Brilliant Violet 421™ anti-human TNF-α Antibody

Catalog# / Size	502931 / 25 tests 502932 / 100 tests
Clone	MAb11
Regulatory Status	RUO
Other Names	Tumor necrosis factor-α, Cachectin, Necrosin, Macrophage cytotoxic factor (MCF), Differentiation inducing factor (DIF), TNFSF2
Isotype	Mouse IgG1, κ
Description	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 *in vitro*, hemorraghic necrosis of tumors *in vivo*, increased fibroblast proliferation, and enhanced chemotaxis and phagocytosis in neutrophils.

Product Details

Verified Reactivity	Human
Reported Reactivity	Cat, Chimpanzee, Baboon, Cynomolgus, Rhesus, Pigtailed Macaque, Sooty Mangabey, Pig
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	*E. coli*-expressed, recombinant human TNF-α
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA).
Preparation	The antibody was purified by affinity chromatography and conjugated with Brilliant Violet 421™ under optimal conditions.
Concentration	Lot-specific (to obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.)
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.**
Application	ICFC - Quality tested FC - Reported in the literature, not verified in house
Recommended Usage	Each lot of this antibody is quality control tested by intracellular immunofluorescent staining with flow cytometric analysis. For flow cytometric staining, the suggested use of this reagent is 5 µl per million cells in 100 µl staining volume or 5 µl per 100 µl of whole blood. Brilliant Violet 421™ excites at 405 nm and emits at 421 nm. The standard bandpass filter 450/50 nm is recommended for detection. Brilliant Violet 421™ is a trademark of Sirigen Group Ltd. Learn more about Brilliant Violet™. This product is subject to proprietary rights of Sirigen Inc. and is made and sold under license from Sirigen Inc. The purchase of this product conveys to the buyer a non-transferable right to use the purchased product for research purposes only. This product may not be resold or incorporated in any manner into another product for resale. Any use for therapeutics or diagnostics is strictly prohibited. This product is covered by U.S. Patent(s), pending patent applications and foreign equivalents.
Excitation Laser	Violet Laser (405 nm)
Application Notes	**ELISA or ELISPOT Detection:** 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.

Flow Cytometry[3,5,6,10]: The fluorochrome-labeled MAb11 antibody is useful for intracellular and membrane-bound immunofluorescent staining and flow cytometric analysis to identify TNF-a-producing cells within mixed cell populations.

Additional reported applications (for the relevant formats) include: neutralization[1,2], immunohistochemical staining of paraformaldehyde-fixed, saponin-treated frozen tissue sections[4] and acetone-fixed frozen tissue sections[8], immunocytochemistry[7], and immunofluorescence[9]. 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[2] 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[11]

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. Enr quez 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. Maksaereekul S, *et al.* 2009. *Vaccine*. 28:3754 (FC)

Product Citations

1. Seo YB, *et al.* 2021. Vaccines (Basel). 9: . PubMed
2. Myers JA, *et al.* 2022. JCI Insight. :. PubMed
3. Lindesmith LC, *et al.* 2020. Cell Mol Gastroenterol Hepatol. 0.586805556. PubMed
4. Fitzgerald KC, *et al.* 2021. Cell Rep Med. 2:100424. PubMed
5. Ohue Y, *et al.* 2014. Clin Cancer Res. 20:5052. PubMed
6. Xu X, *et al.* 2020. Arthritis Rheumatol. 72:1303. PubMed
7. Rieckmann K, *et al.* 2019. Vaccine X. 3:100046. PubMed
8. Montel-Hagen A *et al.* 2019. Cell stem cell. 24(3):376-389 . PubMed
9. Somogyi E, *et al.* 2021. Front Genet. 12:684152. PubMed
10. Eneslätt K, *et al.* 2018. Front Cell Infect Microbiol. 8:27. PubMed

RRID

AB_10898321 (BioLegend Cat. No. 502931)
AB_10960738 (BioLegend Cat. No. 502932)

Antigen Details

Structure	TNF superfamily; dimer/trimer; 17 kD (Mammalian)
Bioactivity	Paracrine/endocrine mediator of inflammatory and immune functions; selectively cytotoxic for transformed cells; 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	Neutrophils, Tregs
Biology Area	Cell Biology, Immunology, Innate Immunity, Neuroinflammation, Neuroscience
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	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
Gene ID	7124

Related Protocols

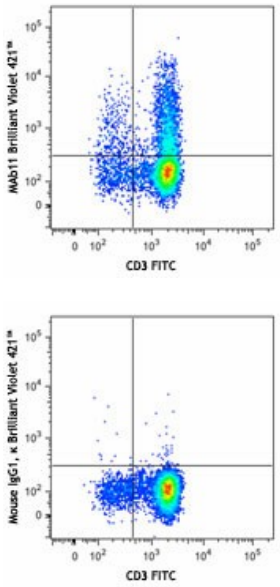
Surface and Intracellular Cytokine Staining for Flow Cytometry - Video

Intracellular Flow Cytometry Staining Protocol

Other Formats

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

Product Data



PMA+ionomycin stimulated (6 hours) human peripheral blood lymphocytes (in the presence of monensin) were stained with CD3 FITC, fixed, permeabilized, and then stained with TNF-α (clone MAb11) Brilliant Violet 421™ (top) or mouse IgG1, κ Brilliant Violet 421™ isotype control (bottom).

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587