

Brilliant Violet 605™ anti-mouse CD45 Antibody

Catalog# / Size	103139 / 125 µL 103155 / 50 µg 103140 / 500 µL
Clone	30-F11
Regulatory Status	RUO
Other Names	T200, Ly-5, LCA
Isotype	Rat IgG2b, κ
Description	CD45 is a 180-240 kD glycoprotein also known as the leukocyte common antigen (LCA), T200, or Ly-5. It is a member of the protein tyrosine phosphatase (PTP) family, expressed on all hematopoietic cells except mature erythrocytes and platelets. There are different isoforms of CD45 that arise from variable splicing of exons 4, 5, and 6, which encode A, B, and C determinants, respectively. CD45 plays a key role in TCR and BCR signal transduction. These isoforms are very specific to the activation and maturation state of the cell as well as cell type. The primary ligands for CD45 are galectin-1, CD2, CD3, CD4, TCR, CD22, and Thy-1.

Product Details

Verified Reactivity	Mouse
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	Mouse thymus or spleen
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 Brilliant Violet 605™ under optimal conditions.
Concentration	µg sizes: 0.2 mg/mL µL sizes: 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 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	<p>Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis. For flow cytometric staining with µg, the suggested use of this reagent is ≤0.5 µg per million cells in 100 µl volume. For flow cytometric staining with µl, 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. It is recommended that the reagent be titrated for optimal performance for each application.</p> <p>Brilliant Violet 605™ excites at 405 nm and emits at 603 nm. The bandpass filter 610/20 nm is recommended for detection, although filter optimization may be required depending on other fluorophores used. Be sure to verify that your cytometer configuration and software setup are appropriate for detecting this channel. Refer to your instrument manual or manufacturer for support. Brilliant Violet 605™ is a trademark of Sirigen Group Ltd.</p> <p>Learn more about Brilliant Violet™.</p> <p>This product is subject to proprietary rights of Sirigen Inc. and is made and sold under license from Sirigen Inc. The purchase of this product conveys to the buyer a non-transferable right to use the purchased product for research purposes only. This product may not be resold or incorporated in any manner into another product for resale. Any use for therapeutics or diagnostics is strictly prohibited. This product is covered by U.S. Patent(s), pending patent applications and foreign equivalents.</p>
Excitation Laser	Violet Laser (405 nm)

Application Notes

Clone 30-F11 reacts with all isoforms and both CD45.1 and CD45.2 alloantigens of CD45.

Additional reported applications (for relevant formats) include: immunoprecipitation³, complement-dependent cytotoxicity^{1,5}, immunohistochemistry (acetone-fixed frozen sections, zinc-fixed paraffin-embedded sections and formalin-fixed paraffin-embedded sections)^{4,6}, Western blotting⁷, and spatial biology (IBEX)^{10,11}. The Ultra-LEAF™ purified antibody (Endotoxin < 0.01 EU/μg, Azide-Free, 0.2 μm filtered) is recommended for functional assays (Cat. No. 103163 and 103164).

Application References

(PubMed link indicates BioLegend citation)

1. Podd BS, *et al.* 2006. *J. Immunol.* 176:6532. (FC, CMCD) [PubMed](#)
2. Haynes NM, *et al.* 2007. *J. Immunol.* 179:5099. (FC)
3. Ledbetter JA, *et al.* 1979. *Immunol. Rev.* 47:63. (IP)
4. Simon DI, *et al.* 2000. *J. Clin. Invest.* 105:293. (IHC)
5. Seaman WE. 1983. *J. Immunol.* 130:1713. (CMCD)
6. Cornet A, *et al.* 2001. *P. Natl. Acad. Sci. USA* 98:13306. (IHC)
7. Tsuboi S and Fukuda M. 1998. *J. Biol. Chem.* 273:30680. (WB) [PubMed](#)
8. Liu F, *et al.* 2012. *Blood.* 119:3295. [PubMed](#)
9. Pelletier AN, *et al.* 2012. *J. Immunol.* 188:5561. [PubMed](#)
10. Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci U S A.* 117:33455-65. (SB) [PubMed](#)
11. Radtke AJ, *et al.* 2022. *Nat Protoc.* 17:378-401. (SB) [PubMed](#)

Product Citations

1. Wong P, *et al.* 2021. *STAR Protoc.* 2:100262. [PubMed](#)
2. Dalmas E *et al.* 2017. *Immunity.* 47(5):928-942. [PubMed](#)
3. Flamar AL, *et al.* 2020. *Immunity.* 52(4):606-619.e6. [PubMed](#)
4. Liang J, *et al.* 2021. *Cancer Manag Res.* 13:6977. [PubMed](#)
5. Luo J, *et al.* 2022. *J Nanobiotechnology.* 20:228. [PubMed](#)
6. Zhu Y, *et al.* 2022. *Nat Commun.* 13:4282. [PubMed](#)
7. Wu MJ, *et al.* 2022. *Cancer Discov.* 12:812. [PubMed](#)
8. Israelow B, *et al.* 2020. *bioRxiv.* [PubMed](#)
9. Platt DJ, *et al.* 2021. *Cell Reports.* 35(6):109113. [PubMed](#)
10. Boyd DF, *et al.* 2020. *Nature.* 587:466. [PubMed](#)
11. Dando SJ, *et al.* 2021. *Invest Ophthalmol Vis Sci.* 62:10. [PubMed](#)
12. Delvecchio FR, *et al.* 2021. *Cell Mol Gastroenterol Hepatol.* 12:1543. [PubMed](#)
13. Zou C, *et al.* 2020. *Cell Rep.* 33:108447. [PubMed](#)
14. Marinaccio C, *et al.* 2021. *Cancer Discovery.* 11(6):1398-1410. [PubMed](#)
15. Lee J, *et al.* 2020. *Gut Microbes.* 1:1. [PubMed](#)
16. Barry KC, *et al.* 2018. *Nat Med.* 24:1178. [PubMed](#)
17. Turner JA, *et al.* 2020. *Immunity.* 53:1202. [PubMed](#)
18. Khamissi FZ, *et al.* 2022. *Sci Adv.* 8:eabm5900. [PubMed](#)
19. Gao Y, *et al.* 2020. *Nat Cell Biol.* 1064:22. [PubMed](#)
20. Shao Y, *et al.* 2019. *Diabetes.* 68:2131. [PubMed](#)
21. Huai W, *et al.* 2019. *J Exp Med.* 216:772. [PubMed](#)
22. Chen JC *et al.* 2018. *Cell systems.* 7(1):92-103. [PubMed](#)
23. Chen J, *et al.* 2022. *J Nanobiotechnology.* 20:283. [PubMed](#)
24. AR P, *et al.* 2016. *Circ Res.* 118: 400-409. [PubMed](#)
25. Schiller M, *et al.* 2021. *Immunity.* 54(5):1022-1036.e8. [PubMed](#)
26. Lu SX, *et al.* 2021. *Cell.* [PubMed](#)
27. García Nores GD, *et al.* 2018. *Nat Commun.* 9:1970. [PubMed](#)
28. Grizotte-Lake M, *et al.* 2018. *Immunity.* 49:1103. [PubMed](#)
29. Skibba ME, *et al.* 2021. *Respir Res.* 22:315. [PubMed](#)
30. Sharma S, *et al.* 2015. *J Immunol.* 194:5529. [PubMed](#)
31. Zhang H, *et al.* 2020. *Cancer Cell.* 37(1):37-54.e9. [PubMed](#)
32. Kuhn NF, *et al.* 2020. *Nat Commun.* 4:74375. [PubMed](#)
33. Nording H, *et al.* 2021. *Nat Commun.* 12:3352. [PubMed](#)
34. Wang F, *et al.* 2021. *Cell Mol Gastroenterol Hepatol.* 13:257. [PubMed](#)
35. Payne K, *et al.* 2016. *J Leukoc Biol.* 100: 625 - 635. [PubMed](#)
36. Wagner JA, *et al.* 2020. *Cell Rep.* 31:107720. [PubMed](#)
37. Freerman AJ, *et al.* 2019. *J Immunol.* 202:1265. [PubMed](#)
38. Celik H, *et al.* 2021. *Cancer Discov.* 11:3126. [PubMed](#)
39. Sharma D, *et al.* 2022. *Commun Biol.* 5:479. [PubMed](#)
40. Reddy A, *et al.* 2020. *Cell.* 183:62. [PubMed](#)
41. Cortez-Toledo O, *et al.* 2017. *PLoS One.* 12(2):e0171268. [PubMed](#)
42. Grigoryan L, *et al.* 2022. *NPJ Vaccines.* 7:55. [PubMed](#)
43. Pishesha N, *et al.* 2021. *Proc Natl Acad Sci U S A.* 118:1. [PubMed](#)
44. Ganguly K, *et al.* 2022. *Front Immunol.* 13:930449. [PubMed](#)
45. Bunting MD, *et al.* 2022. *Sci Adv.* 8:eabk3327. [PubMed](#)
46. Harb H, *et al.* 2021. *Immunity.* 54(6):1186-1199.e7. [PubMed](#)
47. Gkountela S *et al.* 2019. *Cell.* 176(1-2):98-112. [PubMed](#)
48. Kakizaki M, Watanabe R 2017. *Neuropathology.* 10.1111/neup.12386. [PubMed](#)
49. Scarneo SA, *et al.* 2022. *Sci Rep.* 12:18091. [PubMed](#)
50. Wei W, *et al.* 2022. *mSystems.* 7:e0046922. [PubMed](#)
51. Luo J, *et al.* 2022. *J Nanobiotechnology.* 20:228. [PubMed](#)
52. Reese B, *et al.* 2020. *J Immunol.* 205:3218. [PubMed](#)
53. Zeng W, *et al.* 2021. *STAR Protocols.* 2(1):100361. [PubMed](#)
54. Chen YG, *et al.* 2020. *Molecular Cell.* 76(1):96-109. [PubMed](#)
55. Wolf KG, *et al.* 2022. *JVS Vasc Sci.* 3:336. [PubMed](#)
56. Anderson AE, *et al.* 2022. *NPJ Regen Med.* 7:6. [PubMed](#)
57. Alam Z, *et al.* 2020. *Cell Rep.* 107825:31. [PubMed](#)

58. Gubin MM, *et al.* 2018. *Cell*. 175:1014. [PubMed](#)
59. Di Mitri D, *et al.* 2019. *Cell Rep*. 28:2156. [PubMed](#)
60. Bhattacharya A, *et al.* 2018. *Neuropsychopharmacology*. 43:2586. [PubMed](#)
61. Mohamed E, *et al.* 2020. *Immunity*. 52(4):668-682.e7.. [PubMed](#)
62. Hu Y, *et al.* 2021. *Cell Death Dis*. 12:743. [PubMed](#)
63. Li J, *et al.* 2022. *Nat Commun*. 13:4032. [PubMed](#)
64. Dulken BW, *et al.* 2019. *Nature*. 571:205. [PubMed](#)
65. Gyoneva S, *et al.* 2019. *Life Sci Alliance*. 2:e201900453. [PubMed](#)
66. Zhang Y, *et al.* 2019. *Nat Commun*. 10:3667. [PubMed](#)
67. Myers DR, *et al.* 2020. *Front Immunol*. 11:576310. [PubMed](#)
68. Ovadya Y, *et al.* 2018. *Nat Commun*. 9:5435. [PubMed](#)
69. Kang YH, *et al.* 2019. *Nat Commun*. 10:912. [PubMed](#)
70. McDonald LT, *et al.* 2017. *PLoS One*. 12:e0180724. [PubMed](#)
71. Terp MG, *et al.* 2021. *Mol Oncol*. 15:3299. [PubMed](#)
72. Harb H, *et al.* 2020. *Nat Immunol*. 1359:21. [PubMed](#)
73. Berrien-Elliott MM, *et al.* 2020. *Immunity*. 51(3):479-490. [PubMed](#)
74. Chen M, *et al.* 2019. *Cell Stem Cell*. 25:501. [PubMed](#)
75. Clemente-Casares X, *et al.* 2017. *Immunity*. 47:974. [PubMed](#)
76. Bennion BG, *et al.* 2019. *J Virol*. 93. [PubMed](#)
77. Zhu YP *et al.* 2018. *Cell reports*. 24(9):2329-2341 . [PubMed](#)
78. Pavelko K, *et al.* 2017. *Front Immunol*. . 10.3389/fimmu.2017.01532. [PubMed](#)
79. Olson CA, *et al.* 2021. *Cell Host Microbe*. 29:1378. [PubMed](#)
80. Ren J, *et al.* 2021. *JCI Insight*. 6:. [PubMed](#)
81. Yin X, *et al.* 2020. *Cell Rep*. 33:108278. [PubMed](#)
82. Becattini S, *et al.* 2021. *Cell Host Microbe*. 29(3):378-393.e5. [PubMed](#)
83. Dai X, *et al.* 2021. *Molecular Cell*. 81(11):2317-2331.e6. [PubMed](#)
84. Hong JP, *et al.* 2020. *Cell Reports Medicine*. 1(3):100035. [PubMed](#)
85. Molgora M, *et al.* 2020. *Cell*. 182:886. [PubMed](#)
86. Fedele C, *et al.* 2021. *J Exp Med*. 218:. [PubMed](#)
87. Dubrot J, *et al.* 2021. *Immunity*. 54(3):571-585.e6. [PubMed](#)
88. Castillo-Azofeifa D, *et al.* 2019. *EMBO J*. 38:e99984. [PubMed](#)
89. Teng F, *et al.* 2021. *Cell Rep*. 37:110051. [PubMed](#)
90. Li H, *et al.* 2022. *iScience*. 25:104481. [PubMed](#)
91. Perez-Cruz M, *et al.* 2021. *PLoS One*. e0236216:16. [PubMed](#)
92. Li Z *et al.* 2018. *Immunity*. 49(4):640-653 . [PubMed](#)
93. Lloyd AF, *et al.* 2019. *Nat Neurosci*. 1.643055556. [PubMed](#)
94. Shao Y, *et al.* 2019. *Stem Cells*. 37:1331. [PubMed](#)
95. Lee A, *et al.* 2022. *Nat Commun*. 13:549. [PubMed](#)
96. Avgustinova A, *et al.* 2021. *Cell Stem Cell*. . [PubMed](#)
97. Kuhn NF *et al.* 2019. *Cancer cell*. 35(3):473-488 . [PubMed](#)

RRID AB_2562341 (BioLegend Cat. No. 103139)
 AB_2650656 (BioLegend Cat. No. 103155)
 AB_2562342 (BioLegend Cat. No. 103140)

Antigen Details

Structure	Protein tyrosine phosphatase (PTP) family, 180-240 kD
Distribution	All hematopoietic cells except mature erythrocytes and platelets
Function	Phosphatase, T and B cell activation
Ligand/Receptor	Galectin-1, CD2, CD3, CD4, TCR, CD22, Thy-1
Cell Type	B cells, Dendritic cells, Mesenchymal Stem Cells, Tregs
Biology Area	Cell Biology, Immunology, Inhibitory Molecules, Innate Immunity, Neuroscience, Neuroscience Cell Markers, Stem Cells
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. Trowbridge IS, <i>et al.</i> 1993. <i>Annu. Rev. Immunol</i>. 12:85. 3. Kishihara K, <i>et al.</i> 1993. <i>Cell</i> 74:143. 4. Pulido R, <i>et al.</i> 1988. <i>J. Immunol</i>. 140:3851.
Gene ID	19264

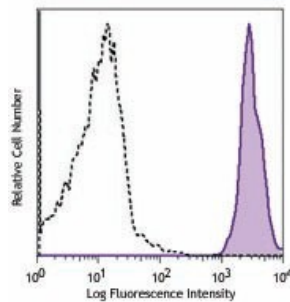
Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

Other Formats

APC anti-mouse CD45, Biotin anti-mouse CD45, FITC anti-mouse CD45, PE anti-mouse CD45, PE/Cyanine5 anti-mouse CD45, Purified anti-mouse CD45, PE/Cyanine7 anti-mouse CD45, APC/Cyanine7 anti-mouse CD45, Alexa Fluor® 488 anti-mouse CD45, Alexa Fluor® 647 anti-mouse CD45, Pacific Blue™ anti-mouse CD45, Alexa Fluor® 700 anti-mouse CD45, PerCP/Cyanine5.5 anti-mouse CD45, PerCP anti-mouse CD45, Alexa Fluor® 594 anti-mouse CD45, Brilliant Violet 421™ anti-mouse CD45, Brilliant Violet 570™ anti-mouse CD45, Brilliant Violet 510™ anti-mouse CD45, Brilliant Violet 605™ anti-mouse CD45, Purified anti-mouse CD45 (Maxpar® Ready), PE/Dazzle™ 594 anti-mouse CD45, Brilliant Violet 711™ anti-mouse CD45, Brilliant Violet 785™ anti-mouse CD45, Brilliant Violet 650™ anti-mouse CD45, APC/Fire™ 750 anti-mouse CD45, Brilliant Violet 750™ anti-mouse CD45, TotalSeq™-A0096 anti-mouse CD45, TotalSeq™-B0096 anti-mouse CD45, Ultra-LEAF™ Purified anti-mouse CD45, Spark Blue™ 550 anti-mouse CD45, Spark NIR™ 685 anti-mouse CD45, TotalSeq™-C0096 anti-mouse CD45, Spark YG™ 570 anti-mouse CD45, PE/Fire™ 640 anti-mouse CD45, APC/Fire™ 810 anti-mouse CD45, PE/Fire™ 700 anti-mouse CD45, Spark Violet™ 538 anti-mouse CD45, Spark YG™ 593 anti-mouse CD45, Spark Blue™ 574 anti-mouse CD45 Antibody

Product Data



C57BL/6 mouse splenocytes were stained with CD45 (clone 30-F11) Brilliant Violet 605™ (filled histogram) or rat IgG2b, κ Brilliant Violet 605™ isotype control (open histogram).

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