**DESCRIPTION**

**Species Reactivity**: Bovine

**Specificity**: Detects TNF-α in ELISAs and Western blots. In sandwich immunoassays, less than 0.3% cross-reactivity with recombinant human TNF-α, recombinant mouse TNF-α, recombinant rat TNF-α, recombinant feline TNF-α, recombinant equine TNF-α, recombinant porcine TNF-α, recombinant cotton rat TNF-α, and rhesus macaque TNF-α is observed.

**Source**: Polyclonal Goat IgG

**Purification**: Antigen Affinity-purified

**Immunogen**: E. coli-derived recombinant bovine TNF-α Leu78-Leu234

**Accession #**: Q06599

**Formulation**: Lyophilized from a 0.2 μm 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.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Recommended Concentration</th>
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<tbody>
<tr>
<td>Western Blot</td>
<td>0.1 μg/mL Recombinant Bovine TNF-α (Catalog # 2279-BT)</td>
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<tr>
<td>Immunocytochemistry</td>
<td>5-15 μg/mL See Below</td>
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**Bovine TNF-α Sandwich Immunoassay**

- **ELISA Capture**: 0.2-0.8 μg/mL Bovine TNF-α Antibody (Catalog # AF2279)
- **ELISA Detection**: 0.1-0.4 μg/mL Bovine TNF-α Biotinylated Antibody (Catalog # BAF2279)
- **Standard**: Recombinant Bovine TNF-α (Catalog # 2279-BT)

**DATA**

**Immunocytochemistry**

TNF-α in Bovine PBMCs. TNF-α was detected in immersion fixed bovine peripheral blood mononuclear cells (PBMCs) using Goat Anti-Bovine TNF-α Biotinylated Antigen Affinity-purified Polyclonal Antibody (Catalog # BAF2279) at 15 μg/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**: 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.
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 (1, 2). Bovine TNF-α consists of a 35 amino acid (aa) cytoplasmic domain, a 21 aa transmembrane segment, and a 178 aa extracellular domain (ECD) (3). Within the ECD, bovine TNF-α shares 64%-83% sequence identity with canine, cotton rat, equine, human, mouse, porcine, rat, and rhesus 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 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: