Human TNF-α Antibody
Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-210-NA

**DESCRIPTION**

**Species Reactivity**  
Human

**Specificity**  
Detects human TNF-α in direct ELISAs and Western blots. In direct ELISAs, approximately 50% cross-reactivity with recombinant feline TNF-α, recombinant canine TNF-α, recombinant rhesus monkey TNF-α, and recombinant equine TNF-α is observed and approximately 15% cross-reactivity with recombinant cotton rat TNF-α, recombinant mouse TNF-α, recombinant rat TNF-α, and recombinant guinea pig TNF-α is observed and less than 5% cross-reactivity with recombinant porcine TNF-α and recombinant bovine TNF-α is observed.

**Source**  
Polyclonal Goat IgG

**Purification**  
Antigen Affinity-purified

**Immunogen**  
*E. coli*-derived recombinant human TNF-α

Val77-Leu233

Accession # P01375

**Endotoxin Level**  
<0.10 EU per 1 μg of the antibody by the LAL method.

**Formulation**  
Lyophilized from a 0.2 mg/mL filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

**Recommended Concentration**  
Western Blot 0.1 μg/mL

Immunocytochemistry 5-15 μg/mL

**Sample**  
Recombinant Human TNF-α (Catalog # 210-TA)

**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**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Blot</td>
<td>0.1 μg/mL</td>
</tr>
<tr>
<td>Immunocytochemistry</td>
<td>5-15 μg/mL</td>
</tr>
</tbody>
</table>

**Sample**  
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 0.01-0.06 μg/mL in the presence of 0.75 ng/mL Recombinant Human TNF-α.

**DATA**

**Neutralization**

Human TNF-α Antibody (μg/mL)

Cytotoxicity Induced by TNF-α and Neutralization by Human TNF-α Antibody.

Recombinant Human TNF-α (Catalog # 210-TA) induces cytotoxicity in the L-929 mouse fibroblast cell line in a dose-dependent manner (orange line). Cytotoxicity elicited by Recombinant Human TNF-α (0.75 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human TNF-α Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-210-NA). The ND$_{50}$ is typically 0.01-0.06 μg/mL.

**Immunocytochemistry**

TNF-α in Human PBMCs. TNF-α was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) using Goat Anti-Human TNF-α Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-210-NA) at 5 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**

**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.

*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C.

**Stability & Storage**

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.

**PLEASE NOTE**

- Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C.

**REFERENCES**

- Press. 221. The Neutralization Dose (ND$_{50}$) is typically 0.01-0.06 μg/mL in the presence of 0.75 ng/mL Recombinant Human TNF-α.

- 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 0.01-0.06 μg/mL in the presence of 0.75 ng/mL Recombinant Human TNF-α.
Tumor necrosis factor alpha (TNF-α), also known as cachectin and TNFSF2, 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. Human TNF-α consists of a 35 amino acid (aa) cytoplasmic domain, a 21 aa transmembrane segment, and a 177 aa extracellular domain (ECD). 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. Ligation of this complex induces reverse signaling that promotes lymphocyte costimulation but diminishes monocyte responsiveness. Cleavage of membrane bound TNF-α by TACE/ADAM17 releases a 55 kDa soluble trimeric form of TNF-α. TNF-α trimer binds the ubiquitous TNF RI and the hematopoietic cell-restricted TNF RII, both of which are also expressed as homotrimers. TNF-α regulates lymphoid tissue development through control of apoptosis. It also promotes inflammatory responses by inducing the activation of vascular endothelial cells and macrophages. TNF-α is a key cytokine in the development of several inflammatory disorders. It contributes to the development of type 2 diabetes through its effects on insulin resistance and fatty acid metabolism.