



# Recombinant Mouse Anti-Rat TNF- $\alpha$ Monoclonal Antibody, clone 56529S (CABT- Z180R)

This product is for research use only and is not intended for diagnostic use.

## PRODUCT INFORMATION

<b>Product Overview</b>	Low endotoxin azide free antibody.
<b>Specificity</b>	Detects rat TNF-alpha in direct ELISAs. In ELISAs, this antibody shows less than 3% cross-reactivity with recombinant mouse (rm) TNF-alpha and less than 0.2% cross-reactivity with rhTNF-alpha, rpTNF-alpha, and rhTNF-beta.
<b>Immunogen</b>	E. coli-derived recombinant rat TNF-alpha. Accession # P16599
<b>Isotype</b>	IgG1
<b>Source/Host</b>	Mouse
<b>Species Reactivity</b>	Rat
<b>Clone</b>	56529S
<b>Purification</b>	Protein A or G purified
<b>Conjugate</b>	Unconjugated
<b>Applications</b>	ELISA, Neut Recommended concentration: ELISA(Cap): 2-8 $\mu$ g/mL We recommend the following for sandwich ELISA(Capture-Detection): CABT-Z180R-CABT-Z182R
<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.

<b>Format</b>	Lyophilized
<b>Size</b>	100 µg
<b>Buffer</b>	PBS with Trehalose.  Endotoxin Level<0.10 EU per 1 µg of the antibody by the LAL method.
<b>Preservative</b>	None
<b>Storage</b>	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.
<b>Ship</b>	Wet ice

## BACKGROUND

### Introduction

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. Rat TNF-alpha consists of a 35 amino acid (aa) cytoplasmic domain, a 21 aa transmembrane segment, and a 179 aa extracellular domain (ECD). Within the ECD, rat TNF-alpha shares 94% aa sequence identity with mouse and 69% - 76% with bovine, canine, cotton rat, equine, feline, human, porcine, and rhesus TNF-alpha. 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 co-stimulation but diminishes monocyte responsiveness. Cleavage of membrane bound TNF-alpha by TACE/ADAM17 releases a 55 kDa soluble trimeric form of TNF-alpha. TNF-alpha trimers bind the ubiquitous TNF RI and the hematopoietic cell-restricted TNF RII, both of which are also expressed as homotrimers. TNF-alpha regulates lymphoid tissue development through control of apoptosis. It also promotes inflammatory responses by inducing the activation of vascular endothelial cells and macrophages. TNF-alpha 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.

### Keywords

APC1 protein;Cachectin;Cachetin;DIF;TNF;TNF, monocyte-derived;TNFA;TNF-A;TNFalpha;TNF-alpha;TNF-alphacachectin;TNFATNF, macrophage-derived;TNFG1F;TNFSF1A;TNFSF2;TNFSF2TNF superfamily, member 2;tumor necrosis factor (TNF superfamily, member 2);tumor necrosis factor alpha;Tumor necrosis factor ligand superfamily member 2;tumor necrosis factor;tumor necrosis factor-alpha

## GENE INFORMATION

Gene Name	Tnf
Entrez Gene ID	<a href="#">24835</a>
UniProt ID	<a href="#">P16599</a>