Ultra-LEAF™ Purified anti-human CD3 Antibody

Catalog# / Size	300437 / 100 µg 300438 / 1 mg 300465 / 5 mg 300466 / 25 mg 300473 / 50 mg 300474 / 100 mg
Clone	UCHT1
Regulatory Status	RUO
Workshop	III 471
Other Names	T3, CD3ε
Isotype	Mouse IgG1, κ
Description	CD3ε is a 20 kD chain of the CD3/T-cell receptor (TCR) complex which is composed of two CD3ε, one CD3γ, one CD3δ, one CD3ζ (CD247), and a T-cell receptor (α/β or γ/δ) heterodimer. It is found on all mature T cells, NKT cells, and some thymocytes. CD3, also known as T3, is a member of the immunoglobulin superfamily that plays a role in antigen recognition, signal transduction, and T cell activation.

Product Details

Verified Reactivity	Human
Reported Reactivity	Chimpanzee
Antibody Type	Monoclonal
Host Species	Mouse
Formulation	0.2 µm filtered in phosphate-buffered solution, pH 7.2, containing no preservative. Endotoxin level is <0.01 EU/µg of the protein (<0.001 ng/µg of the protein) as determined by the LAL test.
Preparation	The Ultra-LEAF™ (Low Endotoxin, Azide-Free) antibody was purified by affinity chromatography.
Concentration	The antibody is bottled at the concentration indicated on the vial, typically between 2 mg/mL and 3 mg/mL. Older lots may have also been bottled at 1 mg/mL. 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. This Ultra-LEAF™ solution contains no preservative; handle under aseptic conditions.
Application	FC - *Quality tested* CyTOF® - *Verified* IHC-F, IP, Activ, WB - *Reported in the literature, not verified in house*
Recommended Usage	Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis. For flow cytometric staining, the suggested use of this reagent is ≤ 2.0 µg per million cells in 100 µl volume or 100 µl of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	Additional reported applications (for the relevant formats) include: immunohistochemical staining of acetone-fixed frozen sections[4,6,7] and formalin-fixed paraffin-embedded sections[11], immunoprecipitation[1], activation of T cells[2,3,5], Western blotting[9], and spatial biology (IBEX)[16,17]. The LEAF™ purified antibody (Endotoxin < 0.1 EU/µg, Azide-Free, 0.2 µm filtered) is recommended for functional assays (Cat. No. 300413, 300414, and 300432). For highly sensitive assays, we recommend Ultra-LEAF™ purified antibody (Cat. No. 300437, 300438, 300465, 300466, 300473, 300474) with a lower endotoxin limit than standard LEAF™ purified antibodies (Endotoxin < 0.01 EU/µg).
Application References	1. Salmeron A, *et al.* 1991. *J. Immunol.* 147:3047. (IP)

(PubMed link indicates BioLegend citation)

2. Graves J, *et al.* 1991. *J. Immunol.* 146:2102. (Activ)
3. Lafont V, *et al.* 2000. *J. Biol. Chem.* 275:19282. (Activ)
4. Ryschich E, *et al.* 2003. *Tissue Antigens* 62:48. (IHC)
5. Thompson AG, *et al.* 2004. *J. Immunol.* 173:1671. (Activ)
6. Sakkas LI, *et al.* 1998. *Clin. Diagn. Lab. Immun.* 5:430. (IHC)
7. Mack CL, *et al.* 2004. *Pediatr. Res.* 56:79. (IHC)
8. Thakral D, *et al.* 2008. *J. Immunol.* 180:7431. (FC) PubMed
9. Van Dongen JJM, *et al.* 1988. *Blood* 71:603. (WB)
10. Yoshino N, *et al.* 2000. *Exp. Anim. (Tokyo)* 49:97. (FC)
11. Pollard, K. *et al.* 1987. *J. Histochem. Cytochem.* 35:1329. (IHC)
12. Luckashenak N, *et al.* 2013. *J. Immunol.* 190:27. PubMed
13. Laurent AJ, *et al.* 2014. *PLoS One.* 9:103683. PubMed
14. Li J, *et al.* 2015. *Cancer Res.* 75:508. PubMed
15. Stoeckius M, *et al.* 2017. *Nat. Methods.* 14:865-868. (PG)
16. Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci USA.* 117:33455-33465. (SB) PubMed
17. Radtke AJ, *et al.* 2022. *Nat Protoc.* 17:378-401. (SB) PubMed

Product Citations

1. Tocheva AS, *et al.* 2020. Curr Protoc Immunol. 130:e103. PubMed
2. Sungur CM, *et al.* 2022. J Clin Invest. Online ahead of print. PubMed
3. Bellini N, *et al.* 2022. iScience. 25:105234. PubMed
4. You G, *et al.* 2021. Sci Adv. 7:. PubMed
5. Lerrer S, *et al.* 2021. iScience. 24:103020. PubMed
6. Jeong S, *et al.* 2021. J Immunother Cancer. 9:. PubMed
7. Texler B, *et al.* 2021. Cell Mol Gastroenterol Hepatol. 13:383. PubMed
8. Hirschberger S, *et al.* 2021. EMBO Mol Med. 13:e14323. PubMed
9. NULL, *et al.* 2022. Cell. 185:916. PubMed
10. Martínez-Fábregas J, *et al.* 2020. Cell Rep. 33:108545. PubMed
11. Leng T, *et al.* 2019. Cell Rep. 28:3077. PubMed
12. Jiao S, *et al.* 2020. Cell. 179(5):1177-1190.e13.. PubMed

RRID

AB_11147760 (BioLegend Cat. No. 300437)
AB_11146991 (BioLegend Cat. No. 300438)
AB_2616677 (BioLegend Cat. No. 300465)
AB_2616678 (BioLegend Cat. No. 300466)
AB_2749887 (BioLegend Cat. No. 300473)
AB_2749892 (BioLegend Cat. No. 300474)

Antigen Details

Structure	Ig superfamily, with the subunits of CD3γ, CD3δ, CD3ζ (CD247) and TCR (α/β or γ/δ) forms CD3/TCR complex, 20 kD
Distribution	Mature T and NK T cells, thymocyte differentiation
Function	Antigen recognition, signal transduction, T cell activation
Ligand/Receptor	Peptide antigen bound to MHC
Cell Type	NKT cells, T cells, Thymocytes, Tregs
Biology Area	Immunology, Innate Immunity
Molecular Family	CD Molecules, TCRs
Antigen References	1. Barclay N, *et al.* 1993. The Leucocyte FactsBook. Academic Press. San Diego. 2. Beverly P, *et al.* 1981. *Eur. J. Immunol.* 11:329. 3. Lanier L, *et al.* 1986. *J. Immunol.* 137:2501-2507.
Gene ID	916

Related Protocols

Cell Surface Flow Cytometry Staining Protocol

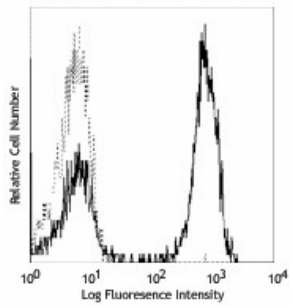
T Cell Activation with anti-CD3 Antibodies Protocol - Human

T Cell Activation with anti-CD3 Antibodies Protocol - Mouse

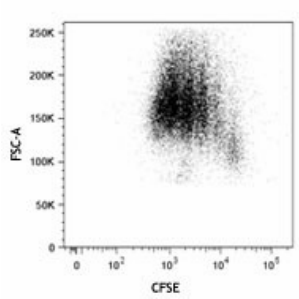
Other Formats

APC anti-human CD3, Biotin anti-human CD3, FITC anti-human CD3, PE anti-human CD3, PE/Cyanine5 anti-human CD3, Purified anti-human CD3, Alexa Fluor® 647 anti-human CD3, Alexa Fluor® 488 anti-human CD3, Pacific Blue™ anti-human CD3, PE/Cyanine7 anti-human CD3, Alexa Fluor® 700 anti-human CD3, APC/Cyanine7 anti-human CD3, PerCP anti-human CD3, PerCP/Cyanine5.5 anti-human CD3, Brilliant Violet 421™ anti-human CD3, Brilliant Violet 570™ anti-human CD3, Ultra-LEAF™ Purified anti-human CD3, Purified anti-human CD3 (Maxpar® Ready), Alexa Fluor® 594 anti-human CD3, PE/Dazzle™ 594 anti-human CD3, Brilliant Violet 510™ anti-human CD3, Brilliant Violet 605™ anti-human CD3, Brilliant Violet 711™ anti-human CD3, Brilliant Violet 650™ anti-human CD3, APC/Fire™ 750 anti-human CD3, Brilliant Violet 785™ anti-human CD3, TotalSeq™-A0034 anti-human CD3, TotalSeq™-B0034 anti-human CD3, TotalSeq™-C0034 anti-human CD3, KIRAVIA Blue 520™ anti-human CD3, Spark Violet™ 538 anti-human CD3 Antibody, TotalSeq™-D0034 anti-human CD3, Spark Blue™ 574 anti-human CD3 Antibody, GMP Pacific Blue™ anti-human CD3, GMP PE anti-human CD3, GMP PE/Dazzle™ 594 anti-human CD3

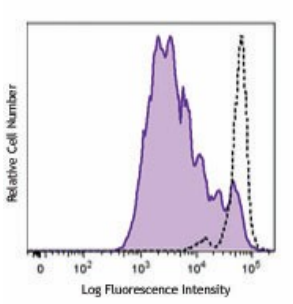
Product Data



Human peripheral blood lymphocytes stained with LEAF™ purified UCHT1 and then detected with anti-mouse IgGs FITC



Human peripheral blood lymphocytes stained with LEAF™ purified UCHT1 and then detected with anti-mouse IgGs FITC



Human peripheral blood mononuclear cells were stained with CFSE on day 0, and then stimulated with (filled histogram) or without (open histogram) immobilized LEAF™ Purified CD3 (clone UCHT1) and LEAF™ purified CD28 (clone CD28.2) for 3 days. On day 4, cells were harvested and stained with CD4 Brilliant Violet 711™. Dot plot (above) was analyzed on live cells. Histogram data (below) was analyzed by gating on CD4 positive cells (above).

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