

Pacific Blue™ anti-human CD3 Antibody

Catalog# / Size	300418 / 25 µg 300417 / 100 µg 300431 / 100 tests 300442 / 500 tests
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	test size: Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA). µg sizes: Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography, and conjugated with Pacific Blue™ under optimal conditions.
Concentration	test size: lot-specific; µg sizes: 0.5 mg/ml
Storage & Handling	The CD3 antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Application	FC - Quality tested
Recommended Usage	Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis . For test size , the suggested use of this reagent for immunofluorescent staining is 5 µl per million cells in 100 µl staining volume or 5 µl per 100 µl of whole blood. For µg sizes , the suggested use of this reagent for immunofluorescent staining is ≤2.0 µg per 10 ⁶ 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. * 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. View full statement regarding label licenses
Excitation Laser	Violet Laser (405 nm)
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

(PubMed link indicates BioLegend citation)

1. Salmeron A, *et al.* 1991. *J. Immunol.* 147:3047. (IP)
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. Immunol.* 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. Yarzabek B *et al.* 2018. *eLife.* 7 pii: e34961. [PubMed](#)
2. Horwitz JA, *et al.* 2017. *Cell.* 170:637. [PubMed](#)
3. Roy Chowdhury R, *et al.* 2018. *Nature.* 560:644. [PubMed](#)
4. Grant EJ, *et al.* 2018. *Nat Commun.* 9:5427. [PubMed](#)
5. Kraig E, *et al.* 2018. *Exp Gerontol.* 105:53. [PubMed](#)
6. Rydbirk R, *et al.* 2019. *Sci Rep.* 9:7781. [PubMed](#)
7. Yang C, *et al.* 2019. *Nat Commun.* 10:3931. [PubMed](#)
8. Gavel DR, *et al.* 2019. *Genome Med.* 11:47. [PubMed](#)
9. Manser AR, *et al.* 2019. *J Immunol.* 203:2301. [PubMed](#)
10. Alcántara-Hernández M *et al.* 2017. *Immunity.* 47(6):1037-1050. [PubMed](#)
11. Ye C, *et al.* 2017. *J Virol.* 91:e01389-23. [PubMed](#)
12. Geng J, *et al.* 2018. *Elife.* 7:e36341. [PubMed](#)
13. Leylek R, *et al.* 2019. *Cell Rep.* 29:3736. [PubMed](#)
14. Leite NC, *et al.* 2020. *Cell Reports.* 32(2):107894.. [PubMed](#)
15. Tjwa E, *et al.* 2011. *J Hepatol.* 54:209. [PubMed](#)
16. Richard J, *et al.* 2013. *Virology.* 443:248. [PubMed](#)
17. Mock U, *et al.* 2015. *Nucleic Acids Res.* 43:5560. [PubMed](#)
18. Bego M, *et al.* 2015. *J Vis Exp.* 103: 51207. [PubMed](#)
19. Hesketh AJ *et al.* 2015. *PloS one.* 10(12):e0145197. [PubMed](#)
20. Kerkman PF, Kempers AC 2016. *Ann Rheum Dis.* 75(12):2201-2207. [PubMed](#)
21. Laroni A, *et al.* 2016. *J Autoimmun.* 72:8-18. [PubMed](#)
22. Barman S, *et al.* 2016. *Int Immunol.* 28: 533 - 545. [PubMed](#)
23. Wang R, *et al.* 2016. *Proc Natl Acad Sci U S A.* 113: 11501 - 11506. [PubMed](#)
24. Assadi G, *et al.* 2016. *PLoS One.* 11:e0168276. [PubMed](#)
25. Fu W, *et al.* 2016. *Sci Rep.* 6:38162. [PubMed](#)
26. Leach SM, *et al.* 2020. *Cell Rep.* 33:108337. [PubMed](#)
27. Schneider EH, *et al.* 2020. *Naunyn Schmiedebergs Arch Pharmacol.* 393:1251. [PubMed](#)
28. Alter G, *et al.* 2020. *Cell.* 183(1):185-196.e14. [PubMed](#)
29. Japp AS, *et al.* 2021. *Cell.* 184(3):827-839.e14. [PubMed](#)
30. Glassman CR, *et al.* 2021. *Cell.* 184(4):983-999.e24. [PubMed](#)

RRID

AB_493095 (BioLegend Cat. No. 300418)
AB_493094 (BioLegend Cat. No. 300417)
AB_1595437 (BioLegend Cat. No. 300431)
AB_2562048 (BioLegend Cat. No. 300442)

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](#)

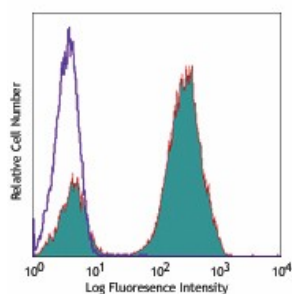
Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

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

Product Data



Human peripheral blood lymphocytes stained with UCHT1 Pacific Blue™

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). 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.

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