

## PerCP/Cyanine5.5 anti-human CD45 Antibody

<b>Catalog# / Size</b>	304027 / 25 tests 304028 / 100 tests
<b>Clone</b>	HI30
<b>Regulatory Status</b>	RUO
<b>Workshop</b>	IV N816
<b>Other Names</b>	LCA, T200
<b>Isotype</b>	Mouse IgG1, $\kappa$
<b>Description</b>	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

<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 PerCP/Cyanine5.5 under optimal conditions.
<b>Concentration</b>	Lot-specific (to obtain lot-specific concentration and expiration, please enter the lot number in our <a href="#">Certificate of Analysis</a> online tool.)
<b>Storage &amp; Handling</b>	The CD45 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> <a href="#">SB - Community Verified</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 $\mu$ l per million cells in 100 $\mu$ l staining volume or 5 $\mu$ l per 100 $\mu$ l of whole blood.  * PerCP/Cyanine5.5 has a maximum absorption of 482 nm and a maximum emission of 690 nm.
<b>Excitation Laser</b>	Blue Laser (488 nm)
<b>Application Notes</b>	Additional reported applications (for the relevant formats) include: immunohistochemical staining of acetone-fixed frozen tissue sections and formalin-fixed paraffin-embedded tissue sections <sup>9</sup> , inhibition of CD45 functions <sup>4</sup> , immunofluorescence <sup>11</sup> , Western blotting <sup>3</sup> , and spatial biology (IBEX) <sup>16,17</sup> .  It was found that the HI30 clone and the 2D1 clone can cross block each other's binding.
<b>Additional Product Notes</b>	For the use of this antibody in spatial biology (SB), we have partnered with Bruker Spatial Biology Biosciences for demonstration of this antibody on their next-generation ChipCytometry instrument called the CellScape™. The CellScape platform is an end-to-end solution for highly multiplexed spatial omics. Combining an advanced, purpose-built imaging system with easy-to-use fluidics for walk-away automation, the CellScape system will accelerate your exploration into the rapidly evolving field of

spatial biology. More information on the the Bruker Spatial Biology CellScape and a complete list of our antibodies that have been demonstrated on the instrument can be found [here](#).

#### Application References

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](#)
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11. Rees LE, *et al.* 2003. *Clin. Exp. Immunol.* 134:497. (IF)
12. Lee J, *et al.* 2015. *J Exp Med.* 212:385. [PubMed](#)

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#### Product Citations

1. Duraiswamy J, *et al.* 2021. *Cancer Cell.* 39:1623. [PubMed](#)
2. Gur C, *et al.* 2022. *Cell.* 185:1373. [PubMed](#)
3. Gao Y, *et al.* 2023. *iScience.* 26:106729. [PubMed](#)
4. Changsheng H, *et al.* 2023. *Sci Adv.* 9:eade4186. [PubMed](#)
5. Junker F, *et al.* 2021. *Cytometry A.* 99:832. [PubMed](#)
6. Kaczanowska S, *et al.* 2021. *Cell.* 184(8):2033-2052.e21. [PubMed](#)
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10. Caggiati A, *et al.* 2017. *Aesthet Surg J.* 10.1093/asj/sjw211. [PubMed](#)
11. Gerhauser C *et al.* 2018. *Cancer cell.* 34(6):996-1011 . [PubMed](#)
12. Cai D, *et al.* 2021. *Front Mol Biosci.* 8:686803. [PubMed](#)

#### RRID

AB\_893338 (BioLegend Cat. No. 304027)  
AB\_893338 (BioLegend Cat. No. 304028)

## Antigen Details

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

1. Thomas M. 1989. *Annu. Rev. Immunol.* 7:339.
2. Trowbridge I, *et al.* 1994. *Annu. Rev. Immunol.* 12:85.

#### Gene ID

[5788](#)

## Related Protocols

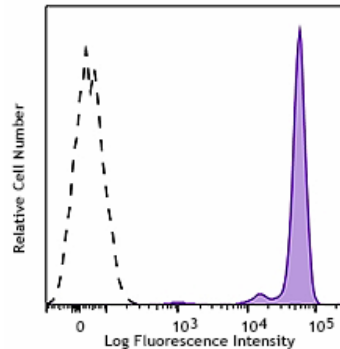
- [Cell Surface Flow Cytometry Staining Protocol](#)

## Other Formats

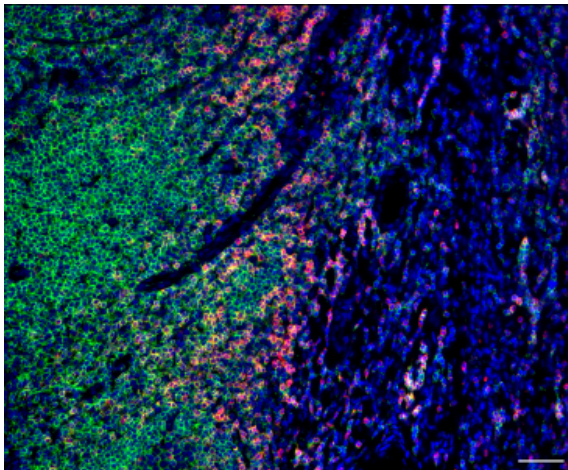
APC anti-human CD45, Biotin anti-human CD45, FITC anti-human CD45, PE anti-human CD45, PE/Cyanine5 anti-human CD45, Purified anti-human CD45, APC/Cyanine7 anti-human CD45, PE/Cyanine7 anti-human CD45, Alexa Fluor® 488 anti-human CD45, Alexa Fluor® 647 anti-human CD45, Pacific Blue™ anti-human CD45, Alexa 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, Spark Blue™ 515 anti-human CD45, TotalSeq™-D0391 anti-human CD45, GMP PE/Cyanine7 anti-human CD45, Spark Violet™ 500 anti-human CD45, GMP PE anti-human CD45, PE/Fire™ 810 anti-human CD45, Spark PLUS UV395™ anti-human CD45, Spark NIR™ 685 anti-human CD45, Spark Violet™ 423 anti-human CD45, GMP Spark Violet™ 538 anti-human CD45

## Product Data



Human peripheral blood lymphocytes were stained with HI30 PerCP/Cyanine5.5 (filled histogram), or mouse IgG1, κ PerCP/Cyanine5.5 isotype control (open histogram).



Multiplexed IHC staining of PerCP/Cyanine5.5 anti-CD45 (clone 2D1) on formalin-fixed paraffin-embedded human tonsil tissue, validated for use on the Cellscope™. The tissue was iteratively stained with PerCP/Cyanine5.5 anti-CD45 (clone 2D1, red) and PE anti-CD20 (green) for one hour at room temperature. Nuclei were counterstained with Hoechst 33342. Images were captured with a 20X objective. Scale bar: 50 μm

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