

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

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. 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. 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](#)

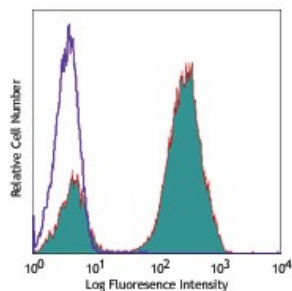
Related Protocols

[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™

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