CD45 Antibody – Polyclonal

PRODUCT OVERVIEW

Product Name	CD45, Polyclonal Antibody
Full Product Name	Anti-Human CD45 DyLight 488 Conjugated Antibody
Product Gene Name	anti-CD45 antibody
Product Synonym Gene Name	PTPRC
Product Synonym Names	Receptor-type tyrosine-protein phosphatase C;Leukocyte common antigen;L-CA;T200;CD45;PTPRC;CD45
Clonality	Polyclonal
Isotype	IgG
Species Reactivity	Human There is no detectable cross-reactivity with other relevant proteins.
Form/Format	Liquid Each vial contains 50% glycerol, 0.9% NaCl, 0.2% Na2HPO4, 0.02% NaN3.
Purity/Purification	Immunogen Affinity Purified
Specificity	No cross reactivity with other proteins.
Preparation and Storage	Store at 2-8 degree C for one year. Protect from light. Do not freeze.
OMIM	126200
3D Structure	ModBase 3D Structure for P08575
Immunogen	E. coli-derived human CD45 recombinant protein (Position: R1113-S1304). Human CD45 shares 68% amino acid (aa) sequence identity with both mouse and rat CD45.
ISO Certification	Manufactured in an ISO 13485:2003 and EN ISO 13485:2012 Certified Laboratory.
Applications Tested/Suitable for anti-CD45 antibody	Immunofluorescence (IF), Flow Cytometry (FC/FACS)
Application Notes for anti-CD45 antibody	IF: 2ug/mL FC/FACS: 1-3mug/1x106 cells
Related Product Information for anti-CD45 antibody	Description: Rabbit IgG Polyclonal Anti-Human CD45 Antibody DyLight 488 Conjugated, IF and Flow Validated. Background: CD45(Cluster of Differentiation 45), also known as PTPRC, LCA or CD45R, is an enzyme that, in humans, is encoded by the PTPRC gene. CD45 is a member of the protein tyrosine phosphatase (PTP) family. CD45 is a major high molecular mass leukocyte cell surface molecule which is also an integral membrane protein tyrosine phosphatase. The cytogenetic location of CD45 is 1q31.3-q32.1. This gene is especially a prototype for transmembrane protein-tyrosine phosphatase (PTP). Targeted disruption of the CD45 gene leads to enhanced cytokine and interferon receptor-mediated activation of JAKs and STAT proteins. In vitro, CD45 directly dephosphorylates and binds to JAKs. Functionally, CD45 negatively regulates interleukin-3-mediated cellular proliferation, erythropoietin-dependent hematopoiesis, and antiviral responses in vitro and in vivo. CD45 has been best studied in T cells, where it determines T cell receptor signaling thresholds. CD45 is moved into or out of the immunological synapse (IS) membrane microdomain depending on the relative influence of interaction with the extracellular galectin lattice or the intracellular actin cytoskeleton. Galectin interaction can be finetuned by varying usage of the heavily Oglycosylated spliced regions and sialylation of Nlinked carbohydrates.

Product References and Citations for anti-CD45 antibody	1. Anderson, J.N. et al. (2004) FASEB J. 18:8. 2. Akao, Y., Utsumi, K. R., Naito, K., Ueda, R., Takahashi, T., Yamada, K. Chromosomal assignments of genes coding for human leukocyte common antigen, T-200, and lymphocyte function-associated antigen 1, LFA-1 beta subunit. Somat. Cell Molec. Genet. 13: 273-278, 1987. 3. Falahti, R. and D. Leitenberg (2008) J. Immunol. 181:6082.
Other Notes	Small volumes of anti-CD45 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for CD45 purchase	MBS1752905 is an antibody targeting CD45. Also known as Anti-Human CD45 DyLight 488 Conjugated Antibody. Reactive in Human There is no detectable cross-reactivity with other relevant proteins..

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for CD45. It may not necessarily be applicable to this product.

NCBI GI #	392307007
NCBI GeneID	5788
NCBI Accession #	NP_002829.3
UniProt Primary Accession #	P08575
UniProt Related Accession #	P08575
GenBank Nucleotide #	NP_002829.3
NCBI Official Full Name	receptor-type tyrosine-protein phosphatase C isoform 1
NCBI Official Synonym Full Names	protein tyrosine phosphatase receptor type C
NCBI Official Symbol	PTPRC
NCBI Official Synonym Symbols	LCA; LY5; B220; CD45; L-CA; T200; CD45R; GP180
UniProt Protein Name	Receptor-type tyrosine-protein phosphatase C
UniProt Synonym Protein Names	Leukocyte common antigen; L-CA; T200
Protein Family	Protein tyrosine phosphatase receptor type C-associated protein
UniProt Gene Name	PTPRC
UniProt Synonym Gene Names	CD45; L-CA
UniProt Entry Name	PTPRC_HUMAN
NCBI Protein Information	receptor-type tyrosine-protein phosphatase C
NCBI Summary for CD45	The protein encoded by this gene is a member of the protein tyrosine phosphatase (PTP) family. PTPs are known to be signaling molecules that regulate a variety of cellular processes including cell growth, differentiation, mitosis, and oncogenic transformation. This PTP contains an extracellular domain, a single transmembrane segment and two tandem intracytoplasmic catalytic domains, and thus is classified as a receptor type PTP. This PTP has been shown to be an essential regulator of T- and B-cell antigen receptor signaling. It functions through either direct interaction with components of the antigen receptor complexes, or by activating various Src family kinases required for the antigen receptor signaling. This PTP also suppresses JAK kinases, and thus functions as a regulator of cytokine receptor signaling. Alternatively spliced transcripts variants of this gene, which encode distinct isoforms, have been reported. [provided by RefSeq, Jun 2012]

UniProt Comments for CD45	CD45: a receptor type protein tyrosine phosphatase protein. Contains an extracellular domain, a single transmembrane segment and two tandem intracytoplasmic catalytic domains. The first PTPAse domain has enzymatic activity, while the second one seems to affect the substrate specificity of the first one. Specifically expressed in hematopoietic cells. An essential regulator of T- and B-cell antigen receptor signaling. Functions through either direct interaction with components of the antigen receptor complexes, or by activating various Src family kinases required for the antigen receptor signaling. Suppresses JAK kinases, and thus functions as a regulator of cytokine receptor signaling. Four alternatively spliced isoforms have been described. Protein type: Membrane protein, integral; Motility/polarity/chemotaxis; Receptor protein phosphatase, tyrosine; EC 3.1.3.48 Chromosomal Location of Human Ortholog: 1q31-q32 Cellular Component: focal adhesion; membrane; integral to plasma membrane; plasma membrane; lipid raft; external side of plasma membrane Molecular Function: protein binding; transmembrane receptor protein tyrosine phosphatase activity; protein tyrosine phosphatase activity; protein kinase binding Biological Process: B cell proliferation; axon guidance; substrate-bound cell migration, cell release from substrate; regulation of cell cycle; protein amino acid dephosphorylation; positive regulation of antigen receptor-mediated signaling pathway; T cell receptor signaling pathway; bone marrow development; B cell receptor signaling pathway; stem cell development; cell surface receptor linked signal transduction; dephosphorylation; release of sequestered calcium ion into cytosol; positive regulation of protein kinase activity; negative regulation of T cell mediated cytotoxicity; positive regulation of B cell proliferation; negative regulation of protein kinase activity; positive regulation of T cell proliferation; hemopoietic progenitor cell differentiation; negative regulation of cytokine and chemokine mediated signaling pathway; immunoglobulin biosynthetic process; defense response to virus; T cell differentiation Disease: Hepatitis C Virus, Susceptibility To; Severe Combined Immunodeficiency, Autosomal Recessive, T Cell-negative, B Cell-positive, Nk Cell-positive
Research Articles on CD45	**1.** Data identifies CD45 as a receptor for LukF-PV. The human-specific interaction between LukF-PV and CD45 provides a molecular explanation for resistance of hC5aR1KI mouse neutrophils to PVL and probably contributes to the lack of a PVL-mediated phenotype during infection in these mice.
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