

## Alexa Fluor® 647 anti-human TNF- $\alpha$ Antibody

<b>Catalog# / Size</b>	502916 / 100 tests
<b>Clone</b>	MAb11
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	Tumor necrosis factor- $\alpha$ , Cachectin, Necrosin, Macrophage cytotoxic factor (MCF), Differentiation inducing factor (DIF), TNFSF2
<b>Isotype</b>	Mouse IgG1, $\kappa$
<b>Description</b>	TNF- $\alpha$ is secreted by macrophages, monocytes, neutrophils, T cells, and NK cells. Many transformed cell lines also secrete TNF- $\alpha$ . Monomeric human TNF- $\alpha$ is a 157 amino acid protein (non-glycosylated) with a reported molecular weight of 17 kD. TNF- $\alpha$ forms multimeric complexes; stable trimers are most common in solution. A 26 kD membrane form of TNF- $\alpha$ has also been described. TNF- $\alpha$ binding to surface receptors elicits a wide array of biological activities including: cytolysis and cytostasis of many tumor cell lines <i>in vitro</i> , hemorrhagic necrosis of tumors <i>in vivo</i> , increased fibroblast proliferation, and enhanced chemotaxis and phagocytosis in neutrophils.

### Product Details

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<b>Verified Reactivity</b>	Human
<b>Reported Reactivity</b>	Cat, Chimpanzee, Baboon, Cynomolgus, Rhesus, Pigtailed Macaque, Sooty Mangabey, Pig
<b>Antibody Type</b>	Monoclonal
<b>Host Species</b>	Mouse
<b>Immunogen</b>	<i>E. coli</i> -expressed, recombinant human TNF- $\alpha$
<b>Formulation</b>	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA)
<b>Preparation</b>	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 647 under optimal conditions.
<b>Concentration</b>	Lot-specific (to obtain lot-specific concentration, please enter the lot number in our <a href="#">Concentration and Expiration Lookup</a> or <a href="#">Certificate of Analysis</a> online tools.)
<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. <b>Do not freeze.</b>
<b>Application</b>	<a href="#">ICFC - Quality tested</a>
<b>Recommended Usage</b>	Each lot of this antibody is quality control tested by <a href="#">intracellular immunofluorescent staining with flow cytometric analysis</a> . For flow cytometric staining, the suggested use of this reagent is 5 $\mu$ L per 10 <sup>6</sup> cells in 100 $\mu$ L volume. It is recommended that the reagent be titrated for optimal performance for each application.  * Alexa Fluor® 647 has a maximum emission of 668 nm when it is excited at 633nm / 635nm.  Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation.  <a href="#">View full statement regarding label licenses</a>
<b>Excitation Laser</b>	Red Laser (633 nm)
<b>Application Notes</b>	<b>ELISA or ELISPOT Detection:</b> The biotinylated MAb11 antibody is useful as the detection antibody in a sandwich ELISA or ELISPOT, when used in conjunction with the purified MAb1 antibody (Cat. No. 502802/502804) as the capture antibody.  <b>Flow Cytometry<sup>3,5,6,10</sup>:</b> The fluorochrome-labeled MAb11 antibody is useful for intracellular and membrane-bound immunofluorescent staining and flow cytometric analysis to identify TNF- $\alpha$ -producing cells within mixed cell populations.

**Additional reported applications (for the relevant formats) include:** neutralization<sup>1,2</sup>, immunohistochemical staining of paraformaldehyde-fixed, saponin-treated frozen tissue sections<sup>4</sup> and acetone-fixed frozen tissue sections<sup>8</sup>, immunocytochemistry<sup>7</sup>, and immunofluorescence<sup>9</sup>. The MAb11 antibody can neutralize the bioactivity of natural or recombinant TNF-a.

**Note:** For testing human TNF-a in serum or plasma, BioLegend's ELISA Max™ Sets (Cat. No. 430201 to 430206) are specially developed and recommended. The LEAF™ purified antibody (Endotoxin <0.1 EU/μg, Azide-Free, 0.2 μm filtered) is recommended for neutralization of human TNF-a bioactivity (Cat. No. 502922).

The Purified MAb1 antibody is useful in neutralization<sup>2</sup> and as the capture antibody in a sandwich ELISA or ELISPOT assay, when used in conjunction with the biotinylated MAb11 antibody (Cat. No. 502904/502914) as the detecting antibody.

Clone MAb11 cross-reacts to Cat<sup>11</sup>

## Application References

(PubMed link indicates BioLegend citation)

1. Rathjen D, *et al.* 1991. *Mol. Immunol.* 28:79. (Neut)
2. Ablamunits V, *et al.* 2010. *Eur. J. Immunol.* 40:2891. (Neut)
3. Enrquez J, *et al.* 2002. *Adv. Perit. Dial.* 18:177. (ICFC)
4. Andersson U, *et al.* 1999. *Detection and quantification of gene expression.* New York:Springer-Verlag. (IHC)
5. Chen H, *et al.* 2005. *J. Immunol.* 175:591. (ICFC)
6. Iwamoto S, *et al.* 2007. *J. Immunol.* 179:1449. (ICFC) [PubMed](#)
7. Andersson U, *et al.* 2000. *J. Exp. Med.* 192:565. (ICC)
8. Moormann AM, *et al.* 1999. *J. Infect. Dis.* 180:1987. (IHC)
9. Zhao XJ, *et al.* 2003. *J. Immunol.* 170:2923. (IF)
10. Rieger R, *et al.* 2009. *Cancer Gene Ther.* 1:53-64. (FC)
11. Maksierekul S, *et al.* 2009. *Vaccine.* 28:3754 (FC)

## Product Citations

1. Franzoni G, *et al.* 2013. *Clin Vaccine Immunol.* 20:1604. [PubMed](#)
2. Muenchhoff M, *et al.* 2016. *Sci Transl Med.* 8: 358ra125. [PubMed](#)
3. Fang F, *et al.* 2022. *JCI Insight.* 7: [PubMed](#)
4. Lee J, *et al.* 2020. *Sci Rep.* 10:17753. [PubMed](#)
5. Jacquelot N, *et al.* 2016. *J Invest Dermatol.* 136: 994-1001. [PubMed](#)
6. Vacafloras A, *et al.* 2016. *PLoS One.* 11: 0157175. [PubMed](#)
7. Huang RS, *et al.* 2021. *Curr Protoc.* 1:e246. [PubMed](#)
8. Ricklin ME, *et al.* 2017. *Sci Rep.* 7:16379. [PubMed](#)
9. Fang F, *et al.* 2021. *Cell Rep.* 37:109981. [PubMed](#)
10. Yin S, *et al.* 2015. *Sci Rep.* 5: 14432. [PubMed](#)
11. Auray G, *et al.* 2016. *J Immunol.* 197(12):4791-4806. [PubMed](#)
12. Harris LD, *et al.* 2020. *Front Cell Infect Microbiol.* 10:120. [PubMed](#)

RRID

AB\_493123 (BioLegend Cat. No. 502916)

## Antigen Details

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<b>Structure</b>	TNF superfamily; dimer/trimer; 17 kD (Mammalian)
<b>Bioactivity</b>	Paracrine/endocrine mediator of inflammatory and immune functions; selectively cytotoxic for transformed cells; chemoattractant
<b>Cell Sources</b>	Activated monocytes, neutrophils, macrophages, T cells, B cells, NK cells, LAK cells
<b>Cell Targets</b>	Monocytes, neutrophils, macrophages, T cells, fibroblasts, endothelial cells, osteoclasts, adipocytes, astroglia, microglia
<b>Receptors</b>	TNFRSF1A (TNF-R1, CD120a, TNFR-p60 Type β, p55); TNFRSF1B (TNF-R2, CD120b, TNFR-p80 Type A, p75)
<b>Cell Type</b>	Neutrophils, Tregs
<b>Biology Area</b>	Cell Biology, Immunology, Innate Immunity, Neuroinflammation, Neuroscience
<b>Molecular Family</b>	Cytokines/Chemokines
<b>Antigen References</b>	<ol style="list-style-type: none"><li>1. Fitzgerald K, <i>et al.</i> Eds. 2001. <i>The Cytokine FactsBook.</i> Academic Press, San Diego.</li><li>2. Beutler B, <i>et al.</i> 1988. <i>Annu. Rev. Biochem.</i> 57:505.</li><li>3. Beutler B, <i>et al.</i> 1989. <i>Annu. Rev. Immunol.</i> 7:625.</li><li>4. Tracey K, <i>et al.</i> 1993. <i>Crit. Care Med.</i> 21:S415.</li></ol>
<b>Regulation</b>	Type II integral membrane protein processed by TACE for secretion; upregulated by interferons, IL-2, GM-CSF, substance P, bradykinin, PAF, immune complexes, cyclooxygenase; downregulated by IL-6, TGF-β, vitamin D3, prostaglandin E2, PAF antagonists
<b>Gene ID</b>	<a href="#">7124</a>

## Related Protocols

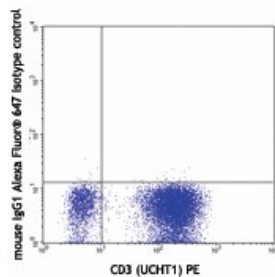
[Surface and Intracellular Cytokine Staining for Flow Cytometry - Video](#)

[Intracellular Flow Cytometry Staining Protocol](#)

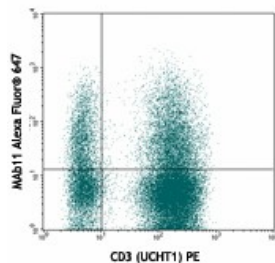
## Other Formats

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

## Product Data



PMA/ionomycin-stimulated (6 hours) human peripheral blood lymphocytes stained with mouse IgG1 Alexa Fluor® 647 isotype control and CD3 (UCHT1) PE



PMA/ionomycin-stimulated (6 hours) human peripheral blood lymphocytes stained with MAb11 Alexa Fluor® 647 and CD3 (UCHT1) PE

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