

**DESCRIPTION**

<b>Species Reactivity</b>	Porcine
<b>Specificity</b>	Detects porcine TNF- $\alpha$ in ELISAs.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 103302
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant porcine TNF- $\alpha$ Arg78-Leu232 Accession # P23563
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m 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.

<b>Porcine TNF-<math>\alpha</math> Sandwich Immunoassay</b>		<b>Reagent</b>
<b>ELISA Capture</b>	2-8 $\mu$ g/mL	Porcine TNF- $\alpha$ Antibody (Catalog # MAB6902)
<b>ELISA Detection</b>	0.5-2.0 $\mu$ g/mL	Porcine TNF- $\alpha$ Biotinylated Antibody (Catalog # BAM6903)
<b>Standard</b>		Recombinant Porcine TNF- $\alpha$ (Catalog # 690-PT)

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

Tumor necrosis factor alpha (TNF- $\alpha$ ), 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- $\alpha$  is produced by a wide variety of immune and epithelial cell types (1, 2). Porcine TNF- $\alpha$  consists of a 35 amino acid (aa) cytoplasmic domain, a 21 aa transmembrane segment, and a 176 aa extracellular domain (ECD) (3). Within the ECD, porcine TNF- $\alpha$  shares 69% - 86% aa sequence identity with bovine, canine, cotton rat, equine, feline, human, mouse, rat, and rhesus TNF- $\alpha$ . 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- $\alpha$  by TACE/ADAM17 releases a 55 kDa soluble trimeric form of TNF- $\alpha$  (6, 7). TNF- $\alpha$  trimers bind the ubiquitous TNF RI and the hematopoietic cell-restricted TNF RII, both of which are also expressed as homotrimers (1, 8). TNF- $\alpha$  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- $\alpha$  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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