

DESCRIPTION

Species Reactivity	Canine
Specificity	Detects canine TNF- α in ELISAs and Western blots. In sandwich immunoassays, approximately 40% cross-reactivity with recombinant human TNF- α and recombinant rhesus macaque TNF- α is observed, less than 2% cross-reactivity with recombinant porcine (rp) TNF- α is observed, and less than 0.5% cross-reactivity with recombinant mouse (rm) TNF- α , recombinant rat (rr) TNF- α , recombinant cotton rat (rcr) TNF- α , and recombinant equine TNF- α is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant canine TNF- α Val77-Leu233 Accession # P51742
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

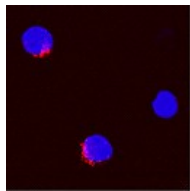
APPLICATIONS

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.

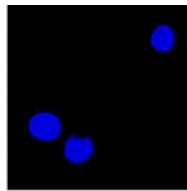
	Recommended Concentration	Sample
Western Blot	0.1 μ g/mL	Recombinant Canine TNF- α (Catalog # 1507-CT)
Immunocytochemistry	5-15 μ g/mL	See Below
Canine TNF-α Sandwich Immunoassay		Reagent
ELISA Capture	2-8 μ g/mL	Canine TNF- α Antibody (Catalog # MAB1507)
ELISA Detection	0.1-0.4 μ g/mL	Canine TNF- α Biotinylated Antibody (Catalog # BAF1507)
Standard		Recombinant Canine TNF- α (Catalog # 1507-CT)

DATA

Immunocytochemistry



Treated



Untreated (control)

TNF- α in Canine PBMCs.
TNF- α was detected in immersion fixed canine peripheral blood mononuclear cells (PBMCs) stimulated with PMA and calcium ionomycin using Goat Anti-Canine TNF- α Biotinylated Antigen Affinity-purified Polyclonal Antibody (Catalog # BAF1507) at 15 μ g/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Streptavidin (red; Catalog # NL999) 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.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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

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 consists 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:

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