# Purified anti-mouse TNF-α Antibody

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| **Catalog# / Size** | 506301 / 50 µg<br>506302 / 500 µg |
| **Clone** | MP6-XT22 |
| **Other Names** | Tumor necrosis factor-α, Cachectin, Necrosin, Macrophage cytotoxic factor (MCF), Differentiation inducing factor (DIF), TNFSF-2, TNF-a, TNF-alpha |
| **Isotype** | Rat IgG1, κ |
| **Description** | TNF-α is secreted by macrophages, monocytes, neutrophils, T-cells (principally $CD4^+$), and NK -cells. Many transformed cell lines also secrete TNF-α. Monomeric mouse TNF-α is a 156 amino acid protein (N-glycosylated) with a reported molecular weight of 17.5 kD. TNF-α forms multimeric complexes; stable trimers are most common in solution. A 26 kD membrane form of TNF-α has also been described. TNF-α binding to surface receptors elicits a wide array of biologic activities including: cytolysis and cytostasis of many tumor cell lines *in vitro*, hemorrhagic necrosis of tumors *in vivo*, increased fibroblast proliferation, and enhanced chemotaxis and phagocytosis in neutrophils. |

## Product Details

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| **Reactivity** | Mouse |
| **Antibody Type** | Monoclonal |
| **Host Species** | Rat |
| **Immunogen** | *E. coli*-expressed, recombinant mouse TNF-α |
| **Formulation** | Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide. |
| **Preparation** | The antibody was purified by affinity chromatography. |
| **Concentration** | 0.5 mg/ml |
| **Storage & Handling** | The antibody solution should be stored undiluted between 2°C and 8°C. |
| **Application** | ELISA, ICFC - *Quality tested*<br>CyTOF®, IF - *Validated*<br>IHC, WB - *Reported in the literature* |
| **Recommended Usage** | Each lot of this antibody is quality control tested by ELISA assay. For ELISA capture applications, a concentration range of 2.0 - 6.0 µg/ml is recommended. To obtain a linear standard curve, serial dilutions of mouse TNF-α recombinant protein ranging from 500 to 4 pg/ml are recommended for each ELISA plate. It is recommended that the reagent be titrated for optimal performance for each application. |
| **Application Notes** | **ELISA or ELISPOT Detection:** The biotinylated MP6-XT22 antibody is useful as a detection antibody for a sandwich ELISA or ELISPOT assay, when used in conjunction with purified 6B8 antibody (Cat. Nos. 510802 & 510804) as the capture antibody.<br>**ELISA Capture**: The purified MP6-XT22 antibody is useful as the capture antibody in a sandwich ELISA when used in conjunction with the biotinylated Poly5160 antibody (Cat. No. 516003) as the detection antibody and recombinant mouse TNF-α (Cat. No. 575809) as the standard.<br>**Flow Cytometry[6,11,12]:** The fluorochrome-labeled MP6-XT22 antibody is useful for intracellular immunofluorescent staining and flow cytometric analysis to identify TNF-α-producing cells within mixed cell populations.<br>**Neutralization[1,5,10,16,17]:** The MP6-XT22 antibody can neutralize the bioactivity of natural or recombinant TNF-α. The LEAF™ purified antibody (Endotoxin <0.1 EU/µg, Azide-Free, 0.2 µm filtered) is recommended for neutralization of mouse TNF-α bioactivity *in vivo* and *in vitro* (Cat. No. 506310). For *in vivo* studies or highly sensitive assays, we recommend Ultra-LEAF™ purified antibody (Cat. No. 506332) with a lower endotoxin limit than standard LEAF™ purified antibodies (Endotoxin <0.01 EU/µg).<br>**Additional reported applications (for the relevant formats) include:** Western blotting, immunohistochemical staining of paraformaldehyde-fixed, saponin-treated frozen tissue sections[7-9], *in vivo* detection[5], immunofluorescence, and immunocytochemistry.<br>**Note:** For testing mouse TNF-α in serum, plasma or supernatant, BioLegend's ELISA Max™ Sets (Cat. No. 430901 to 430906) are specially developed and recommended. |

**Application References**

**(PubMed link indicates BioLegend citation)**


1. Abrams J, et al. 1992. Immunol. Rev. 127:5. (Neut)
2. Abrams J, et al. 1995. Curr. Prot. Immunol. John Wiley and Sons, New York. Unit 6.20
3. Mo X, et al. 1995. J. Virol. 69:1288.
4. Sarawar S, et al. 1994. J. Immunol. 153:1246.

5. Via C, et al. 2001. J. Immunol. 167:6821. (Neut)
6. Infante-Duarte C, et al. 2000 J. Immunol. 165:6107. (FC)
7. Jacobs M, et al. 2000. Immunology 100:494. (IHC)
8. Marinova-Mutachieva L, et al. 1997. Clin. Exp. Immunol. 107:507. (IHC)
9. Williams RO, et al. 2000. J. Immunol. 165:7240. (IHC)
10. Scanga CA, et al. 1999. Infect. Immun. 67:4531. (Neut)
11. Akilov OE, et al. 2007. J. Leukoc. Biol. 2007;10.1189/jlb.0706439. (FC)
12. Lawson BR, et al. 2007. J. Immunol. 178:5366. (FC)

**Product Citations**

1. Patole P, et al. 2005. J Am Soc Nephrol. 2.939583333. PubMed
2. Wu S, et al. 2006. Neurosci Lett. 394:158. PubMed
3. Dineen S, et al. 2010. Cancer Res . 70:2852. PubMed
4. Kapadia D, et al. 2011. PLoS One. 6:e19376. PubMed
5. Shin H, et al. 2017. PLoS One.. 10.1371/journal.ppat.1006544. PubMed
6. Borriello F, et al. 2018. Front Immunol. 8:1772. PubMed
7. Naito H et al. 2018. Developmental cell. 48(2):151-166 . PubMed
8. Sakai J, et al. 2017. Sci Rep. 1.283333333. PubMed
9. Chartrand K, et al. 2018. Front Immunol. 1.642361111. PubMed
10. Pushalkar S, et al. 2018. Cancer Discov. 0.613194444. PubMed
11. Knuschke T, et al. 2018. Front Immunol. 0.801388889. PubMed
12. Stelekati E, et al. 2018. Cell Rep. 2.445833333. PubMed

**RRID**

AB_315422 (BioLegend Cat. No. 506301)
AB_315423 (BioLegend Cat. No. 506302)

## Antigen Details

**Structure**

TNF superfamily; dimer/trimer; 17.5-150 kD (Mammalian)

**Bioactivity**

Paracrine/endocrine mediator of inflammatory and immune functions; selectively cytotoxic for transformed cells; endothelial cell alterations; chemoattractant

**Cell Sources**

Activated monocytes, neutrophils, macrophages, T cells, B cells, NK cells, LAK cells

**Cell Targets**

Monocytes, neutrophils, macrophages, T cells, fibroblasts, endothelial cells, osteoclasts, adipocytes, astroglia, microglia

**Receptors**

TNFRSF1A (TNF-R1, CD120a, TNFR-p60 Type β, p55); TNFRSF1B (TNF-R2, CD120b, TNFR-p80 Type A, p75)

**Cell Type**

Tregs

**Biology Area**

Immunology, Innate Immunity

**Molecular Family**

Cytokines/Chemokines

**Antigen References**

1. Fitzgerald K, et al. Eds. 2001. The Cytokine FactsBook. Academic Press, San Diego.
2. Beutler B, et al. 1988. Annu. Rev. Biochem. 57:505.
3. Beutler B, et al. 1989. Annu. Rev. Immunol. 7:625.
4. Tracey K, et al. 1993. Crit. Care Med. 21:S415.

**Regulation**

Processed by TACE for secretion; upregulated by interferons, IL-2, GM-CSF, substance P, bradykinin, PAF, immune complexes, and cyclooxygenase; downregulated by IL-6, TGF-β, vitamin D3, prostaglandin E2, and PAF antagonists

**Gene ID**

21926

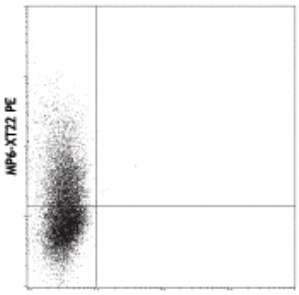
## Related Protocols

Sandwich ELISA Protocol

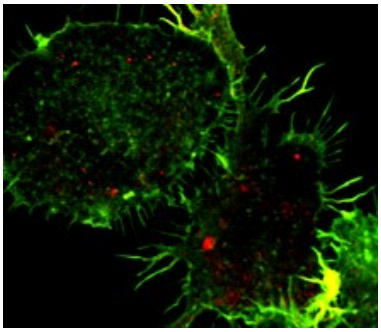
## Other Formats

APC anti-mouse TNF-α, FITC anti-mouse TNF-α, LEAF™ Purified anti-mouse TNF-α, PE anti-mouse TNF-α, Biotin anti-mouse TNF-α, Alexa Fluor® 488 anti-mouse TNF-α, Alexa Fluor® 647 anti-mouse TNF-α, Pacific Blue™ anti-mouse TNF-α, PerCP/Cyanine5.5 anti-mouse TNF-α, PE/Cyanine7 anti-mouse TNF-α, Brilliant Violet 421™ anti-mouse TNF-α, Brilliant Violet 605™ anti-mouse TNF-α, Ultra-LEAF™ Purified anti-mouse TNF-α, Brilliant Violet 650™ anti-mouse TNF-α, Alexa Fluor® 700 anti-mouse TNF-α, Purified anti-mouse TNF-α (Maxpar® Ready), Brilliant Violet 510™ anti-mouse TNF-α, Brilliant Violet 785™ anti-mouse TNF-α, APC/Cyanine7 anti-mouse TNF-α, PE/Dazzle™ 594 anti-mouse TNF-α, Brilliant Violet 711™ anti-mouse TNF-α, Brilliant Violet 750™ anti-mouse TNF-α

## Product Data




PMA/Ionomycin-stimulated BALB/c T cells were stained with MP6-XT22 PE



Immortalized murine bone marrow-derived macrophages stimulated overnight with LPS were stained with Atto-488 phalloidin (green) and purified TNF-α (clone MP6-XT22), secondarily stained with Goat anti-Rat IgG Dylight 594 (red). *Data provided by* James Harris, Trinity College.



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