

## Brilliant Violet 510™ anti-human CD45RA Antibody

<b>Catalog# / Size</b>	304141 / 25 tests 304142 / 100 tests
<b>Clone</b>	HI100
<b>Regulatory Status</b>	RUO
<b>Workshop</b>	IV N906
<b>Other Names</b>	GP180, L-CA, LCA, LY5, T200, PTPRC
<b>Isotype</b>	Mouse IgG2b, κ
<b>Description</b>	CD45RA is a 205-220 kD single chain type I glycoprotein. It is an exon 4 splice variant of the tyrosine phosphatase CD45. The CD45RA isoform is expressed on resting/naïve T cells, medullary thymocytes, B cells and monocytes. CD45RA enhances both T cell receptor and B cell receptor signaling. CD45 non-covalently associates with lymphocyte phosphatase-associated phosphoprotein (LPAP) on T and B lymphocytes. CD45 has been reported to be associated with several other cell surface antigens including CD1, CD2, CD3, and CD4. CD45 has also been reported to bind galectin-1. CD45 isoform expression can change in response to cytokines.

### Product Details

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<b>Verified Reactivity</b>	Human
<b>Reported Reactivity</b>	Chimpanzee
<b>Antibody Type</b>	Monoclonal
<b>Host Species</b>	Mouse
<b>Formulation</b>	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA).
<b>Preparation</b>	The antibody was purified by affinity chromatography and conjugated with Brilliant Violet 510™ under optimal conditions.
<b>Concentration</b>	Lot-specific (to obtain lot-specific concentration, please enter the lot number in our <a href="#">Concentration and Expiration Lookup</a> or <a href="#">Certificate of Analysis</a> online tools.)
<b>Storage &amp; Handling</b>	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. <b>Do not freeze.</b>
<b>Application</b>	<a href="#">FC - Quality tested</a>
<b>Recommended Usage</b>	Each lot of this antibody is quality control tested by <a href="#">immunofluorescent staining with flow cytometric analysis</a> . For flow cytometric staining, 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.

Brilliant Violet 510™ excites at 405 nm and emits at 510 nm. The bandpass filter 510/50 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 510™ is a trademark of Sirigen Group Ltd.

[Learn more about Brilliant Violet™.](#)

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<b>Excitation Laser</b>	Violet Laser (405 nm)
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**Application Notes** Additional reported applications (for relevant formats of this clone) include: inhibition of CD45 functions<sup>2</sup>, immunohistochemical staining of frozen tissue sections<sup>3</sup> and formalin-fixed paraffin-embedded tissue sections<sup>4</sup>, and immunocytochemistry<sup>15,16</sup>.

#### Application References

1. Knapp W, *et al.* 1989. Leucocyte Typing IV. Oxford University Press. New York.
2. Yamada T, *et al.* 2002. *J. Biol. Chem.* 277:28830. (WB, Block)
3. Weninger W, *et al.* 2003 *J. Immunol.* 170:4638. (IHC-F)
4. Imanguli MM, *et al.* 2009. *Blood.* 113:3620 (IHC-P)
5. Roque S, *et al.* 2007. *J. Immunol.* 178:8028. (FC) [PubMed](#)
6. Smeltz RB. 2007. *J. Immunol.* 178:4786. (FC) [PubMed](#)
7. Palendra U, *et al.* 2008. *Blood* (FC) [PubMed](#)
8. Kuttruff S, *et al.* 2009. *Blood* 113:358. (FC) [PubMed](#)
9. Thakral D, *et al.* 2008. *J. Immunol.* 180:7431. (FC) [PubMed](#)
10. Alanio C, *et al.* 2010. *Blood* 115:3718. (FC) [PubMed](#)
11. Iannello A, *et al.* 2010. *J. Immunol.* 184:114. (FC) [PubMed](#)
12. Yoshino N, *et al.* 2000. *Exp. Anim. (Tokyo)* 49:97. (FC)
13. Guereau-de-Arellan M, *et al.* 2011. *Brain.* 134:3578. [PubMed](#)
14. Canque B, *et al.* 2000. *Blood* 96:3748. (ICC)
15. Imanguli MM, *et al.* 2009. *Blood* 113:3620. (ICC)
16. Stoeckius M, *et al.* 2017. *Nat. Methods.* 14:865. (PG)
17. Peterson VM, *et al.* 2017. *Nat. Biotechnol.* 35:936. (PG)

#### Product Citations

1. Sajadi MM, *et al.* 2018. *Cell.* 173:1783. [PubMed](#)
2. Mayassi T, *et al.* 2019. *Cell.* 176:967. [PubMed](#)
3. Delacher M, *et al.* 2021. *Immunity.* 54(4):702-720.e17. [PubMed](#)
4. Mian S, *et al.* 2015. *Nat Commun.* 6: 10004. [PubMed](#)
5. van der Burg M, *et al.* 2019. *Front Immunol.* 10:246. [PubMed](#)
6. Minagawa A, *et al.* 2018. *Cell Stem Cell.* 1.548611111. [PubMed](#)
7. Yan J, *et al.* 2020. *Cell Rep.* 107820:31. [PubMed](#)
8. Den Braanker H, *et al.* 2021. *Front Immunol.* 12:768113. [PubMed](#)
9. Khosravi-Maharlooei M, *et al.* 2021. *J Autoimmun.* 119:102612. [PubMed](#)
10. Cheng J, *et al.* 2022. *iScience.* 25:103588. [PubMed](#)
11. Lee J, *et al.* 2015. *J Exp Med.* 212:385. [PubMed](#)
12. Breton G, *et al.* 2015. *J Exp Med.* 212:401. [PubMed](#)
13. Adel-Patient K, *et al.* 2018. *Clin Transl Allergy.* 8:38. [PubMed](#)
14. Cytlak U, *et al.* 2020. *Immunity.* 53(2):353-370. [PubMed](#)
15. van Dongen JJM, *et al.* 2019. *Front Immunol.* 10:1271. [PubMed](#)

#### RRID

AB\_2561384 (BioLegend Cat. No. 304141)  
AB\_2561947 (BioLegend Cat. No. 304142)

## Antigen Details

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<b>Structure</b>	Tyrosine phosphatases, type I transmembrane (exon 4 splicing of CD45 gene), 205-220 kD
<b>Distribution</b>	B cells, naïve T cells, monocytes
<b>Function</b>	Enhances TCR and BCR signaling
<b>Ligand/Receptor</b>	Galectin-1, CD2, CD3, CD4
<b>Cell Type</b>	B cells, Monocytes, T cells, Tregs
<b>Biology Area</b>	Cell Biology, Immunology, Inhibitory Molecules, Neuroscience, Neuroscience Cell Markers
<b>Molecular Family</b>	CD Molecules
<b>Antigen References</b>	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.
<b>Gene ID</b>	<a href="#">5788</a>

## Related Protocols

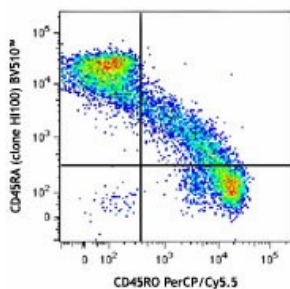
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[Cell Surface Flow Cytometry Staining Protocol](#)

## Other Formats

APC anti-human CD45RA, Biotin anti-human CD45RA, FITC anti-human CD45RA, PE anti-human CD45RA, PE/Cyanine5 anti-human CD45RA, Purified anti-human CD45RA, Alexa Fluor® 488 anti-human CD45RA, Alexa Fluor® 647 anti-human CD45RA, Pacific Blue™ anti-human CD45RA, Alexa Fluor® 700 anti-human CD45RA, PerCP/Cyanine5.5 anti-human CD45RA, PE/Cyanine7 anti-human CD45RA, APC/Cyanine7 anti-human CD45RA, Brilliant Violet 421™ anti-human CD45RA, Brilliant Violet 570™ anti-human CD45RA, Brilliant Violet 605™ anti-human CD45RA, Brilliant Violet 650™ anti-human CD45RA, Brilliant Violet 711™ anti-human CD45RA, Brilliant Violet 785™ anti-human CD45RA, Brilliant Violet 510™ anti-human CD45RA, Purified anti-human CD45RA (Maxpar® Ready), PE/Dazzle™ 594 anti-human CD45RA, APC/Fire™ 750 anti-human CD45RA, PerCP anti-human CD45RA, TotalSeq™-A0063 anti-human CD45RA, Alexa Fluor® 594 anti-human CD45RA, TotalSeq™-B0063 anti-human CD45RA, TotalSeq™-C0063 anti-human CD45RA, Brilliant Violet 750™ anti-human CD45RA, Spark NIR™ 685 anti-human CD45RA, PE/Fire™ 640 anti-human CD45RA, PE/Fire™ 700 anti-human CD45RA Antibody, Spark YG™ 581 anti-human CD45RA, TotalSeq™-D0063 anti-human CD45RA, Spark Violet™ 423 anti-human CD45RA, GMP FITC anti-human CD45RA, Spark UV™ 387 anti-human CD45RA

## Product Data



Human peripheral blood lymphocytes were stained with CD45RO PerCP/Cy5.5 and CD45RA (clone HI100) Brilliant Violet 510™.

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