

Biotin anti-mouse CD45 Antibody

Catalog# / Size	103103 / 50 µg 103104 / 500 µg
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.
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	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)

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

Product Citations

1. Dell'Aringa M, *et al.* 2018. Mucosal Immunol. 1.207638889. [PubMed](#)
2. Yen W, *et al.* 2012. Clin Cancer Res. 18:5374. [PubMed](#)
3. Tarban N, *et al.* 2022. Cells. 11:. [PubMed](#)
4. Fujimori S, *et al.* 2022. Elife. 11:. [PubMed](#)
5. Lv X, *et al.* 2022. Acta Pharm Sin B. 12:735. [PubMed](#)
6. Xie T, *et al.* 2021. Sci Adv. 7: . [PubMed](#)
7. Chiang HC, *et al.* 2018. Sci Rep. 8:2731. [PubMed](#)
8. Kaminitz A, *et al.* 2013. Int Immunol. 25:485. [PubMed](#)
9. Larsen SB, *et al.* 2021. Cell Stem Cell. :. [PubMed](#)
10. Leimkühler NB, *et al.* 2020. Cell Stem Cell. 28:637. [PubMed](#)
11. Fu R, *et al.* 2019. Nat Commun. 10:3210. [PubMed](#)
12. Muhsin-Sharafaldine M, *et al.* 2017. Biochem Biophys Res Commun. 10.1016/j.bbrc.2017.03.138. [PubMed](#)
13. Wagner F, *et al.* 2016. J Bone Joint Surg Am. 98: 916 - 925. [PubMed](#)
14. Nair S, *et al.* 2016. Nat Commun. 7:10913. [PubMed](#)
15. Ibrahim AM, *et al.* 2021. Breast Cancer Res. 23:90. [PubMed](#)
16. Kurane T, *et al.* 2020. Okajimas Folia Anat Jpn. 96:49:00. [PubMed](#)
17. Karaman S, *et al.* 2022. J Exp Med. 219: [PubMed](#)
18. Sitaraman S, *et al.* 2021. JCI Insight. 6: [PubMed](#)
19. Paiva RA, *et al.* 2021. Cell Reports. 35(2):108967. [PubMed](#)
20. Wang Z, *et al.* 2022. Cell Mol Immunol. 19:210. [PubMed](#)
21. Shen Z, *et al.* 2021. iScience. 24:103014. [PubMed](#)
22. Lv J, *et al.* 2021. Cell Discov. 7:24. [PubMed](#)
23. Hartwig T *et al.* 2018. Cell reports. 25(13):3564-3572 . [PubMed](#)
24. Howard E, *et al.* 2020. J Allergy Clin Immunol. . [PubMed](#)
25. Wang Y, *et al.* 2021. Sci Rep. 1.429861111. [PubMed](#)
26. Nevius E, *et al.* 2015. J Exp Med. 212: 1931 - 1946. [PubMed](#)
27. Zhu H, *et al.* 2020. J Bone Miner Res. 35:698. [PubMed](#)
28. Adam RC *et al.* 2018. Cell stem cell. 22(3):398-413 . [PubMed](#)
29. Watson JK, *et al.* 2020. Sci Rep. 10:10490. [PubMed](#)
30. Chatterjee S, *et al.* 2014. PLoS One. 9:87858. [PubMed](#)
31. Ludwik KA, *et al.* 2021. STAR Protocols. 2(1):100270. [PubMed](#)
32. Derecka M, *et al.* 2020. Nat Immunol. 26:21. [PubMed](#)
33. Lin C, *et al.* 2022. Nat Commun. 13:6869. [PubMed](#)
34. Löönd F, *et al.* 2022. STAR Protoc. 3:101438. [PubMed](#)
35. Sitaraman S, *et al.* 2019. Sci Rep. 9:12509. [PubMed](#)
36. Deerhake ME, *et al.* 2021. Immunity. 54(3):484-498.e8. [PubMed](#)
37. Barnes SE, *et al.* 2021. J Neuroinflammation. 18:199. [PubMed](#)
38. Pilling D, Gomer R 2014. PLoS One. 9:93730. [PubMed](#)
39. Pual VM, *et al.* 2019. PLOS Biology. 17(10):e3000492. [PubMed](#)
40. Budai Z, *et al.* 2021. Cells. 10:. [PubMed](#)
41. Buffolo M, *et al.* 2019. Cell Rep. 29:270. [PubMed](#)
42. Fu NY, *et al.* 2018. Dev Cell. 47:629. [PubMed](#)
43. Chen Z, *et al.* 2020. Cell Death Dis. 11:180. [PubMed](#)
44. Sountoulidis A, *et al.* 2012. PLoS One. 7:e41460. [PubMed](#)
45. Kwiecien K, *et al.* 2020. Sci Rep. 10:13702. [PubMed](#)
46. Christin JR, *et al.* 2020. Cell Reports. 31(10):107742. [PubMed](#)
47. De Micheli AJ, *et al.* 2020. Cell Rep. 30:3583. [PubMed](#)
48. Aoto M, *et al.* 2019. FEBS Open Bio. 9:291. [PubMed](#)
49. E O'Koren, R Mathew, D Saban 2016. Sci Rep. 6:20636. [PubMed](#)
50. Miao Y *et al.* 2019. Cell. 177(5):1172-1186 . [PubMed](#)
51. Samuelson DR, *et al.* 2021. Commun Biol. 4:997. [PubMed](#)
52. Seong J, *et al.* 2018. Development. 145:14. [PubMed](#)

RRID

AB_312968 (BioLegend Cat. No. 103103)
AB_312969 (BioLegend Cat. No. 103104)

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	1. Barclay A, <i>et al.</i> 1997. The Leukocyte Antigen FactsBook Academic Press. 2. Trowbridge IS, <i>et al.</i> 1993. <i>Annu. Rev. Immunol.</i> 12:85.

3. Kishihara K, *et al.* 1993. *Cell* 74:143.
4. Pulido R, *et al.* 1988. *J. Immunol.* 140:3851.

Gene ID [19264](#)

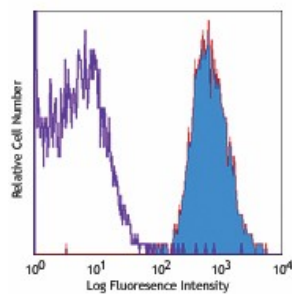
Related Protocols

[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 stained with biotinylated 30-F11, 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