**DESCRIPTION**

**Species Reactivity**  Cotton Rat  

**Specificity**  Detects cotton rat TNF-α in direct ELISAs and Western blots. In direct ELISAs, approximately 10% cross-reactivity with recombinant human (rh) TNF-α is observed and no cross-reactivity with rhAPRIL, rhBAFF, rhED-A2, recombinant mouse (rm) EDA, rhFas Ligand, rhGITR Ligand, rmLIGHT, rhOX40 Ligand, rmTNF-α, recombinant porcine TNF-α, recombinant rat TNF-α, recombinant rhesus macaque TNF-α, rhTRAIL, rhTRANCE, rhTWEAK, or rhVEGI is observed.  

**Source**  Monoclonal Mouse IgG1, Clone # 159813  

**Purification**  Protein A or G purified from hybridoma culture supernatant  

**Immunogen**  E. coli-derived recombinant cotton rat TNF-α  

Accession #: AAL18818  

**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.  

*Small pack size (SP) is supplied as a 0.2 μm filtered solution in PBS.*

**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>Western Blot</th>
<th>Recommended Concentration</th>
<th>Sample</th>
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<tr>
<td></td>
<td>1 μg/mL</td>
<td>Recombinant Cotton Rat TNF-α (Catalog # 1011-CR)</td>
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**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 (ND₅₀) is typically 0.04-0.2 μg/mL in the presence of 1 ng/mL Recombinant Cotton Rat TNF-α and 1 μg/mL actinomycin D.

**DATA**

**Neutralization**

![Neutralization Graph](https://via.placeholder.com/150)

Cytotoxicity Induced by TNF-α and Neutralization by Cotton Rat TNF-α Antibody. Recombinant Cotton Rat TNF-α (Catalog # 1011-CR) induces cytotoxicity in the L-929 mouse fibroblast cell line in a dose-dependent manner (orange line), as measured by crystal violet staining. Cytotoxicity elicited by Recombinant Cotton Rat TNF-α (1 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Cotton Rat TNF-α Monoclonal Antibody (Catalog # MAB10111). The ND₅₀ is typically 0.04-0.2 μg/mL in the presence of 1 μg/mL actinomycin D.

**PREPARATION AND STORAGE**

**Reconstitution**  Reconstitute at 0.5 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.  
- 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). The 156 amino acid (aa) cotton rat TNF-α is homologous to a portion of the extracellular domain (ECD) of TNF-α from other species (3). It shares 64%-76% aa sequence identity with bovine, canine, equine, feline, 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 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: