10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

CD45 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1620a

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	P08575
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB00430
Calculated MW	147486
Antigen Region	1245-1275

Additional Information

Gene ID	5788
Other Names	Receptor-type tyrosine-protein phosphatase C, Leukocyte common antigen, L-CA, T200, CD45, PTPRC, CD45
Target/Specificity	This CD45 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1245-1275 amino acids from the C-terminal region of human CD45.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	CD45 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PTPRC (HGNC:9666)
Synonyms	CD45
Function	Protein tyrosine-protein phosphatase required for T-cell activation through

	the antigen receptor (PubMed:35767951). Acts as a positive regulator of T-cell coactivation upon binding to DPP4. The first PTPase domain has enzymatic activity, while the second one seems to affect the substrate specificity of the first one. Upon T-cell activation, recruits and dephosphorylates SKAP1 and FYN. Dephosphorylates LYN, and thereby modulates LYN activity (By similarity). Interacts with CLEC10A at antigen presenting cell-T cell contact; CLEC10A on immature dendritic cells recognizes Tn antigen- carrying PTPRC/CD45 receptor on effector T cells and modulates T cell activation threshold to limit autoreactivity.
Cellular Location	Cell membrane; Single-pass type I membrane protein. Membrane raft. Synapse. Note=Colocalized with DPP4 in membrane rafts.
Tissue Location	Isoform 1: Detected in thymocytes. Isoform 2: Detected in thymocytes. Isoform 3: Detected in thymocytes. Isoform 4: Not detected in thymocytes. Isoform 5: Detected in thymocytes. Isoform 6: Not detected in thymocytes. Isoform 7: Detected in thymocytes Isoform 8: Not detected in thymocytes.

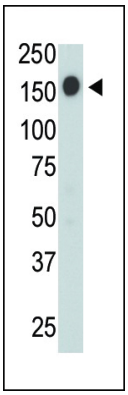
Background

CD45 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, mitotic cycle, and oncogenic transformation. This PTP contains an extracellular domain, a single transmembrane segment and two tandem intracytoplasmic catalytic domains, and thus belongs to receptor type PTP. The CD45 gene is specifically expressed in hematopoietic cells. 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.

References

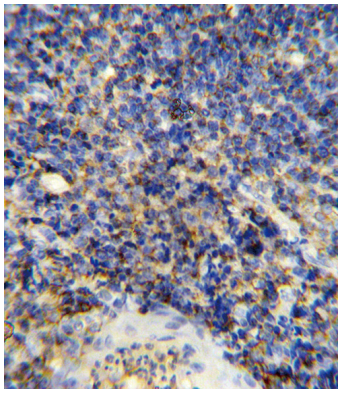
Stanton, T., et al., Proc. Natl. Acad. Sci. U.S.A. 100(10):5997-6002 (2003). Vogel, A., et al., Genes Immun. 4(1):79-81 (2003). Rachmilewitz, J., et al., J. Biol. Chem. 278(16):14059-14065 (2003). McCann, F.E., et al., J. Immunol. 170(6):2862-2870 (2003). Fernandis, A.Z., et al., J. Biol. Chem. 278(11):9536-9543 (2003).

Images

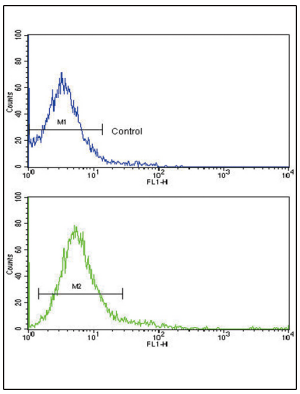


The anti-CD45 (C-term) Pab (Cat. #AP1620a) is used in Western blot to detect CD45 in jurkat cell lysate.

Formalin-fixed and paraffin-embedded human tonsil reacted with CD45 Antibody (C-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical



relevance has not been evaluated.



Flow cytometric analysis of jurkat cells using CD45 Antibody (C-term)(bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.