

| DESCRIPTION | |
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| 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 | <i>E. coli</i> -derived recombinant human TNF- α Val77-Leu233 Accession # P01375 |
| Endotoxin Level | <0.10 EU per 1 μ g of the antibody by the LAL method. |
| Formulation | Lyophilized from a 0.2 μ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μ m filtered solution in PBS. |

| APPLICATIONS | | |
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| Please Note: Optimal dilutions should be determined by each laboratory for each application. <i>General Protocols</i> are available in the <i>Technical Information</i> section on our website. | | |
| | Recommended Concentration | Sample |
| Western Blot | 0.1 μ g/mL | Recombinant Human TNF- α (Catalog # 210-TA) |
| Immunocytochemistry | 5-15 μ g/mL | See Below |
| 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 <i>Lymphokines and Interferons, A Practical Approach</i> . Clemens, M. J. <i>et al.</i> (eds): IRL Press. 221. The Neutralization Dose (ND ₅₀) is typically 0.01-0.06 μ g/ml in the presence of 0.75 ng/mL Recombinant Human TNF- α . | |

| DATA | |
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| <p>Neutralization</p> <p>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 ND₅₀ is typically 0.01-0.06 μg/mL.</p> | <p>Immunocytochemistry</p> <p>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.</p> |

| PREPARATION AND STORAGE | |
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| 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 | Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <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 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 trimers bind 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.