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iF647 Anti-Mouse TNF-α Antibody

Catalog Number:	203307, 203308
Size:	25 μg, 100 μg
Target Name:	TNF-α, TNF-alpha, Tumor necrosis factor-α, Macrophage cytotoxic factor (MCF)
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	MP6-XT22
Application:	Intracellular Flow Cytometry
Reactivity:	Mouse
Format:	iF647
Isotype:	Rat IgG1
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA
Protein Concentration:	Supplied at a lot-specific concentration.
Storage&Handling:	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Recommended Usage:	For flow cytometric staining, it is recommended to use less than 0.2 µg of this reagent per 0.5-1.0 million cells in a 100 µL volume. Optimal reagent performance should be determined by titration for each specific application. iF647 has an excitation max at 656 nm and an emission max at 670 nm.
Excitation Laser:	Red Laser (633 nm)
Isotype Controls:	303407
Antibody Family:	Mouse Antibodies
GeneID:	21926
RRID:	AB_3759315

BACKGROUND INFORMATION

Mouse tumor necrosis factor-alpha (TNF-α) 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-α is rapidly induced in response to infection or tissue injury and helps coordinate host defense by promoting cytokine production, leukocyte recruitment, and pathogen clearance.

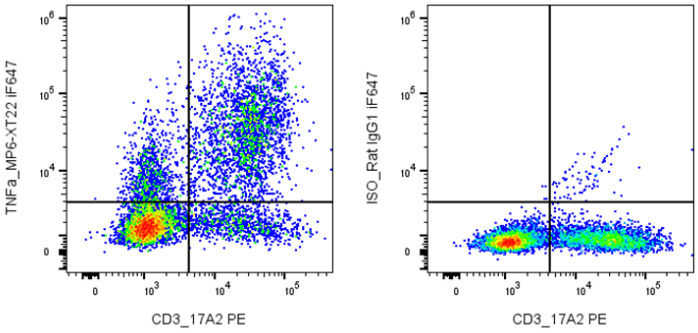
Structurally, TNF-α is initially synthesized as a type II transmembrane protein that can be cleaved by metalloproteases such as TACE (ADAM17) to release a soluble form. Both membrane-bound and soluble TNF-α function as homotrimers, which are the

biologically active forms. TNF-α 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-α itself and the related cytokine lymphotoxin-α. Engagement of TNFR1 often leads to activation of NF-κB and MAPK pathways or induction of apoptosis, while TNFR2 is more associated with immune regulation and cell survival.

In disease, dysregulated TNF-α production contributes to chronic inflammatory and autoimmune conditions in mouse models, including arthritis, colitis, and sepsis. Therapeutically, TNF-α 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



PMA + Ionomycin-stimulated mouse splenocytes were stained with PE anti-Mouse CD3 clone 17A2, fixed, permeabilized, and then stained with iF647 anti-Mouse TNF-a clone MP6-XT22 (left) or an isotype control (right).

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