

Purified anti-human CD45 Antibody

Catalog# / Size	304001 / 25 µg 304002 / 100 µg
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

Verified Reactivity	Human
Reported Reactivity	Chimpanzee
Antibody Type	Monoclonal
Host Species	Mouse
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C.
Application	FC - Quality tested CyTOF®, IHC-P - Verified WB, IHC-F, ICC - Reported in the literature, not verified in house
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 ≤ 0.5 µg per 10 ⁶ cells in 100 µl volume or 100 µl of whole blood. For immunohistochemical staining on formalin-fixed paraffin-embedded tissue sections, a concentration range of 0.1 - 10 µg/ml is suggested, if the antibody is not available in a pre-diluted format. It is recommended that the reagent be titrated for optimal performance for each application.
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	1. Knapp W, <i>et al.</i> 1989. Leucocyte Typing IV. Oxford University Press. New York. 2. Kishihara K, <i>et al.</i> 1993. <i>Cell</i> 74:143. 3. Esser M, <i>et al.</i> 2001. <i>J. Virol.</i> 75:6173. (WB) 4. Yamada T, <i>et al.</i> 2002. <i>J. Biol. Chem.</i> 277:28830. 5. Nagano M, <i>et al.</i> 2007. <i>Blood</i> 110:151.
(PubMed link indicates BioLegend citation)	

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RRID

AB_314389 (BioLegend Cat. No. 304001)
 AB_314390 (BioLegend Cat. No. 304002)

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	<ol style="list-style-type: none">1. Thomas M. 1989. <i>Annu. Rev. Immunol.</i> 7:339.2. Trowbridge I, et al. 1994. <i>Annu. Rev. Immunol.</i> 12:85.
Gene ID	5788

Related Protocols

[Immunohistochemistry Protocol for Ultra Streptavidin Detection Kits USA](#)

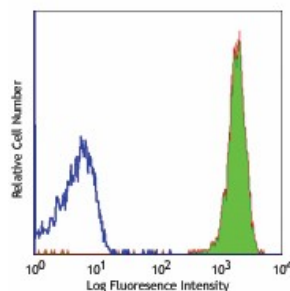
[Cell Surface Flow Cytometry Staining Protocol](#)

[Immunohistochemistry Protocol for Paraffin-Embedded Sections](#)

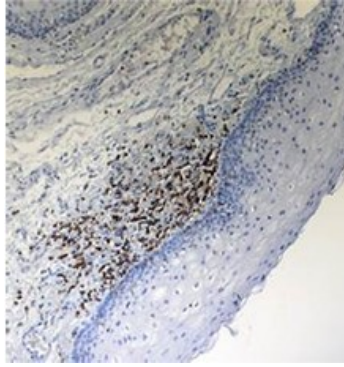
Other Formats

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 were stained with purified CD45 (clone HI30) (filled histogram) or purified mouse IgG1, κ isotype control (open histogram), followed by anti-mouse IgG FITC.



Preparation and staining of formalin fixed paraffin-embedded (FFPE) human tonsil was performed. After antigen retrieval, the sample was incubated with the purified monoclonal antibody (clone HI30) at 0.5 µg/mL for 20 minutes. The Ultra Streptavidin (USA) HRP Detection Kit (Multi-Species, DAB) was used according to protocol for chromogenic detection.

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