Human TNF-α Antibody

Polyclonal Goat IgG

Catalog Number: AB-210-NA

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TNF-α in direct ELISAs and Western blots. In direct ELISAs, less than 5% cross-reactivity with recombinant canine TNF-α, recombinant bovine TNF-α, recombinant rat TNF-α, recombinant equine TNF-α, and recombinant cotton rat TNF-α is observed.
Source	Polyclonal Goat IgG
Purification	Protein A or G purified
Immunogen	*E. coli*-derived recombinant human TNF-α Val177-Leu233 Accession # P01375
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.

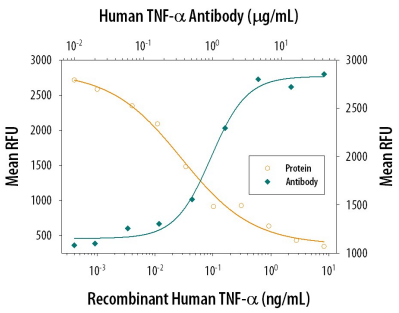
APPLICATIONS

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	1 µg/mL	Recombinant Human TNF-α (Catalog # 210-TA)
Neutralization	Measured by its ability to neutralize TNF-α-induced cytotoxicity in the L-929 mouse fibroblast cell line [Matthews, N. and M.L. Neale (1987) in Lymphokines and Interferons, A Practical Approach. Clemens, M.J. *et al.* (eds): IRL Press. 221]. The Neutralization Dose (ND_{50}) is typically 0.05-0.25 µg/mL in the presence of 0.25 ng/mL Recombinant Human TNF-α and 1 µg/mL actinomycin D.	

DATA

Neutralization



Cytotoxicity Induced by TNF-α and Neutralization by Human TNF-α Antibody. Recombinant Human TNF-α (Catalog # 210-TA) induces cytotoxicity in the the L-929 mouse fibroblast cell line in a dose-dependent manner (orange line). Cytotoxicity elicited by Recombinant Human TNF-α (0.25 ng/mL) is neutralized (green line) by increasing concentrations of Human TNF-α Polyclonal Antibody (Catalog # AB-210-NA). The ND_{50} is typically 0.05-0.25 µg/mL in the presence of the metabolic inhibitor actinomycin D (1 µg/mL).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 1 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	**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 and TNFSF1A, 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). Human 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, human TNF-α shares 97% aa sequence identity with rhesus and 71% - 92% with bovine, canine, cotton rat, equine, feline, mouse, porcine, and rat 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 costimulation 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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7. Moss, M.L. *et al.* (1997) Nature **385**:733.
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