith (2000) Microsc. Res. Tech. **50**:184.
2. Hehlgans, T. and K. Pfeffer (2005) Immunology **115**:1.
3. Zucker, K. *et al.* (1994) Lymphokine Cytokine Res. **13**:191.
4. Tang, P. *et al.* (1996) Biochemistry **35**:8216.
5. Eissner G. *et al.* (2004) Cytokine Growth Factor Rev. **15**:353.
6. Black, R.A. *et al.* (1997) Nature **385**:729.
7. Moss, M.L. *et al.* (1997) Nature **385**:733.
8. Loetscher, H. *et al.* (1991) J. Biol. Chem. **266**:18324.
9. Clark, I.A. (2007) Cytokine Growth Factor Rev. **18**:335.
10. Romanatto, T. *et al.* (2007) Peptides **28**:1050.
11. Hector, J. *et al.* (2007) Horm. Metab. Res. **39**:250.

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