

## APC Anti-Mouse TNF- $\alpha$ Antibody

<b>Catalog Number:</b>	203305, 203306
<b>Size:</b>	25 tests, 100 tests
<b>Target Name:</b>	TNF- $\alpha$ , TNF-alpha, Tumor necrosis factor- $\alpha$ , Macrophage cytotoxic factor (MCF)
<b>Regulatory Status:</b>	RUO

### PRODUCT DETAILS

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<b>Clone:</b>	MP6-XT22
<b>Application:</b>	Intracellular Flow Cytometry
<b>Reactivity:</b>	Mouse
<b>Format:</b>	APC
<b>Isotype:</b>	Rat IgG1
<b>Antibody Type:</b>	Monoclonal
<b>Formulation:</b>	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA
<b>Protein Concentration:</b>	Supplied at a lot-specific concentration.
<b>Storage&amp;Handling:</b>	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
<b>Recommended Usage:</b>	For flow cytometric staining, it is recommended to use 5 $\mu$ L of this reagent per 0.5-1.0 million cells in a 100 $\mu$ L volume. Optimal reagent performance should be determined by titration for each specific application. APC has an excitation max at 650 nm and an emission max at 660 nm.
<b>Excitation Laser:</b>	Red Laser (633 nm)
<b>Isotype Controls:</b>	303410
<b>Antibody Family:</b>	Mouse Antibodies

### BACKGROUND INFORMATION

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Mouse tumor necrosis factor-alpha (TNF- $\alpha$ ) is a pro-inflammatory cytokine produced primarily by activated macrophages, T cells, and other immune cells. It plays a central role in innate and adaptive immunity by regulating inflammation, cell survival, apoptosis, and immune cell activation. TNF- $\alpha$  is rapidly induced in response to infection or tissue injury and helps coordinate host defense by promoting cytokine production, leukocyte recruitment, and pathogen clearance.

Structurally, TNF- $\alpha$  is initially synthesized as a type II transmembrane protein that can be cleaved by metalloproteases such as TACE (ADAM17) to release a soluble form. Both membrane-bound and soluble TNF- $\alpha$  function as homotrimers, which are the biologically active forms. TNF- $\alpha$  exerts its effects by binding to two receptors, TNFR1 (p55) and TNFR2 (p75), which differ in expression patterns and downstream signaling pathways.

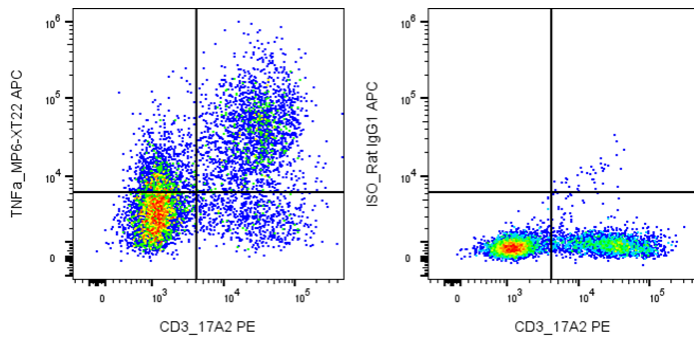
The primary ligands for TNF receptors are TNF- $\alpha$  itself and the related cytokine lymphotoxin- $\alpha$ . Engagement of TNFR1 often leads to

activation of NF- $\kappa$ B and MAPK pathways or induction of apoptosis, while TNFR2 is more associated with immune regulation and cell survival.

In disease, dysregulated TNF- $\alpha$  production contributes to chronic inflammatory and autoimmune conditions in mouse models, including arthritis, colitis, and sepsis. Therapeutically, TNF- $\alpha$  is a major target in inflammatory disease, and anti-TNF biologics have been widely developed. In mice, TNF modulation is also used experimentally to study inflammation, cancer immunity, and immune-mediated pathology.

## PRODUCT DATA

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PMA + Ionomycin-stimulated mouse splenocytes were stained with PE anti-Mouse CD3 clone 17A2, fixed, permeabilized, and then stained with APC anti-Mouse TNF- $\alpha$  clone MP6-XT22 (left) or an isotype control (right).

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