

FITC anti-human CD4 Antibody

Catalog# / Size	300505 / 25 tests 300506 / 100 tests 300538 / 500 tests
Clone	RPA-T4
Regulatory Status	RUO
Workshop	IV T114
Other Names	T4
Isotype	Mouse IgG1, κ
Description	CD4, also known as T4, is a 55 kD single-chain type I transmembrane glycoprotein expressed on most thymocytes, a subset of T cells, and monocytes/macrophages. CD4, a member of the Ig superfamily, recognizes antigens associated with MHC class II molecules, and participates in cell-cell interactions, thymic differentiation, and signal transduction. CD4 acts as a primary receptor for HIV, binding to HIV gp120. CD4 has also been shown to interact with IL-16.

Product Details

Verified Reactivity	Human
Reported Reactivity	Chimpanzee
Antibody Type	Monoclonal
Host Species	Mouse
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 FITC 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 CD4 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 SB - 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 5 µl per million cells in 100 µl staining volume or 5 µl per 100 µl of whole blood.
Excitation Laser	Blue Laser (488 nm)
Application Notes	The RPA-T4 antibody binds to the D1 domain of CD4 (CDR1 and CDR3 epitopes) and can block HIV gp120 binding and inhibit syncytia formation. Additional reported applications (for the relevant formats) include: immunohistochemistry of acetone-fixed frozen sections ^{3,4,5} , blocking of T cell activation ^{1,2} , and spatial biology (IBEX) ^{10,11} . This clone was tested in-house and does not work on formalin fixed paraffin-embedded (FFPE) tissue. The Ultra-LEAF™ purified antibody (Endotoxin < 0.01 EU/µg, Azide-Free, 0.2 µm filtered) is recommended for functional assays (Cat. No. 300569 - 300574).
Additional Product Notes	Iterative Bleaching Extended multi-pleXity (IBEX) is a fluorescent imaging technique capable of highly-multiplexed spatial analysis. The method relies on cyclical bleaching of panels of fluorescent antibodies in order to image and analyze many markers over multiple cycles of staining, imaging, and, bleaching. It is a community-developed open-access method developed by the Center for Advanced Tissue Imaging (CAT-I) in the National Institute of Allergy and Infectious Diseases (NIAID, NIH).
Application References	

**(PubMed link indicates
BioLegend citation)**

1. Knapp W, *et al.* 1989. Leucocyte Typing IV. Oxford University Press. New York. (Activ)
2. Moir S, *et al.* 1999. *J. Virol.* 73:7972. (Activ)
3. Deng MC, *et al.* 1995. *Circulation* 91:1647. (IHC)
4. Friedman T, *et al.* 1999. *J. Immunol.* 162:5256. (IHC)
5. Mack CL, *et al.* 2004. *Pediatr. Res.* 56:79. (IHC)
6. Lan RY, *et al.* 2006. *Hepatology* 43:729.
7. Zenaro E, *et al.* 2009. *J. Leukoc. Biol.* 86:1393. (FC) [PubMed](#)
8. Yoshino N, *et al.* 2000. *Exp. Anim. (Tokyo)* 49:97. (FC)
9. Stoeckius M, *et al.* 2017. *Nat. Methods.* 14:865. (PG)
10. Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci USA.* 117:33455-33465. (SB) [PubMed](#)
11. Radtke AJ, *et al.* 2022. *Nat Protoc.* 17:378-401. (SB) [PubMed](#)

Product Citations

1. Chiu H, *et al.* 2021. *iScience.* 24:102748. [PubMed](#)
2. Kim MY, *et al.* 2021. *JCI Insight.* 6:. [PubMed](#)
3. Zong D, *et al.* 2021. *BMC Biol.* 19:79. [PubMed](#)
4. Wahl S, *et al.* 2016. *Nature.* 541:81-86. [PubMed](#)
5. Gong B, *et al.* 2021. *Mol Med Rep.* 23:00. [PubMed](#)
6. Rolandelli A, *et al.* 2017. *Sci Rep.* 7:40666. [PubMed](#)
7. Panwar B, *et al.* 2021. *Genome Res.* 31:659. [PubMed](#)
8. Sun L, *et al.* 2020. *J Diabetes Res.* 2020:2583257. [PubMed](#)
9. Goletz C, *et al.* 2018. *Front Immunol.* 9:1614. [PubMed](#)
10. Soldi R, *et al.* 2020. *PLoS One.* 15:e0235705. [PubMed](#)
11. Choudhry V, *et al.* 2006. *Biochem Biophys Res Commun.* 348:1107. [PubMed](#)
12. Su W, *et al.* 2022. *Front Immunol.* 13:952338. [PubMed](#)
13. Beatson RE, *et al.* 2021. *Cell Rep Med.* 2:100473. [PubMed](#)
14. Zhao J, *et al.* 2021. *Front Immunol.* 12:658420. [PubMed](#)
15. Meng Y, *et al.* 2017. *Cell Death Dis.* . 10.1038/cddis.2017.505. [PubMed](#)
16. Kobayashi Y, *et al.* 2020. *Int J Oncol.* 999:56. [PubMed](#)
17. Herter JM, *et al.* 2022. *Strahlenther Onkol.* Online ahead of print. [PubMed](#)
18. Fang F, *et al.* 2022. *JCI Insight.* 7:. [PubMed](#)
19. Le X, *et al.* 2021. *J Thorac Oncol.* 16:583. [PubMed](#)
20. Evans RDR, *et al.* 2020. *Nat Commun.* 3.491666667. [PubMed](#)
21. Handono K, *et al.* 2020. *Eur J Dent.* 0.9611111111. [PubMed](#)
22. Sibener LV *et al.* 2018. *Cell.* 174(3):672-687. [PubMed](#)
23. Qiu XM, *et al.* 2020. *Reproduction.* 251:159. [PubMed](#)
24. Pagel J, *et al.* 2020. *Front Immunol.* 11:565257. [PubMed](#)
25. Alhaj Hussien K, *et al.* 2017. *Immunity.* 47:680. [PubMed](#)
26. Yang L, *et al.* 2020. *Genes Dis.* 7:128. [PubMed](#)
27. Luo X, *et al.* 2015. *J Biol Chem.* 290: 28675 - 28682. [PubMed](#)
28. Cheng Y, *et al.* 2021. *Immunity.* 54(8):1825-1840.e7. [PubMed](#)
29. Hansen EC *et al.* 2016. *eLife.* 5 pii: e18447. [PubMed](#)
30. Mastrogiovanni M, *et al.* 2022. *Sci Adv.* 8:eab15942. [PubMed](#)
31. Fang F, *et al.* 2021. *Cell Rep.* 37:109981. [PubMed](#)
32. Han L, *et al.* 2014. *J Biol Chem.* 289:25546. [PubMed](#)
33. Ickrath P, *et al.* 2019. *Biomed Rep.* 10:119. [PubMed](#)
34. Zenaro E, *et al.* 2009. *J Leukoc Biol.* 86:1393. [PubMed](#)
35. Hamilton JR, *et al.* 2021. *Cell Reports.* 35(9):109207. [PubMed](#)
36. Kim MY, *et al.* 2022. *Nat Commun.* 13:3296. [PubMed](#)
37. Scherpenisse M, *et al.* 2021. *MBio.* 12:. [PubMed](#)
38. Kang LJ, *et al.* 2020. *Sci Rep.* 10:5603. [PubMed](#)
39. Csomós K, *et al.* 2022. *Nat Immunol.* 23:1256. [PubMed](#)
40. Iio K, *et al.* 2019. *Sci Rep.* 9:813. [PubMed](#)
41. Zhao Y, *et al.* 2020. *Front Immunol.* 2.572222222. [PubMed](#)
42. Tamai Y, *et al.* 2013. *J Immunol.* 190:4382. [PubMed](#)
43. Reitingner C, *et al.* 2022. *Front Immunol.* 13:970290. [PubMed](#)
44. Kalim H, *et al.* 2020. *Int J Rheum Dis.* 23:620. [PubMed](#)
45. Ickrath P, *et al.* 2018. *Int J Mol Med.* 42:1116. [PubMed](#)
46. Mothe B, *et al.* 2020. *Front Immunol.* 1.029861111. [PubMed](#)
47. Vanoni G, *et al.* 2021. *eLife.* 10:00. [PubMed](#)
48. Kothari H, *et al.* 2021. *Sci Signal.* 14:. [PubMed](#)
49. Zelba H, *et al.* 2021. *J Immunol.* 206:580. [PubMed](#)
50. Kim ML, *et al.* 2021. *iScience.* 24:103509. [PubMed](#)

RRID

AB_314073 (BioLegend Cat. No. 300505)
AB_314074 (BioLegend Cat. No. 300506)
AB_2562052 (BioLegend Cat. No. 300538)

Antigen Details

Structure	Ig superfamily, type I transmembrane glycoprotein, 55 kD
Distribution	T cell subset, majority of thymocytes, monocytes/macrophages
Function	MHC class II co-receptor, lymphocyte adhesion, thymic differentiation, HIV receptor

Ligand/Receptor	MHC class II molecules, HIV gp120, IL-16
Cell Type	Dendritic cells, Macrophages, Monocytes, T cells, Thymocytes, Tregs
Biology Area	Immunology
Molecular Family	CD Molecules
Antigen References	1. Center D, <i>et al.</i> 1996. <i>Immunol. Today</i> 17:476. 2. Gaubin M, <i>et al.</i> 1996. <i>Eur. J. Clin. Chem. Clin. Biochem.</i> 34:723.
Gene ID	920

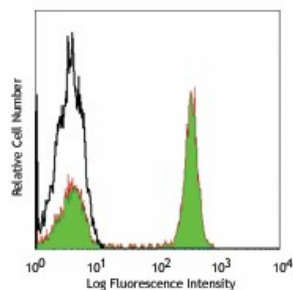
Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

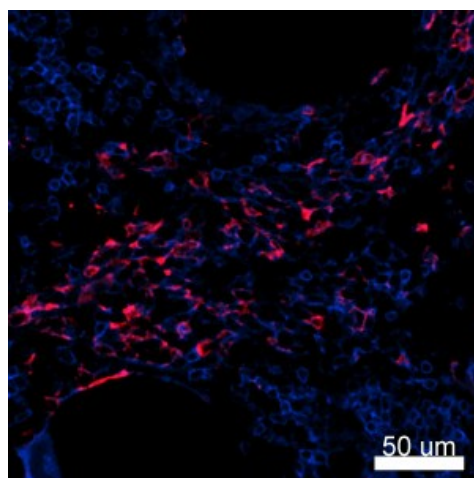
Other Formats

APC anti-human CD4, Biotin anti-human CD4, FITC anti-human CD4, PE anti-human CD4, PE/Cyanine5 anti-human CD4, PE/Cyanine7 anti-human CD4, Purified anti-human CD4, APC/Cyanine7 anti-human CD4, Alexa Fluor® 488 anti-human CD4, Alexa Fluor® 647 anti-human CD4, Pacific Blue™ anti-human CD4, Brilliant Violet 421™ anti-human CD4, Alexa Fluor® 700 anti-human CD4, PerCP anti-human CD4, PerCP/Cyanine5.5 anti-human CD4, Brilliant Violet 570™ anti-human CD4, Brilliant Violet 650™ anti-human CD4, Purified anti-human CD4 (Maxpar® Ready), Alexa Fluor® 594 anti-human CD4, Brilliant Violet 510™ anti-human CD4, PE/Dazzle™ 594 anti-human CD4, Brilliant Violet 785™ anti-human CD4, Brilliant Violet 605™ anti-human CD4, Brilliant Violet 711™ anti-human CD4, APC/Fire™ 750 anti-human CD4, CD4 Fluorophore Sampler Kit, CD4 Fluorophore Sampler Kit with Veri-Cells™ PBMC, TotalSeq™-A0072 anti-human CD4, TotalSeq™-B0072 anti-human CD4, TotalSeq™-C0072 anti-human CD4, Ultra-LEAF™ Purified anti-human CD4, TotalSeq™-D0072 anti-human CD4

Product Data



Human peripheral blood lymphocytes stained with RPA-T4 FITC



Confocal image of human lymph node sample acquired using the IBEX method of highly multiplexed antibody-based imaging: CD163 (red) in Cycle 3 and CD4 (blue) in Cycle 5. Tissues were prepared using ~1% (vol/vol) formaldehyde and a detergent. Following fixation, samples are immersed in 30% (wt/vol) sucrose for cryoprotection. Images are courtesy of Drs. Andrea J. Radtke and Ronald N. Germain of the Center for Advanced Tissue Imaging (CAT-I) in the National Institute of Allergy and Infectious Diseases (NIAID, NIH).

*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.

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