

Alexa Fluor® 594 anti-mouse CD45 Antibody

Catalog# / Size	103144 / 100 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 Alexa Fluor® 594 under optimal conditions.
Concentration	0.5 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	IHC-F - Quality tested FC, 3D IHC - Verified
Recommended Usage	<p>Each lot of this antibody is quality control tested by immunohistochemical staining on frozen tissue sections. For immunohistochemistry, a concentration range of 1.0 - 5.0 µg/mL is suggested. For flow cytometric staining, the suggested use of this reagent is ≤ 0.25 µg per million cells in 100 µL volume. For 3D immunohistochemistry on formalin-fixed tissues, a concentration of 5.0 µg/mL is suggested. It is recommended that the reagent be titrated for optimal performance for each application.</p> <p>* Alexa Fluor® 594 has an excitation maximum of 590 nm, and a maximum emission of 617 nm.</p> <p>Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation.</p> <p>View full statement regarding label licenses</p>
Excitation Laser	Green Laser (532 nm)/Yellow-Green Laser (561 nm)
Application Notes	<p>Clone 30-F11 reacts with all isoforms and both CD45.1 and CD45.2 alloantigens of CD45.</p> <p>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).</p>

Application References

1. Podd BS, *et al.* 2006. *J. Immunol.* 176:6532. (FC, CMCD) [PubMed](#)

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

Product Citations

1. Bradford BM, *et al.* 2018. *Parasite Immunol.* 40:e12566. [PubMed](#)
2. Meyers CA, *et al.* 2020. *Cell Reports.* 31(8):107696. [PubMed](#)
3. Kure K, *et al.* 2020. *Oncol Lett.* 19:2286. [PubMed](#)
4. Grainger N, *et al.* 2020. *J Physiol.* 598:3283. [PubMed](#)
5. DeDreu J, *et al.* 2022. *FASEB J.* 36:e21995. [PubMed](#)

RRID

AB_2563458 (BioLegend Cat. No. 103144)

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	<ol style="list-style-type: none"> 1. Barclay A, <i>et al.</i> 1997. <i>The Leukocyte Antigen FactsBook</i> 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

Related Protocols

[Immunohistochemistry Protocol for Frozen Sections](#)

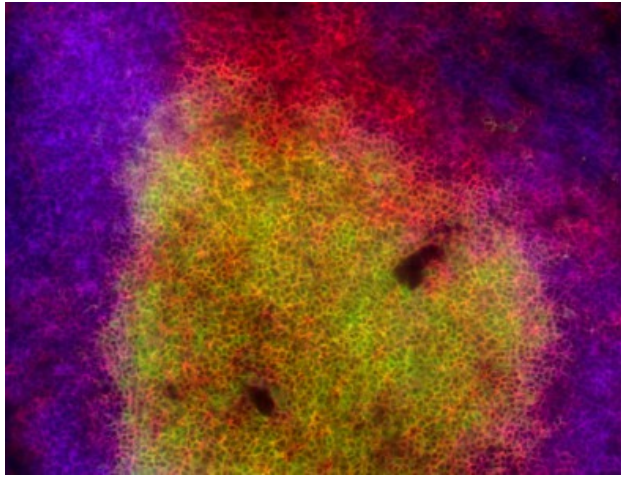
[Cell Surface Flow Cytometry Staining Protocol](#)

[Ce3D™ Tissue Clearing Kit](#)

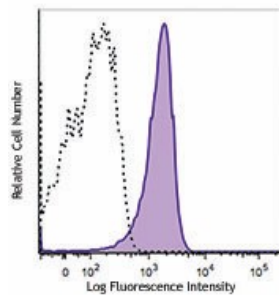
Other Formats

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

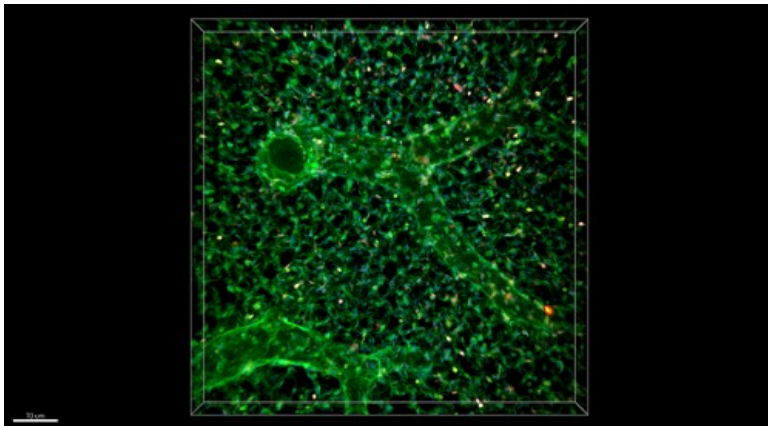
Product Data



C57BL/6 mouse frozen lymph node section was fixed with 4% paraformaldehyde (PFA) for 10 minutes at room temperature and blocked with 5% FBS plus 5% rat serum, 5% mouse serum, and 5% hamster serum for 1 hour at room temperature. Then the section was stained with 2.5 µg/ml of CD45 (clone 30-F11) Alexa Fluor® 594 (red), 2.5 µg/ml of CD3 (clone 145-2c11) Alexa Fluor® 647 (green) and 2.5 µg/ml of B220 (clone RA3-6B2) Brilliant Violet 421™ (blue) overnight at 4°C. The image was captured by 10X objective.



C57BL/6 mouse splenocytes were stained with CD45 (clone 30-F11) Alexa Fluor® 594 (filled histogram). The data was acquired by BD LSRFortessa™ cell analyzer equipped with Yellow-Green Laser (561 nm).



Paraformaldehyde-fixed (4%), 500 µm-thick mouse lung section was processed according to the Ce3DTM Tissue Clearing Kit protocol (cat. no. 427701). The section was costained with anti-mouse CD326 (Ep-CAM) Antibody (Clone G8.8) Alexa Fluor® 488 at 5 µg/mL (green), anti-mouse CD45 Antibody (clone 30-F11) Alexa Fluor® 594 at 5 µg/mL (red), and anti-mouse/human CD45R/B220 Antibody (Clone RA3-6B2) Alexa Fluor® 647 at 5 µg/mL (magenta) and counterstained with DAPI (blue). The section was then optically cleared and mounted in a sample chamber. The image was captured with a 20X objective using Zeiss 780 confocal microscope and processed by Imaris image analysis software.

[Watch the video.](#)

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