

FITC anti-human CD45 Antibody

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| Catalog# / Size | 304005 / 25 tests 304006 / 100 tests 304054 / 100 µg 304038 / 500 tests |
| Clone | HI30 |
| Regulatory Status | RUO |
| Workshop | IV N816 |
| Other Names | LCA, T200 |
| Isotype | Mouse IgG1, κ |
| Description | CD45 is a 180-240 kD single chain type I membrane glycoprotein also known as leukocyte common antigen (LCA) and T200. It is a tyrosine phosphatase expressed on the plasma membrane of all hematopoietic cells, except erythrocytes and platelets. CD45 is a signaling molecule that regulates a variety of cellular processes including cell growth, differentiation, cell cycle, and oncogenic transformation. CD45 plays a critical role in T and B cell antigen receptor-mediated activation by dephosphorylating substrates including p56Lck, p59Fyn, and other Src family kinases. CD45 non-covalently associates with lymphocyte phosphatase-associated phosphoprotein (LPAP) on T and B lymphocytes. CD45 has been reported to bind galectin-1 and to be associated with several other cell surface antigens including CD1, CD2, CD3, and CD4. |

Product Details

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| Verified Reactivity | Human |
| Reported Reactivity | Chimpanzee |
| Antibody Type | Monoclonal |
| Host Species | Mouse |
| Formulation | µg size: Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide. test sizes: 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 | µg sizes: 0.5 mg/mL test 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 CD45 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 using the µg size, the suggested use of this reagent is ≤1.0 µg per million cells in 100 µl volume. It is recommended that the reagent be titrated for optimal performance for each application. For flow cytometric staining using the test sizes, 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 | Additional reported applications (for the relevant formats) include: immunohistochemical staining of acetone-fixed frozen tissue sections and formalin-fixed paraffin-embedded tissue sections ⁹ , inhibition of CD45 functions ⁴ , immunofluorescence ¹¹ , Western blotting ³ , and spatial biology (IBEX) ^{16,17} . |

It was found that the HI30 clone and the 2D1 clone can cross block each other's binding.

Application References

(PubMed link indicates
BioLegend citation)

1. Knapp W, *et al.* 1989. Leucocyte Typing IV. Oxford University Press. New York.
2. Kishihara K, *et al.* 1993. *Cell* 74:143.
3. Esser M, *et al.* 2001. *J. Virol.* 75:6173. (WB)
4. Yamada T, *et al.* 2002. *J. Biol. Chem.* 277:28830.
5. Nagano M, *et al.* 2007. *Blood* 110:151.
6. Jiang Q, *et al.* 2008. *Blood* 112:2858. [PubMed](#)
7. Morozov A, *et al.* 2010. *Clin Cancer Res.* 16:5630. [PubMed](#)
8. Yoshino N, *et al.* 2000. *Exp. Anim. (Tokyo)* 49:97. (FC)
9. Friedman T, *et al.* 1999. *J. Immunol.* 162:5256. (IHC)
10. Oeztuerk-Winder F, *et al.* 2012. *EMBO J.* 31:3431. (FC) [PubMed](#)
11. Rees LE, *et al.* 2003. *Clin. Exp. Immunol.* 134:497. (IF)
12. Lee J, *et al.* 2015. *J Exp Med.* 212:385. [PubMed](#)
13. Breton G, *et al.* 2015. *J Exp Med.* 212:401. [PubMed](#)
14. Marquardt N, *et al.* 2015. *J Immunol.* 6:2467. [PubMed](#)
15. Bushway ME, *et al.* 2014. *Biol Reprod.* 90(5): 110. (IF) [PubMed](#)
16. Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci USA.* 117:33455-33465. (SB) [PubMed](#)
17. Radtke AJ, *et al.* 2022. *Nat Protoc.* 17:378-401. (SB) [PubMed](#)

Product Citations

1. Mulay A, *et al.* 2021. *Cell Reports.* 35(5):109055. [PubMed](#)
2. Li Q, *et al.* 2019. *Am J Transl Res.* 10:4322. [PubMed](#)
3. Chabi S, *et al.* 2020. *Cell Reports.* 29(8):2307-2320.e6.. [PubMed](#)
4. Lau D, *et al.* 2022. *Nat Commun.* 13:4053. [PubMed](#)
5. Duccoli L, *et al.* 2021. *Nat Commun.* 12:925. [PubMed](#)
6. Chen X, *et al.* 2022. *Front Bioeng Biotechnol.* 10:915181. [PubMed](#)
7. Zong D, *et al.* 2021. *BMC Biol.* 19:79. [PubMed](#)
8. Jacoby E, *et al.* 2021. *NPJ Regen Med.* 6:58. [PubMed](#)
9. Lim JT, *et al.* 2020. *Mol Cancer Ther.* 1809:19. [PubMed](#)
10. Vishnoi M, *et al.* 2018. *Cancer Res.* 78:5349. [PubMed](#)
11. Gomzikova MO, *et al.* 2019. *Cells.* 0.440972222. [PubMed](#)
12. Selich A, *et al.* 2019. *Stem Cell Reports.* 13:262. [PubMed](#)
13. Miedema A, *et al.* 2022. *Acta Neuropathol Commun.* 10:8. [PubMed](#)
14. Sun Z, *et al.* 2022. *Stem Cell Res Ther.* 13:297. [PubMed](#)
15. Sun Q, *et al.* 2022. *Cell Death Dis.* 13:724. [PubMed](#)
16. Travaglini KJ, *et al.* 2020. *Nature.* 587:619. [PubMed](#)
17. Grove K, *et al.* 2016. *PLoS One.* 11: 0145961. [PubMed](#)
18. Skrbo N, *et al.* 2014. *PLoS One.* 9:113278. [PubMed](#)
19. Wang D, *et al.* 2019. *Cell Res.* 29:832. [PubMed](#)
20. Lu Y, *et al.* 2020. *Cell.* 180(6):1081-1097. [PubMed](#)
21. Liu Z, *et al.* 2021. *Molecules.* 26:. [PubMed](#)
22. Beatson RE, *et al.* 2021. *Cell Rep Med.* 2:100473. [PubMed](#)
23. Xia Y, *et al.* 2019. *Gastroenterol Res Pract.* 2019:5436961. [PubMed](#)
24. Schulz A, *et al.* 2019. *Cell Rep.* 29:1074. [PubMed](#)
25. Baccelli I, *et al.* 2020. *Cancer Cell.* 36(1):84-99. [PubMed](#)
26. Chen P, *et al.* 2021. *Front Immunol.* 12:689019. [PubMed](#)
27. Evans RDR, *et al.* 2020. *Nat Commun.* 3.491666667. [PubMed](#)
28. Koide M, *et al.* 2018. *Tohoku J Exp Med.* 244:15:00. [PubMed](#)
29. Wu CL, *et al.* 2021. *Nat Commun.* 12:362. [PubMed](#)
30. Yuan Z, *et al.* 2018. *Emerg Microbes Infect.* 7:59. [PubMed](#)
31. Yan K, *et al.* 2022. *iScience.* 25:104822. [PubMed](#)
32. Song M, *et al.* 2022. *J Gene Med.* 24:e3455. [PubMed](#)
33. Ehlers L, *et al.* 2021. *The FASEB Journal.* 35(7):e21684. [PubMed](#)
34. Oeztuerk-Winder F, *et al.* 2012. *EMBO J.* 31:3431. [PubMed](#)
35. Wu L, *et al.* 2018. *Oncol Lett.* 15:9507. [PubMed](#)
36. Yan Y, *et al.* 2018. *JCI Insight.* 3. [PubMed](#)
37. Zhang B, *et al.* 2013. *PLoS One.* 8:57114. [PubMed](#)
38. Zhang S, *et al.* 2021. *Stem Cells Int.* 6616240:2021. [PubMed](#)
39. Martínez-López M *et al.* 2019. *Immunity.* 50(2):446-461. [PubMed](#)
40. Oguri Y, *et al.* 2020. *Cell.* 182(3):563-577.e20. [PubMed](#)
41. Pabst C, *et al.* 2016. *Blood.* 127: 2018-2027. [PubMed](#)
42. Wang L, *et al.* 2014. *Proc Natl Acad Sci U S A.* 111:3146. [PubMed](#)
43. Ronaldson-Bouchard K, *et al.* 2022. *Nat Biomed Eng.* 6:351. [PubMed](#)
44. Saunders L, *et al.* 2015. *Sci Transl Med.* 7: 302ra136. [PubMed](#)
45. Wei Z, *et al.* 2021. *Nat Commun.* 0.805555556. [PubMed](#)
46. van Gastel N, *et al.* 2020. *Cell Metabolism.* 32(3):391-403.e6. [PubMed](#)
47. Joly P, *et al.* 2017. *PLoS One.* 12(6):e0180568. [PubMed](#)
48. Usmani SM *et al.* 2019. *Cell host & microbe.* 25(1):73-86. [PubMed](#)
49. Lee HJ, *et al.* 2017. *Oncotarget.* 8:113345. [PubMed](#)
50. Dai Z, *et al.* 2022. *Signal Transduct Target Ther.* 7:85. [PubMed](#)
51. Sicklinger F, *et al.* 2021. *J Clin Invest.* 131:. [PubMed](#)
52. Okurut S, *et al.* 2020. *Infect Immun.* 88:. [PubMed](#)
53. Hsieh J, *et al.* 2013. *Nucleic Acids Res.* 41:9753. [PubMed](#)
54. Didigu C, *et al.* 2014. *Blood.* 123:61. [PubMed](#)
55. Saraiva L, *et al.* 2019. *Cytometry B Clin Cytom.* N/A. [PubMed](#)
56. Nano R, *et al.* 2022. *STAR Protoc.* 3:101354. [PubMed](#)
57. Xu L, *et al.* 2022. *Int J Mol Sci.* 23:. [PubMed](#)
58. Blomme EE, *et al.* 2021. *Clin Transl Immunology.* 10:e1287. [PubMed](#)

59. He Y, *et al.* 2022. *Cells*. 11:. [PubMed](#)
60. Garrido-Martin EM, *et al.* 2020. *J Immunother Cancer*. 8:00. [PubMed](#)
61. Ran Y, *et al.* 2022. *Stem Cell Res Ther*. 13:507. [PubMed](#)
62. FitzPatrick MEB, *et al.* 2021. *Cell Rep*. 34:108661. [PubMed](#)
63. Labeledz-Maslowska A, *et al.* 2020. *Int J Mol Sci*. 21:. [PubMed](#)
64. S Tzeng 2016. *J Vis Exp*. 118:e54582. [PubMed](#)
65. Ding L *et al.* 2018. *Cell reports*. 25(11):2972-2980 . [PubMed](#)
66. Vishnoi M, *et al.* 2019. *Mol Oncol*. 13(9): 1913. [PubMed](#)
67. Pauken CM, *et al.* 2021. *Cancers (Basel)*. 13:. [PubMed](#)
68. Zamarin D, *et al.* 2020. *Clin Cancer Res*. 26:4531. [PubMed](#)
69. Yuan Z, *et al.* 2016. *J Virol*. 90: 7728 - 7739. [PubMed](#)
70. Genbacev O, *et al.* 2016. *Hum Reprod*. 31: 1300 - 1314. [PubMed](#)
71. Rousset F, *et al.* 2018. *Mol Ther Nucleic Acids*. 14:351. [PubMed](#)
72. Kerdidani D, *et al.* 2022. *J Exp Med*. 219:. [PubMed](#)
73. Wu SZ, *et al.* 2020. *EMBO J*. 39:e104063. [PubMed](#)
74. Bailey AL, *et al.* 2020. *bioRxiv*. . [PubMed](#)
75. Haynes BA, *et al.* 2019. *Arterioscler Thromb Vasc Biol*. 39:2168. [PubMed](#)
76. Tomellini E, *et al.* 2020. *Cell Reports*. 28(4):1063-1073.e5.. [PubMed](#)
77. Sprouse ML, *et al.* 2019. *Int J Mol Sci*. 20:8. [PubMed](#)
78. Niu C, *et al.* 2017. *Mol Med Rep*. 16:4879. [PubMed](#)
79. Sun YF, *et al.* 2021. *Nat Commun*. 12:4091. [PubMed](#)

RRID [AB_314393](#) (BioLegend Cat. No. 304005)
[AB_314394](#) (BioLegend Cat. No. 304006)
[AB_2564154](#) (BioLegend Cat. No. 304054)
[AB_2562050](#) (BioLegend Cat. No. 304038)

Antigen Details

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| Structure | Tyrosine phosphatases, type I transmembrane protein, 180-240 kD (multiple isoforms) |
| Distribution | Hematopoietic cells, not expressed in circulating erythrocytes or platelets |
| Function | TCR and BCR mediated activation |
| Ligand/Receptor | Galectin-1, CD2, CD3, CD4 |
| Cell Type | Hematopoietic stem and progenitors, Mesenchymal Stem Cells |
| 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. Thomas M. 1989. <i>Annu. Rev. Immunol.</i> 7:339. 2. Trowbridge I, <i>et al.</i> 1994. <i>Annu. Rev. Immunol.</i> 12:85. |
| Gene ID | 5788 |

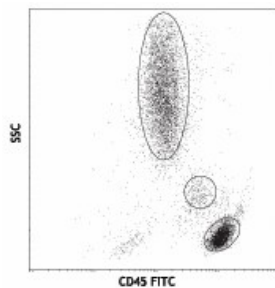
Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

Other Formats

APC anti-human CD45, Biotin anti-human CD45, FITC anti-human CD45, PE anti-human CD45, PE/Cyanine5 anti-human CD45, Purified anti-human CD45, APC/Cyanine7 anti-human CD45, PE/Cyanine7 anti-human CD45, Alexa Fluor® 488 anti-human CD45, Alexa Fluor® 647 anti-human CD45, Pacific Blue™ anti-human CD45, Alexa Fluor® 700 anti-human CD45, PerCP anti-human CD45, PerCP/Cyanine5.5 anti-human CD45, Brilliant Violet 421™ anti-human CD45, Brilliant Violet 570™ anti-human CD45, Brilliant Violet 510™ anti-human CD45, Brilliant Violet 605™ anti-human CD45, Brilliant Violet 650™ anti-human CD45, Purified anti-human CD45 (Maxpar® Ready), Brilliant Violet 785™ anti-human CD45, Brilliant Violet 711™ anti-human CD45, PE/Dazzle™ 594 anti-human CD45, Alexa Fluor® 594 anti-human CD45, APC/Fire™ 750 anti-human CD45, TotalSeq™-A0391 anti-human CD45, TotalSeq™-B0391 anti-human CD45, TotalSeq™-C0391 anti-human CD45, PE/Fire™ 640 anti-human CD45, APC/Fire™ 810 anti-human CD45, Spark YG™ 570 anti-human CD45, PE/Fire™ 700 anti-human CD45, Alexa Fluor® 660 anti-human CD45 Antibody, Spark Violet™ 538 anti-human CD45, Spark YG™ 593 anti-human CD45, GMP APC/Fire™ 750 anti-human CD45, GMP APC anti-human CD45, Spark UV™ 387 anti-human CD45, GMP Pacific Blue™ anti-human CD45, GMP PerCP anti-human CD45, GMP FITC anti-human CD45, GMP PE/Dazzle™ 594 anti-human CD45, GMP PerCP/Cyanine5.5 anti-human CD45

Product Data



Human peripheral blood lymphocytes, monocytes and granulocytes stained with HI30 FITC

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