

Biotin anti-mouse CD4 Antibody

Catalog# / Size	100403 / 50 µg 100404 / 500 µg
Clone	GK1.5
Regulatory Status	RUO
Other Names	L3T4, T4
Isotype	Rat IgG2b, κ
Description	CD4 is a 55 kD protein also known as L3T4 or T4. It is a member of the Ig superfamily, primarily expressed on most thymocytes, a subset of T cells, and weakly on macrophages and dendritic cells. It acts as a coreceptor with the TCR during T cell activation and thymic differentiation by binding MHC class II and associating with the protein tyrosin kinase, lck.

Product Details

Verified Reactivity	Mouse
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	Mouse CTL clone V4
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography, and conjugated with biotin under optimal conditions.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C. 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 flow cytometric staining, the suggested use of this reagent is ≤ 0.25 µg per 10 ⁶ cells in 100 µl volume. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	Additional reported applications (for the relevant formats) include: blocking of CD4 ⁺ T cell activation ^{1,4,11} , thymocyte costimulation ³ , <i>in vitro</i> and <i>in vivo</i> depletion ^{2,5-8} , blocking of egg-sperm cell adhesion ^{1,4} , immunohistochemical staining of acetone-fixed frozen sections ^{9,10} , immunoprecipitation ^{1,2} , and spatial biology (IBEX) ^{12,13} . The GK1.5 antibody is able to block CD4 mediated cell adhesion and T cell activation. Binding of GK1.5 antibody to CD4 T cells can be blocked by RM4-5 antibody, but not RM4-4 antibody. For <i>in vivo</i> studies or highly sensitive assays, we recommend Ultra-LEAF™ purified antibody (Cat. No. 100442) with a lower endotoxin limit than standard LEAF™ purified antibodies (Endotoxin < 0.01 EU/µg).
Application References	<ol style="list-style-type: none"> 1. Dialynas DP, <i>et al.</i> 1983. <i>J. Immunol.</i> 131:2445. (Block, IP) 2. Dialynas DP, <i>et al.</i> 1983. <i>Immunol. Rev.</i> 74:29. (IP, Deplete) 3. Wu L, <i>et al.</i> 1991. <i>J. Exp. Med.</i> 174:1617. (Costim) 4. Godfrey DI, <i>et al.</i> 1994. <i>J. Immunol.</i> 152:4783. (Block) 5. Gavett SH, <i>et al.</i> 1994. <i>Am. J. Respir. Cell. Mol. Biol.</i> 10:587. (Deplete) 6. Schuyler M, <i>et al.</i> 1994. <i>Am. J. Respir. Crit. Care Med.</i> 149:1286. (Deplete) 7. Ghebrial RR, <i>et al.</i> 1989. <i>Clin. Immunol. Immunopathol.</i> 52:486. (Deplete) 8. Israelski DM, <i>et al.</i> 1989. <i>J. Immunol.</i> 142:954. (Deplete) 9. Zheng B, <i>et al.</i> 1996. <i>J. Exp. Med.</i> 184:1083. (IHC) 10. Frei K, <i>et al.</i> 1997. <i>J. Exp. Med.</i> 185:2177. (IHC) 11. Felix NJ, <i>et al.</i> 2007. <i>Nat. Immunol.</i> 8:388. (Block) 12. Radtke AJ, <i>et al.</i> 2020. <i>Proc Natl Acad Sci U S A.</i> 117:33455-65. (SB) PubMed 13. Radtke AJ, <i>et al.</i> 2022. <i>Nat Protoc.</i> 17:378-401. (SB) PubMed
(PubMed link indicates BioLegend citation)	

Product Citations

1. McNamara HA, *et al.* 2020. Cell Host Microbe. 572:28. [PubMed](#)
2. Chappaz S, *et al.* 2021. Cell Reports. 36(3):109430. [PubMed](#)
3. Boyd DF, *et al.* 2020. Nature. 587:466. [PubMed](#)
4. Han X, *et al.* 2017. Int J Mol Sci. 10.3390/ijms18050942. [PubMed](#)
5. Wang L, *et al.* 2019. Cell Rep. 29:1848. [PubMed](#)
6. Florentin J, *et al.* 2022. Front Immunol. 13:882484. [PubMed](#)
7. Schloss MJ, *et al.* 2022. Nat Immunol. 23:605. [PubMed](#)
8. Barry KC, *et al.* 2018. Nat Med. 24:1178. [PubMed](#)
9. Liang J, *et al.* 2017. Nat Commun. 8:15732. [PubMed](#)
10. Van de Velde L, *et al.* 2016. Cell Rep. 17:2247-2258. [PubMed](#)
11. Li Q *et al.* 2018. Immunity. 48(2):258-270 . [PubMed](#)
12. Bian Y, *et al.* 2017. PLoS Pathog. 13:e1006384. [PubMed](#)
13. She L, *et al.* 2021. JCI Insight. 6:e143509. [PubMed](#)
14. Suah AN, *et al.* 2021. J Clin Invest. 131:. [PubMed](#)
15. Paiva RS, *et al.* 2021. Eur J Immunol. 51:1968. [PubMed](#)
16. Levine LS, *et al.* 2021. Immunity. 54(4):829-844.e5. [PubMed](#)
17. Paiva RA, *et al.* 2021. Cell Reports. 35(2):108967. [PubMed](#)
18. Miyazaki M *et al.* 2017. Immunity. 46(5):818-834 . [PubMed](#)
19. Khaw YM, *et al.* 2020. J Neuroinflammation. 17:49. [PubMed](#)
20. He J, *et al.* 2020. Cell Reports. 29(9):2718-2730.e6.. [PubMed](#)
21. Khiew SH, *et al.* 2020. J Clin Invest. 130:3453. [PubMed](#)
22. Lin H, *et al.* 2019. Infect Immun. 87:e00055-19. [PubMed](#)
23. Cheng HW, *et al.* 2019. Nat Commun. 10:1739. [PubMed](#)
24. Matsumura T *et al.* 2019. Cell Rep. 27(2):561-571 . [PubMed](#)
25. Lopez DA, *et al.* 2022. Cell Rep. 41:111677. [PubMed](#)
26. He Y, *et al.* 2021. Cell Metabolism. 33(5):988-1000.e7. [PubMed](#)
27. Dong S, *et al.* 2021. Nature. 591:117. [PubMed](#)
28. Opejin A, *et al.* 2020. Cell Reports. 33(8):108424. [PubMed](#)
29. Milner JJ, *et al.* 2020. Immunity. 52(5):808-824.e7. [PubMed](#)
30. Frodermann V, *et al.* 2019. Nat Med. 25:1761. [PubMed](#)
31. Onodera T, *et al.* 2021. Immunity. 54:2385. [PubMed](#)
32. Boulay A, *et al.* 2015. J Neurosci. 35:4427. [PubMed](#)
33. Zhang Z, *et al.* 2019. Haematologica. 4.339583333. [PubMed](#)
34. Zhou Z, *et al.* 2022. Infect Immun. 90:e0045321. [PubMed](#)
35. Murakami R, *et al.* 2013. PLoS One. 8:73270. [PubMed](#)
36. Au-Yeung BB, *et al.* 2017. J Immunol. 198:2445. [PubMed](#)
37. Sevin M, *et al.* 2018. Nat Commun. 9:1431. [PubMed](#)
38. Inamine A, *et al.* 2012. Clin Immunol. 143:170. [PubMed](#)
39. Wang Z *et al.* 2018. Immunity. 49(1):80-92 . [PubMed](#)
40. Freise AC, *et al.* 2017. Mol Imaging Biol. 19:599. [PubMed](#)
41. Aftabzadeh M, *et al.* 2021. JCI Insight. 6:. [PubMed](#)
42. Zhai X, *et al.* 2021. Sci Adv. 7:eabk0490. [PubMed](#)
43. Vasamsetti SB, *et al.* 2018. Immunity. 49:93. [PubMed](#)
44. Duarte D, *et al.* 2018. Cell Stem Cell. 22:64. [PubMed](#)
45. Tian Q, *et al.* 2021. Infect Immun. 89:e0020521. [PubMed](#)
46. Zeis P, *et al.* 2020. Immunity. 53:775. [PubMed](#)
47. Haniuda K, *et al.* 2020. Cell Rep. 33:108333. [PubMed](#)
48. Ji Y, *et al.* 2019. Nat Immunol. 1.303472222. [PubMed](#)
49. Schönberger K, *et al.* 2022. STAR Protoc. 3:101408. [PubMed](#)
50. Damgaard RB *et al.* 2016. Cell. 166(5):1215-1230 . [PubMed](#)
51. He M, *et al.* 2020. Cell Metabolism. 31(3):580-591. [PubMed](#)
52. Bajaan S, *et al.* 2022. iScience. 25:103732. [PubMed](#)
53. Koide S, *et al.* 2022. iScience. 25:103603. [PubMed](#)
54. Miyauchi K, *et al.* 2021. Nat Commun. 12:3789. [PubMed](#)
55. Zhu J *et al.* 2017. Cell stem cell. 20(3):374-384 . [PubMed](#)
56. Yoshida H, *et al.* 2019. Cell. 176:897. [PubMed](#)
57. Mohrin M, *et al.* 2021. Aging Cell. 20:e13313. [PubMed](#)
58. Rai S, *et al.* 2022. Nat Commun. 13:5346. [PubMed](#)
59. Riedel SS, *et al.* 2021. Molecular Cell. 81(11):2332-2348.e9. [PubMed](#)
60. Poholek CH, *et al.* 2019. Immunohorizons. 0.259722222. [PubMed](#)
61. Luo H, *et al.* 2019. Cell Rep. 26:945. [PubMed](#)
62. Chryplewicz A, *et al.* 2022. Cancer Cell. 40:1111. [PubMed](#)
63. Ho K, *et al.* 2014. Cell Death Dis. 5:1518. [PubMed](#)
64. Heyde A, *et al.* 2021. Cell. 184(5):1348-1361.e22. [PubMed](#)
65. Waldman MM, *et al.* 2022. Front Immunol. 13:856977. [PubMed](#)
66. Xie L, *et al.* 2020. Infect Immun. :88. [PubMed](#)
67. Muro R, *et al.* 2015. PLoS One. 10:119898. [PubMed](#)
68. Amend A, *et al.* 2021. Int J Mol Sci. 22:. [PubMed](#)

RRID

AB_312688 (BioLegend Cat. No. 100403)
AB_312689 (BioLegend Cat. No. 100404)

Antigen Details

Structure

Ig superfamily, 55 kD

Distribution	Majority of thymocytes, T cell subset
Function	TCR co-receptor, T cell activation
Ligand/Receptor	MHC class II molecule
Cell Type	Dendritic cells, T cells, Thymocytes, Tregs
Biology Area	Immunology
Molecular Family	CD Molecules
Antigen References	1. Barclay A, <i>et al.</i> 1997. <i>The Leukocyte Antigen FactsBook</i> Academic Press. 2. Bierer BE, <i>et al.</i> 1989. <i>Annu. Rev. Immunol.</i> 7:579. 3. Janeway CA. 1992. <i>Annu. Rev. Immunol.</i> 10:645.
Gene ID	12504

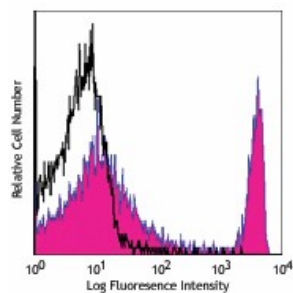
Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

Other Formats

APC anti-mouse CD4, Biotin anti-mouse CD4, FITC anti-mouse CD4, PE anti-mouse CD4, PE/Cyanine5 anti-mouse CD4, Purified anti-mouse CD4, PE/Cyanine7 anti-mouse CD4, APC/Cyanine7 anti-mouse CD4, Alexa Fluor® 647 anti-mouse CD4, Alexa Fluor® 488 anti-mouse CD4, Pacific Blue™ anti-mouse CD4, Alexa Fluor® 700 anti-mouse CD4, PerCP anti-mouse CD4, PerCP/Cyanine5.5 anti-mouse CD4, Brilliant Violet 421™ anti-mouse CD4, Ultra-LEAF™ Purified anti-mouse CD4, Alexa Fluor® 594 anti-mouse CD4, Brilliant Violet 711™ anti-mouse CD4, Brilliant Violet 510™ anti-mouse CD4, Brilliant Violet 605™ anti-mouse CD4, Brilliant Violet 785™ anti-mouse CD4, PE/Dazzle™ 594 anti-mouse CD4, APC/Fire™ 750 anti-mouse CD4, GoInVivo™ Purified anti-mouse CD4, Brilliant Violet 750™ anti-mouse CD4, Brilliant Violet 650™ anti-mouse CD4, Spark Blue™ 550 anti-mouse CD4, Spark NIR™ 685 anti-mouse CD4, KIRAVIA Blue 520™ anti-mouse CD4, PE/Fire™ 640 anti-mouse CD4, APC/Fire™ 810 anti-mouse CD4, PE/Fire™ 700 anti-mouse CD4, Spark Violet™ 538 anti-mouse CD4, Spark YG™ 593 anti-mouse CD4, Spark Blue™ 574 anti-mouse CD4 Antibody, Spark UV™ 387 anti-mouse CD4

Product Data



C57BL/6 mouse splenocytes were stained with biotinylated CD4 (clone GK1.5) (filled histogram) or rat IgG2b, κ isotype control (open histogram), followed by Sav-PE.

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