

PE/Cyanine7 anti-mouse/human CD45R/B220 Antibody

Catalog# / Size	103221 / 25 µg 103222 / 100 µg
Clone	RA3-6B2
Regulatory Status	RUO
Other Names	B220
Isotype	Rat IgG2a, κ
Description	CD45R, also known as B220, is an isoform of CD45. It is a member of the protein tyrosine phosphatase (PTP) family with a molecular weight of approximately 180-240 kD. CD45R is expressed on B cells (at all developmental stages from pro-B cells through mature B cells), activated B cells, and subsets of T and NK cells. CD45R (B220) is also expressed on a subset of abnormal T cells involved in the pathogenesis of systemic autoimmunity in MRL- <i>Fas^{lpr}</i> and MRL- <i>Fas^{gld}</i> mice. It plays a critical role in TCR and BCR signaling. The primary ligands for CD45 are galectin-1, CD2, CD3, and CD4. CD45R is commonly used as a pan-B cell marker; however, CD19 may be more appropriate for B cell specificity.

Product Details

Verified Reactivity	Mouse, Human
Reported Reactivity	Cat
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	Abelson murine leukemia virus-induced pre-B tumor cells
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography, and conjugated with PE/Cyanine7 under optimal conditions.
Concentration	0.2 mg/ml
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	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	Blue Laser (488 nm) Green Laser (532 nm)/Yellow-Green Laser (561 nm)
Application Notes	Clone RA3-6B2 has been described to react with an epitope on the extracellular domain of the transmembrane CD45 glycoprotein which is dependent upon the expression of exon A and specific carbohydrate residues. Additional reported applications (for the relevant formats) include: immunoprecipitation ¹ , <i>in vitro</i> and <i>in vivo</i> modulation of B cell responses ²⁻⁴ , immunohistochemistry of acetone-fixed frozen sections and formalin-fixed paraffin-embedded sections ^{5,6} , and spatial biology (IBEX) ^{14,15} .
Additional Product Notes	BioLegend is in the process of converting the name PE/Cy7 to PE/Cyanine7. The dye molecule remains the same, so you should expect the same quality and performance from our PE/Cyanine7 products. Please contact Technical Service if you have any questions.
Application References	<ol style="list-style-type: none"> 1. Coffman RL. 1982. <i>Immunol. Rev.</i> 69:5. (IP) 2. George A, et al. 1994. <i>J. Immunol.</i> 152:1014. (Activ)

3. Asensi V, *et al.* 1989. *Immunology* 68:204. (Activ)
4. Domiati-Saad R, *et al.* 1993. *J. Immunol.* 151:5936. (Activ)
5. Hata H, *et al.* 2004. *J. Clin. Invest.* 114:582. (IHC)
6. Monteith CE, *et al.* 1996. *Can. J. Vet. Res.* 60:193. (IHC)
7. Shih FF, *et al.* 2006. *J. Immunol.* 176:3438. (FC)
8. Chang C L-T, *et al.* 2007. *J. Immunol.* 178:6984.
9. Fazilleau N, *et al.* 2007. *Nature Immunol.* 8:753.
10. Lang GL, *et al.* 2008. *Blood* 111:2158. [PubMed](#)
11. Charles N, *et al.* 2010. *Nat. Med.* 16:701. (FC) [PubMed](#)
12. del Rio ML, *et al.* 2011. *Transpl. Int.* 24:501. (FC) [PubMed](#)
13. Murakami R, *et al.* 2013. *PLoS One.* 8:73270. [PubMed](#)
14. Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci U S A.* 117:33455-65. (SB) [PubMed](#)
15. Radtke AJ, *et al.* 2022. *Nat Protoc.* 17:378-401. (SB) [PubMed](#)

Product Citations

1. Tran NT, *et al.* 2019. *Cell Rep.* 28:3510. [PubMed](#)
2. Nagamachi A, *et al.* 2021. *J Clin Invest.* 131:. [PubMed](#)
3. Ouchida R, *et al.* 2012. *Proc Natl Acad Sci U S A.* 109:e2699. [PubMed](#)
4. Ait-Azzouzene D, *et al.* 2010. *J Immunol.* 185:1015. [PubMed](#)
5. Viny AD, *et al.* 2019. *Cell Stem Cell.* 25:682. [PubMed](#)
6. Sakamoto A, *et al.* 2017. *Int Immunol.* . 10.1093/intimm/dxx054. [PubMed](#)
7. Schloss MJ, *et al.* 2022. *Nat Immunol.* 23:605. [PubMed](#)
8. Schönberger K, *et al.* 2022. *Cell Stem Cell.* 29:131. [PubMed](#)
9. Symeonidou V, *et al.* 2021. *Cell Rep.* 37:109900. [PubMed](#)
10. Farsakoglu Y *et al.* 2019. *Cell reports.* 26(9):2307-2315 . [PubMed](#)
11. Ersching J *et al.* 2017. *Immunity.* 46(6):1045-1058 . [PubMed](#)
12. Manion KP, *et al.* 2020. *PLoS One.* 15:e0236664. [PubMed](#)
13. Gutiérrez-Gutiérrez Ó, *et al.* 2021. *EMBO Rep.* 22:e52905. [PubMed](#)
14. Paubelle E, *et al.* 2020. *Cell Reports.* 30(3):739-754.e4.. [PubMed](#)
15. Li Y, *et al.* 2020. *Cell Rep.* 30:1753. [PubMed](#)
16. Castellanos CA, *et al.* 2021. *Sci Immunol.* 6:eabh0707. [PubMed](#)
17. Mathew NR, *et al.* 2021. *Cell Reports.* 35(12):109286. [PubMed](#)
18. Pérez-Maziah D *et al.* 2017. *EBioMedicine.* 24:216-230 . [PubMed](#)
19. Fukushima T, *et al.* 2019. *Cell Rep.* 29:4144. [PubMed](#)
20. Suzuki M, *et al.* 2021. *Sci Adv.* 7:. [PubMed](#)
21. Ohyagi M, *et al.* 2021. *Nat Commun.* 12:7344. [PubMed](#)
22. Majumder P, *et al.* 2021. *J Immunol.* 206:2221. [PubMed](#)
23. Heizmann B, *et al.* 2013. *J Exp Med.* 210:2823. [PubMed](#)
24. Sharma PK, *et al.* 2018. *Cancer Gene Ther.* 25:27. [PubMed](#)
25. Silva M, *et al.* 2021. *Sci Immunol.* 6:eabf1152. [PubMed](#)
26. Li Y, *et al.* 2022. *Clin Transl Immunology.* 11:e1362. [PubMed](#)
27. Lee RD, *et al.* 2021. *Nat Commun.* 12:6843. [PubMed](#)
28. Shan M *et al.* 2018. *Immunity.* 49(4):709-724 . [PubMed](#)
29. He W *et al.* 2018. *Immunity.* 49(6):1175-1190 . [PubMed](#)
30. Terashima Y, *et al.* 2020. *Nat Commun.* 11:609. [PubMed](#)
31. Sandborn WJ, *et al.* 2021. *Gastroenterology.* 161:1853. [PubMed](#)
32. Li X, *et al.* 2020. *Mol Ther.* 28:2430. [PubMed](#)
33. Burrack K, *et al.* 2015. *PLoS Pathog.* 11: e1005191. [PubMed](#)
34. Stacey M, *et al.* 2011. *J Immunol.* 187:2944. [PubMed](#)
35. Fallet B, *et al.* 2020. *Cell Rep.* 30:1013. [PubMed](#)
36. Liu D *et al.* 2019. *Immunity.* 51(1):64-76 . [PubMed](#)
37. Kotaki R, *et al.* 2020. *Sci Rep.* 10:13554. [PubMed](#)
38. Kobayashi M, *et al.* 2020. *Bio Protoc.* 10:e3601. [PubMed](#)
39. Fennell LM, *et al.* 2020. *EMBO J.* 39:e103303. [PubMed](#)
40. Volberding PJ, *et al.* 2021. *Cell Reports.* 35(8):109160. [PubMed](#)
41. Burrack K, *et al.* 2015. *J Immunol.* 194:678. [PubMed](#)
42. Frodermann V, *et al.* 2019. *Nat Med.* 25:1761. [PubMed](#)
43. Albarrán-Juárez J, *et al.* 2016. *Atherosclerosis.* 251:445-53. [PubMed](#)
44. Wannner-Seleznik GM, *et al.* 2020. *Immunohorizons.* 0.6444444444. [PubMed](#)
45. Trefzer A, *et al.* 2021. *Cell Reports.* 34(6):108748. [PubMed](#)
46. Zhu H, *et al.* 2019. *Nat Commun.* 10:1084. [PubMed](#)
47. Tran NT, *et al.* 2020. *STAR Protocols.* 1(1):100028. [PubMed](#)
48. Yi W, *et al.* 2021. *Cell Reports.* 34(13):108922. [PubMed](#)
49. Crouse B, *et al.* 2020. *NPJ Vaccines.* 0.277083333. [PubMed](#)
50. Rozanski C, *et al.* 2015. *J Immunol.* 194:4717. [PubMed](#)
51. Chen Z, *et al.* 2019. *J Exp Med.* 216:152. [PubMed](#)
52. Timilshina M, *et al.* 2017. *PLoS One.* 10.1371/journal.pone.0168942. [PubMed](#)
53. Di Mitri D, *et al.* 2019. *Cell Rep.* 28:2156. [PubMed](#)
54. Zeng Q, *et al.* 2022. *iScience.* 25:105151. [PubMed](#)
55. Chen RJ, *et al.* 2022. *iScience.* 25:105595. [PubMed](#)
56. Chen R, *et al.* 2021. *Cell Reports.* 34(7):108751. [PubMed](#)
57. Alexandre YO, *et al.* 2020. *Cell Reports.* 33(13):108567. [PubMed](#)
58. Tozuka M, *et al.* 2016. *J Dermatol Sci.* 82: 38-45. [PubMed](#)
59. Lamoureux J, *et al.* 2007. *J Exp Med.* 204:2853. [PubMed](#)
60. Xueyang Yu *et al.* 2017. *Immunity.* 47(5):903-912 . [PubMed](#)
61. Kiyohara H, *et al.* 2018. *Cell Mol Gastroenterol Hepatol.* 7:135. [PubMed](#)
62. Zhang CR, *et al.* 2022. *Blood Cancer Discov.* 3:220. [PubMed](#)
63. Wang W, *et al.* 2021. *J Am Heart Assoc.* 10:e019142. [PubMed](#)
64. Ha TC, *et al.* 2020. *Hum Gene Ther.* 32:458. [PubMed](#)

65. Richardson ET, *et al.* 2015. PLoS One. 10: 1371. [PubMed](#)
66. Miyauchi K, *et al.* 2016. Nat Immunol. 17:1447-1458. [PubMed](#)
67. Kobia FM, *et al.* 2020. PLoS Biol. 18:e3000850. [PubMed](#)
68. Haniuda K, *et al.* 2020. Cell Rep. 33:108333. [PubMed](#)
69. Celik H, *et al.* 2018. Cancer Cell. 34:741. [PubMed](#)
70. Lu X, *et al.* 2019. Cell Rep. 28:472. [PubMed](#)
71. Shehata L, *et al.* 2019. Cell Rep. 28:3300. [PubMed](#)
72. Schönberger K, *et al.* 2022. STAR Protoc. 3:101408. [PubMed](#)
73. Agrawal M, *et al.* 2022. Blood. 140:1094. [PubMed](#)
74. Ulrich V, *et al.* 2016. EMBO Mol Med. 8: 643 - 653. [PubMed](#)
75. Valkenburg S, *et al.* 2016. Sci Rep. 6:22666. [PubMed](#)
76. Xie X, *et al.* 2015. Sci Rep. 5: 18115. [PubMed](#)
77. Leary N, *et al.* 2022. J Extracell Vesicles. 11:e12197. [PubMed](#)
78. El-Zaatari M, *et al.* 2017. Gastroenterology. 10.1053/j.gastro.2017.09.002. [PubMed](#)
79. Satoh-Takayama N, *et al.* 2020. Immunity. 52(4):635-649. [PubMed](#)
80. Chao JL, *et al.* 2021. Cell Rep Med. 2:100399. [PubMed](#)
81. Read BJ, *et al.* 2022. Cell Rep. 38:110217. [PubMed](#)
82. Zhong C, *et al.* 2021. J Virol. 95:e0092521. [PubMed](#)
83. Matsushita N, *et al.* 2016. Sci Rep. 6:31266. [PubMed](#)
84. Ramanan D, *et al.* 2020. Cell. 181(6):1276-1290. [PubMed](#)
85. Tomita T, *et al.* 2021. Nat Commun. 12:3655. [PubMed](#)
86. Timilshina M, *et al.* 2020. Cell Reports. 27(10):2948-2961.e7.. [PubMed](#)
87. Rappe JCF, *et al.* 2021. J Exp Med. 218:. [PubMed](#)
88. Zhang M, *et al.* 2022. iScience. 25:104490. [PubMed](#)
89. Rodrigues KA, *et al.* 2021. Sci Adv. 7:eabj6538. [PubMed](#)
90. Liu A, *et al.* 2022. Front Cell Infect Microbiol. 12:960208. [PubMed](#)
91. Nabekura T, *et al.* 2020. Immunity. 96:52. [PubMed](#)
92. Patterson DG, *et al.* 2021. J Immunol. 207:1798. [PubMed](#)
93. Wirasinha RC, *et al.* 2021. J Exp Med. 218: . [PubMed](#)

RRID AB_313004 (BioLegend Cat. No. 103221)
 AB_313005 (BioLegend Cat. No. 103222)

Antigen Details

Structure	Protein tyrosine phosphatase (PTP) family, 180-240 kD
Distribution	B cells, T cell subset, NK cell subset
Function	Phosphatase, T and B cell activation
Ligand/Receptor	Galectin-1, CD2, CD3, CD4
Cell Type	B cells, NK cells, T cells
Biology Area	Cell Biology, Immunology, Inhibitory Molecules, Neuroscience, Neuroscience Cell Markers
Molecular Family	CD Molecules
Antigen References	<ol style="list-style-type: none"> 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, <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 5788

Related Protocols

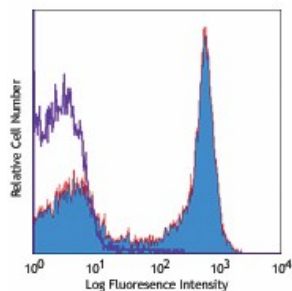
[Cell Surface Flow Cytometry Staining Protocol](#)

Other Formats

Alexa Fluor® 594 anti-mouse/human CD45R/B220, APC anti-mouse/human CD45R/B220, Biotin anti-mouse/human CD45R/B220, FITC anti-mouse/human CD45R/B220, PE anti-mouse/human CD45R/B220, PE/Cyanine5 anti-mouse/human CD45R/B220, Purified anti-mouse/human CD45R/B220, PE/Cyanine7 anti-mouse/human CD45R/B220, APC/Cyanine7 anti-mouse/human CD45R/B220, Alexa Fluor® 488 anti-mouse/human CD45R/B220, Alexa Fluor® 647 anti-mouse/human CD45R/B220, Pacific Blue™ anti-

mouse/human CD45R/B220, Alexa Fluor® 700 anti-mouse/human CD45R/B220, PerCP anti-mouse/human CD45R/B220, PerCP/Cyanine5.5 anti-mouse/human CD45R/B220, Brilliant Violet 421™ anti-mouse/human CD45R/B220, Brilliant Violet 570™ anti-mouse/human CD45R/B220, Brilliant Violet 650™ anti-mouse/human CD45R/B220, Brilliant Violet 605™ anti-mouse/human CD45R/B220, Brilliant Violet 785™ anti-mouse/human CD45R/B220, Brilliant Violet 510™ anti-mouse/human CD45R/B220, Purified anti-mouse/human CD45R/B220 (Maxpar® Ready), Brilliant Violet 711™ anti-mouse/human CD45R/B220, PE/Dazzle™ 594 anti-mouse/human CD45R/B220, APC/Fire™ 750 anti-mouse/human CD45R/B220, Brilliant Violet 750™ anti-mouse/human CD45R/B220, TotalSeq™-A0103 anti-mouse/human CD45R/B220, Spark Blue™ 550 anti-mouse/human CD45R/B220, Spark NIR™ 685 anti-mouse/human CD45R/B220, TotalSeq™-B0103 anti-mouse/human CD45R/B220, Ultra-LEAF™ Purified anti-mouse/human CD45R/B220, TotalSeq™-C0103 anti-mouse/human CD45R/B220, PE/Fire™ 640 anti-mouse/human CD45R/B220, APC/Fire™ 810 anti-mouse/human CD45R/B220, PE/Fire™ 700 anti-mouse/human CD45R/B220, Spark Violet™ 538 anti-mouse/human CD45R/B220, Spark YG™ 581 anti-mouse/human CD45R/B220, Spark YG™ 570 anti-mouse/human CD45R/B220, PE/Fire™ 810 anti-mouse/human CD45R/B220, Spark Blue™ 574 anti-mouse/human CD45R/B220 Antibody, Spark Violet™ 423 anti-mouse/human CD45R/B220 Antibody, Spark Red™ 718 anti-mouse/human CD45R/B220

Product Data



C57BL/6 mouse splenocytes stained with RA3-6B2 PE/Cyanine7

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