

APC anti-mouse CD4 Antibody

Catalog# / Size	100411 / 25 µg 100412 / 100 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 APC under optimal conditions.
Concentration	0.2 mg/ml
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
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.
Excitation Laser	Red Laser (633 nm)
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

1. Dialynas DP, *et al.* 1983. *J. Immunol.* 131:2445. (Block, IP)
2. Dialynas DP, *et al.* 1983. *Immunol. Rev.* 74:29. (IP, Deplete)
3. Wu L, *et al.* 1991. *J. Exp. Med.* 174:1617. (Costim)
4. Godfrey DI, *et al.* 1994. *J. Immunol.* 152:4783. (Block)
5. Gavett SH, *et al.* 1994. *Am. J. Respir. Cell. Mol. Biol.* 10:587. (Deplete)
6. Schuyler M, *et al.* 1994. *Am. J. Respir. Crit. Care Med.* 149:1286. (Deplete)
7. Ghobrial RR, *et al.* 1989. *Clin. Immunol. Immunopathol.* 52:486. (Deplete)
8. Israelski DM, *et al.* 1989. *J. Immunol.* 142:954. (Deplete)
9. Zheng B, *et al.* 1996. *J. Exp. Med.* 184:1083. (IHC)
10. Frei K, *et al.* 1997. *J. Exp. Med.* 185:2177. (IHC)
11. Felix NJ, *et al.* 2007. *Nat. Immunol.* 8:388. (Block)

12. Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci U S A.* 117:33455-65. (SB) [PubMed](#)
13. Radtke AJ, *et al.* 2022. *Nat Protoc.* 17:378-401. (SB) [PubMed](#)

Product Citations

1. Glasner A, *et al.* 2017. *Sci Rep.* 10.1038/s41598-017-12998-w. [PubMed](#)
2. Contijoch EJ *et al.* 2019. *eLife.* 8 pii: e40553. [PubMed](#)
3. Komuczki J, *et al.* 2019. *Immunity.* 50:1289. [PubMed](#)
4. Kisielow J, *et al.* 2019. *Nat Immunol.* 1.286111111. [PubMed](#)
5. Garo LP, *et al.* 2021. *Nat Commun.* 12:2419. [PubMed](#)
6. Chen N, *et al.* 2021. *Front Immunol.* 12:756423. [PubMed](#)
7. Berube A, *et al.* 2022. *Viruses.* 14:. [PubMed](#)
8. Tan L, *et al.* 2022. *Aging Dis.* 13:1562. [PubMed](#)
9. Gerwing M, *et al.* 2020. *Mol Imaging Biol.* 1.959027778. [PubMed](#)
10. Hirata Y *et al.* 2018. *Cell stem cell.* 22(3):445-453. [PubMed](#)
11. Tan L, *et al.* 2022. *Biochem Biophys Rep.* 32:101351. [PubMed](#)
12. Hong M, *et al.* 2021. *Int J Mol Sci.* 22:. [PubMed](#)
13. Zhu W, *et al.* 2021. *Onco Targets Ther.* 14:2149. [PubMed](#)
14. Geng Z, *et al.* 2021. *Nat Commun.* 12:6584. [PubMed](#)
15. Zhang R, *et al.* 2021. *Cell Mol Immunol.* 18:1222. [PubMed](#)
16. Zhu P, *et al.* 2012. *J Cereb Blood Flow Metab.* 0.482638889. [PubMed](#)
17. Zhang S, *et al.* 2022. *Acta Pharm Sin B.* 12:3124. [PubMed](#)
18. Schmidt V, *et al.* 2021. *J Cell Biol.* 220:. [PubMed](#)
19. Choi H *et al.* 2019. *Cell Rep.* 27(3):806-819. [PubMed](#)
20. Zhang C, *et al.* 2022. *J Extracell Vesicles.* 11:e12209. [PubMed](#)
21. Oh DS, *et al.* 2021. *Autophagy.* 17:2111. [PubMed](#)
22. Gu H, *et al.* 2021. *Immun Inflamm Dis.* 9:1686. [PubMed](#)
23. Ren J, *et al.* 2021. *Theranostics.* 11:304. [PubMed](#)
24. Schiller M, *et al.* 2021. *Immunity.* 54(5):1022-1036.e8. [PubMed](#)
25. Cai B, *et al.* 2021. *Mol Cancer.* 20:165. [PubMed](#)
26. Helm M, *et al.* 2022. *Life (Basel).* 12:. [PubMed](#)
27. Dolgova EV, *et al.* 2022. *Int J Mol Sci.* 23:. [PubMed](#)
28. Liang Z, *et al.* 2021. *J Cell Physiol.* 236:4725. [PubMed](#)
29. Tian X, *et al.* 2022. *Front Immunol.* 13:875236. [PubMed](#)
30. Jiang S, *et al.* 2020. *Scand J Immunol.* e12867:91. [PubMed](#)
31. Alissafi T, *et al.* 2020. *Cell Metabolism.* 32(4):591-604.e7. [PubMed](#)
32. Zhang X, *et al.* 2020. *J Immunol.* 205:1743. [PubMed](#)
33. Oghumu S, *et al.* 2014. *Immunology.* 143: 109-119. [PubMed](#)
34. Inoue M, *et al.* 2014. *Proc Natl Acad Sci U S A.* 111:5295. [PubMed](#)
35. Lo W, Allen D 2012. *Nat Immunol.* 13:880. [PubMed](#)
36. Lu Y, *et al.* 2020. *Cell.* 180(6):1081-1097. [PubMed](#)
37. Pan W *et al.* 2017. *Immunity.* 47(2):284-297. [PubMed](#)
38. Britton GJ *et al.* 2019. *Immunity.* 50(1):212-224. [PubMed](#)
39. Yang X, *et al.* 2019. *Oncotarget.* 10:4180. [PubMed](#)
40. Li K, *et al.* 2022. *J Immunother Cancer.* 10:. [PubMed](#)
41. Jia L, *et al.* 2022. *Front Immunol.* 13:897879. [PubMed](#)
42. Hongu T, *et al.* 2022. *Nat Cancer.* 3:486. [PubMed](#)
43. Zhan Y, *et al.* 2021. *JCI Insight.* 6:. [PubMed](#)
44. Zhang Z, *et al.* 2021. *Oncoimmunology.* 10:1912472. [PubMed](#)
45. Canto F, *et al.* 2016. *Sci Rep.* 6:28573. [PubMed](#)
46. Ben-Shaan T, *et al.* 2016. *Nat Med.* 10.1038/nm.4133. [PubMed](#)
47. Velázquez K, *et al.* 2016. *Am J Physiol Gastrointest Liver Physiol.* 311: G699 - G712. [PubMed](#)
48. Wei SC, *et al.* 2020. *Cancer Discov.* [PubMed](#)
49. He W *et al.* 2018. *Immunity.* 49(6):1175-1190. [PubMed](#)
50. Riffelmacher T *et al.* 2017. *Immunity.* 47(3):466-480. [PubMed](#)
51. Pein M, *et al.* 2020. *Nat Commun.* 11:1494. [PubMed](#)
52. Khatun A, *et al.* 2021. *J Exp Med.* 218:. [PubMed](#)
53. Si L, *et al.* 2022. *Nat Biotechnol.* 40:1370. [PubMed](#)
54. Shin JE, *et al.* 2021. *Heliyon.* 7:e08433. [PubMed](#)
55. Chen D, *et al.* 2020. *Cancer Immunol Res.* 8:883. [PubMed](#)
56. Huang Y, *et al.* 2020. *FASEB J.* 34:1768. [PubMed](#)
57. Aegerter H, *et al.* 2020. *Nat Immunol.* 0.975694444. [PubMed](#)
58. Wu C, *et al.* 2014. *J Mol Cell Cardiol.* 76:33. [PubMed](#)
59. Haase C, *et al.* 2022. *Nat Methods.* 19:1622. [PubMed](#)
60. Freitas JT, *et al.* 2021. *Pigment Cell Melanoma Res.* 34:1084. [PubMed](#)
61. Hu G, *et al.* 2022. *Cell Death Dis.* 13:640. [PubMed](#)
62. Kotaki R, *et al.* 2020. *Sci Rep.* 10:13554. [PubMed](#)
63. Wu L, *et al.* 2022. *Theranostics.* 12:842. [PubMed](#)
64. Leisegang M, *et al.* 2016. *Clin Cancer Res.* 22: 2734 - 2743. [PubMed](#)
65. Li J, *et al.* 2020. *Elife.* 9:00. [PubMed](#)
66. Abdul Pari AA, *et al.* 2020. *Cancer Res.* 80:2586. [PubMed](#)
67. Yue X, *et al.* 2019. *Nat Commun.* 10:2011. [PubMed](#)
68. Niemann J, *et al.* 2019. *Nat Commun.* 10:3236. [PubMed](#)
69. Chisolm DA *et al.* 2019. *Immunity.* 51(1):155-168. [PubMed](#)
70. Wang Y, *et al.* 2021. *Front Immunol.* 12:654463. [PubMed](#)
71. Ng SS, *et al.* 2020. *Nat Immunol.* 21:1205. [PubMed](#)
72. Yang J, *et al.* 2020. *Nature.* 586:572. [PubMed](#)
73. Markey K, *et al.* 2014. *J Immunol.* 192:5426. [PubMed](#)
74. Jing Y, *et al.* 2020. *Sci Adv.* 6:eaax9455. [PubMed](#)
75. St Clair JB, *et al.* 2017. *PLoS One.* 12:e0170556. [PubMed](#)

76. Qi S *et al.* 2016. *eLife*. 5 pii: e14756. [PubMed](#)
77. Ren G *et al.* 2017. *Molecular cell*. 67(6):1049-1058 . [PubMed](#)
78. Garo LP, *et al.* 2019. *Cell Rep*. 28:3353. [PubMed](#)
79. Ishidome T *et al.* 2017. *EBioMedicine*. 22:89-99 . [PubMed](#)
80. Tang X, *et al.* 2022. *Cell Rep*. 41:111673. [PubMed](#)
81. Takano T, *et al.* 2020. *Front Immunol*. 11:1555. [PubMed](#)
82. Gibbins J, *et al.* 2014. *Blood*. 124:2953. [PubMed](#)
83. Nakajima-Adachi H, *et al.* 2017. *PLoS One*. 12(2):e0172795. [PubMed](#)
84. Vaena S, *et al.* 2021. *Cell Reports*. 35(5):109076. [PubMed](#)
85. Kruta M, *et al.* 2021. *Cell Stem Cell*. . [PubMed](#)
86. Alhosaini K, *et al.* 2021. *Brain Sci*. :11. [PubMed](#)
87. Hu J, *et al.* 2019. *Mol Ther Nucleic Acids*. 16:650. [PubMed](#)
88. Zhang H, *et al.* 2019. *Mol Cell*. 76:110. [PubMed](#)
89. Tan YY, *et al.* 2021. *Exp Ther Med*. 22:1368. [PubMed](#)
90. Zhou Z, *et al.* 2022. *Infect Immun*. 90:e0045321. [PubMed](#)
91. Toyama S, *et al.* 2021. *Int J Mol Sci*. 22:. [PubMed](#)
92. Nikolos F, *et al.* 2022. *Nat Commun*. 13:1487. [PubMed](#)
93. Yan J, *et al.* 2020. *Cell Rep*. 107820:31. [PubMed](#)
94. Clemens E, *et al.* 2015. *J Immunol*. 194:898. [PubMed](#)
95. Coronel MM, *et al.* 2020. *Sci Adv*. 6:eaba5573. [PubMed](#)
96. Bosnjak B, *et al.* 2019. *Front Immunol*. 10:840. [PubMed](#)
97. Zou D, *et al.* 2020. *EBioMedicine*. 52:102652. [PubMed](#)
98. Chatterjee S *et al.* 2017. *Cell metabolism*. 27(1):85-100 . [PubMed](#)
99. Wang R, *et al.* 2022. *Front Immunol*. 13:947756. [PubMed](#)
100. Li Z, *et al.* 2021. *MBio*. 12:e0254221. [PubMed](#)
101. Frost JN, *et al.* 2021. *Med (N Y)*. 2:164. [PubMed](#)
102. Anderson AE, *et al.* 2022. *NPJ Regen Med*. 7:6. [PubMed](#)
103. Daneshmandi S, *et al.* 2021. *Elife*. 10:. [PubMed](#)
104. Lu J, *et al.* 2021. *Cell Death Discov*. 7:165. [PubMed](#)
105. Hu Y, *et al.* 2021. *Cell Death Dis*. 12:743. [PubMed](#)
106. Chulpanova DS, *et al.* 2021. *Biology (Basel)*. 10:. [PubMed](#)
107. Watson MJ, *et al.* 2021. *Nature*. 591:645. [PubMed](#)
108. Zhang Q, *et al.* 2021. *Front Cell Dev Biol*. 9:655552. [PubMed](#)
109. Xiao Y, *et al.* 2022. *Nat Commun*. 13:758. [PubMed](#)
110. Dulken BW, *et al.* 2019. *Nature*. 571:205. [PubMed](#)
111. Burgener SS, *et al.* 2019. *Cell Rep*. 27:3646. [PubMed](#)
112. Shen DD, *et al.* 2022. *Mol Cancer*. 21:75. [PubMed](#)
113. He C, *et al.* 2022. *Nat Commun*. 13:5459. [PubMed](#)
114. Kwok T, *et al.* 2022. *Front Aging*. 3:838943. [PubMed](#)
115. Miyauchi E, *et al.* 2020. *Nature*. 585:102. [PubMed](#)
116. Yu X, *et al.* 2013. *Cancer Res*. 73:2093. [PubMed](#)
117. XX, *et al.* 2016. *J Immunol* . 197: 1683-1691. [PubMed](#)
118. Gomezikova MO, *et al.* 2020. *Pharmaceutics*. 12:00. [PubMed](#)
119. Daneshmandi S, *et al.* 2021. *Cell Reports*. 34(10):108831. [PubMed](#)
120. Wedekind MF, *et al.* 2021. *iScience*. 24(7):102759. [PubMed](#)
121. Alexander Mildner *et al.* 2017. *Immunity*. 46(5):849-862 . [PubMed](#)
122. Wang L, *et al.* 2021. *Sci Adv*. 7:eabj4796. [PubMed](#)
123. Tsai H, *et al.* 2021. *EMBO Mol Med*. 13:e12834. [PubMed](#)
124. Zhu S, *et al.* 2022. *EBioMedicine*. 80:104060. [PubMed](#)
125. Garcia-Dominguez D, *et al.* 2022. *Front Immunol*. 13:948335. [PubMed](#)
126. Zhang Y, *et al.* 2021. *Commun Biol*. 344:4. [PubMed](#)
127. Montero-Barrera D, *et al.* 2015. *BioMed Res Int*. 2015 615865. [PubMed](#)
128. Ma Q, *et al.* 2022. *Vaccines (Basel)*. 10:. [PubMed](#)
129. Kanatsu-Shinohara M, *et al.* 2022. *J Reprod Dev*. Online ahead of print. [PubMed](#)
130. Georgiadou A, *et al.* 2022. *Elife*. 11:. [PubMed](#)
131. Xiao Y, *et al.* 2021. *Cell*. 184:6037. [PubMed](#)
132. Yang Z, *et al.* 2021. *Nat Commun*. 12:4299. [PubMed](#)
133. Lo W, *et al.* 2014. *Elife*. 14:1457. [PubMed](#)
134. Singhal P, *et al.* 2016. *Proc Natl Acad Sci U S A*. 113: 122 - 127. [PubMed](#)
135. Jia H, *et al.* 2018. *Int J Oncol*. 53:949. [PubMed](#)
136. Gaya M *et al.* 2018. *Cell*. 172(3):517-533 . [PubMed](#)
137. Hayashida E, *et al.* 2019. *J Neuroinflammation*. 0.789583333. [PubMed](#)
138. Yoshida H, *et al.* 2019. *Cell*. 176:897. [PubMed](#)
139. Hosaka K, *et al.* 2020. *Nat Commun*. 3.030555556. [PubMed](#)
140. Zheng Z, *et al.* 2021. *Biomed Res Int*. 2021:5535578. [PubMed](#)
141. Rui J, *et al.* 2021. *Nat Commun*. 12:5074. [PubMed](#)
142. Zhang Z, *et al.* 2020. *Nature*. 579:415. [PubMed](#)
143. Yang N, *et al.* 2022. *Nat Commun*. 13:2336. [PubMed](#)
144. Siolas D, *et al.* 2021. *Cell Reports*. 36(8):109578. [PubMed](#)
145. Yu H, *et al.* 2015. *PLoS One*. 10: 0143001. [PubMed](#)
146. Charlton J, *et al.* 2015. *PLoS One*. 10:119200. [PubMed](#)
147. Lavoie S, *et al.* 2020. *Gastroenterology*. 158:1359. [PubMed](#)
148. Hidalgo San Jose L, *et al.* 2020. *Cell Rep*. 30:69. [PubMed](#)
149. Liang Z, *et al.* 2017. *Autophagy*. 14:505. [PubMed](#)
150. Lu Y, *et al.* 2018. *Cancer Cell*. 33:1048. [PubMed](#)
151. Ando T, *et al.* 2017. *Inflammation*. 10.1007/s10753-017-0613-6. [PubMed](#)
152. Rosen SF, *et al.* 2022. *Genome Med*. 14:108. [PubMed](#)
153. Sun Y, *et al.* 2022. *iScience*. 25:104846. [PubMed](#)
154. Ma C, *et al.* 2021. *Mol Metab*. 47:101170. [PubMed](#)
155. Schadler K, *et al.* 2014. *Cancer Res*. 74:2171. [PubMed](#)

156. L M, *et al.* 2016. *Brain*. 139: 1939-1957. [PubMed](#)
157. Angela M, *et al.* 2016. *Nat Commun*. 7:13683. [PubMed](#)
158. Luo Z, *et al.* 2020. *J Virol*. 94:00:00. [PubMed](#)
159. Wu L, *et al.* 2020. *Cancer Immunol Res*. 710:8. [PubMed](#)
160. Su M, *et al.* 2018. *Immunol Cell Biol*. 9:2448. [PubMed](#)
161. Albaghdadi AJH, *et al.* 2019. *Sci Rep*. 9:6528. [PubMed](#)
162. Caetano MS, *et al.* 2019. *Clin Cancer Res*. 25:7576. [PubMed](#)
163. Kashiwakura Y, *et al.* 2020. *Clinical & Experimental Immunology*. 202(1):119-135. [PubMed](#)
164. Wang K, *et al.* 2021. *Nat Commun*. 12:4558. [PubMed](#)
165. Mazumder S, *et al.* 2021. *Heliyon*. 7:e08124. [PubMed](#)
166. Zhang M, *et al.* 2022. *iScience*. 25:104490. [PubMed](#)
167. Caporarello N, *et al.* 2022. *Nat Commun*. 13:4170. [PubMed](#)
168. Fan X, *et al.* 2014. *PLoS One*. 9:107638. [PubMed](#)
169. Fucsiello M, *et al.* 2019. *Nat Commun*. 4.407638889. [PubMed](#)
170. Chen S, *et al.* 2018. *Nat Commun*. 9:5298. [PubMed](#)
171. Aurélien Trompette *et al.* 2018. *Immunity*. 48(5):992-1005. [PubMed](#)
172. Liang Z, *et al.* 2022. *iScience*. 25:105233. [PubMed](#)
173. Yang H, *et al.* 2022. *Viruses*. 14:. [PubMed](#)
174. He C, *et al.* 2021. *Immunol Cell Biol*. 99:611. [PubMed](#)
175. Sethuraman SN, *et al.* 2020. *Theranostics*. 10:3397. [PubMed](#)
176. Okubo A, *et al.* 2021. *Int J Mol Sci*. 23:. [PubMed](#)
177. Nakazawa S, *et al.* 2020. *Sci Rep*. 10:14559. [PubMed](#)

RRID AB_312696 (BioLegend Cat. No. 100411)
 AB_312697 (BioLegend Cat. No. 100412)

Antigen Details

Structure	lg 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	<ol style="list-style-type: none"> 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

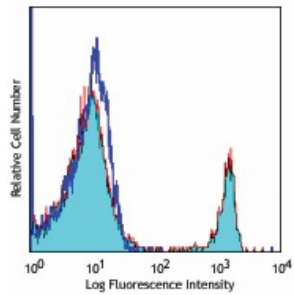
Related Protocols

[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, GolnVivo™ 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 CD4 (clone GK1.5) APC (filled histogram) or rat IgG2b, κ APC isotype control (open histogram).

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