

## Pacific Blue™ anti-human TNF-α Antibody

<b>Catalog# / Size</b>	502920 / 100 µg
<b>Clone</b>	MAb11
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	Tumor necrosis factor-α, Cachectin, Necrosin, Macrophage cytotoxic factor (MCF), Differentiation inducing factor (DIF), TNFSF2
<b>Isotype</b>	Mouse IgG1, κ
<b>Description</b>	TNF-α is secreted by macrophages, monocytes, neutrophils, T cells, and NK cells. Many transformed cell lines also secrete TNF-α. Monomeric human TNF-α is a 157 amino acid protein (non-glycosylated) with a reported molecular weight of 17 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 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

---

<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-α
<b>Formulation</b>	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
<b>Preparation</b>	The antibody was purified by affinity chromatography, and conjugated with Pacific Blue™ under optimal conditions.
<b>Concentration</b>	0.5 mg/ml
<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> <a href="#">FC - Reported in the literature, not verified in house</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 ≤ 0.5 µg per 10 <sup>6</sup> cells in 100 µl volume. It is recommended that the reagent be titrated for optimal performance for each application.  * Pacific Blue™ has a maximum emission of 455 nm when it is excited at 405 nm. Prior to using Pacific Blue™ conjugate for flow cytometric analysis, please verify your flow cytometer's capability of exciting and detecting the fluorochrome.  Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation.  <a href="#">View full statement regarding label licenses</a>
<b>Excitation Laser</b>	Violet Laser (405 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-α-

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- $\alpha$ .

**Note:** For testing human TNF- $\alpha$  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/ $\mu$ g, Azide-Free, 0.2  $\mu$ m filtered) is recommended for neutralization of human TNF- $\alpha$  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

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. Maksaarekul S, *et al.* 2009. *Vaccine.* 28:3754 (FC)

## Product Citations

1. Vaccari M, *et al.* 2018. *Nat Med.* 24:847. [PubMed](#)
2. Bilich T, *et al.* 2021. *Cancer Discov.* 11:1982. [PubMed](#)
3. Braun J, *et al.* 2020. *Nature.* 587:270. [PubMed](#)
4. Franzoni G, *et al.* 2013. *Clin Vaccine Immunol.* 20:1604. [PubMed](#)
5. Ebner F, *et al.* 2020. *NPJ Vaccines.* 5:25. [PubMed](#)
6. Lübke M, *et al.* 2020. *J Exp Med.* 217:00:00. [PubMed](#)
7. D, *et al.* 2016. *Tuberculosis.* 95: 470-475. [PubMed](#)
8. Bauer J, *et al.* 2022. *Nat Commun.* 13:6401. [PubMed](#)
9. Ebner F, *et al.* 2020. *NPJ Vaccines.* 5:25. [PubMed](#)
10. Bilich T, *et al.* 2021. *Science Translational Medicine.* 13(590):. [PubMed](#)
11. Braun M, *et al.* 2014. *PLoS Pathog.* 10:1004521. [PubMed](#)
12. Bilich T, *et al.* 2020. *Blood Cancer J.* 10:24. [PubMed](#)
13. Reiske L, *et al.* 2019. *Animals (Basel).* 0.753472222. [PubMed](#)
14. Heitmann JS, *et al.* 2021. *Nature.* Online ahead of print. [PubMed](#)
15. Yin Q, *et al.* 2021. *Proc Natl Acad Sci U S A.* 118: . [PubMed](#)
16. Carnevale J, *et al.* 2022. *Nature.* 609:174. [PubMed](#)
17. Baban B, *et al.* 2021. *JCI Insight.* 6:00. [PubMed](#)
18. Morgan S, *et al.* 2016. *J Immunol.* 196: 5014 - 5023. [PubMed](#)
19. McWilliam H, *et al.* 2016. *Nat Immunol.* 17: 531-537. [PubMed](#)
20. Keller A, *et al.* 2017. *Nat Immunol.* 18:402-411. [PubMed](#)
21. Liu W, *et al.* 2022. *Bio Protoc.* 12:e4285. [PubMed](#)
22. Hamilton JR, *et al.* 2021. *Cell Reports.* 35(9):109207. [PubMed](#)
23. Salvany-Celades M *et al.* 2019. *Cell Rep.* 27(9):2537-2547 . [PubMed](#)
24. Bidmon N, *et al.* 2015. *J Immunol.* 194:6177. [PubMed](#)

RRID AB\_528965 (BioLegend Cat. No. 502920)

## Antigen Details

---

<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 $\beta$ , 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- $\beta$ , vitamin D3, prostaglandin E2, PAF antagonists
<b>Gene ID</b>	<a href="#">7124</a>

## Related Protocols

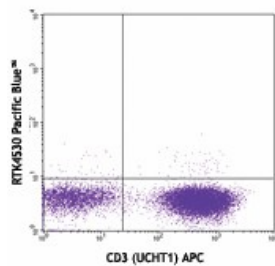
[Surface and Intracellular Cytokine Staining for Flow Cytometry - Video](#)

[Intracellular Flow Cytometry Staining Protocol](#)

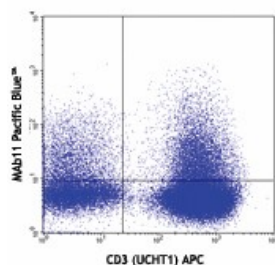
## Other Formats

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

## Product Data



PMA/ionomycin-stimulated (6 hours) human peripheral blood lymphocytes stained with mouse IgG1 Pacific Blue<sup>™</sup> isotype control and CD3 (UCHT1) APC



PMA/ionomycin-stimulated (6 hours) human peripheral blood lymphocytes stained with MAb11 Pacific Blue<sup>™</sup> and CD3 (UCHT1) APC

For research use only. Not for diagnostic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

\*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, [www.biolegend.com/ordering#license](http://www.biolegend.com/ordering#license)). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products, reverse engineer functionally similar materials, or to provide a service to third parties without written approval of BioLegend. By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587