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CD45 Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO1247a

Specification

CD45 Antibody - Product Information

Application	**WB, IHC, E**
Primary Accession	P08575
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**IgG1**

Description
CD45, also known as TPRC(protein tyrosine phosphatase, receptor type, C). 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, 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. This 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. Four alternatively spliced transcripts variants of this gene, which encode distinct isoforms, have been reported.

Immunogen
Purified recombinant fragment of CD45 expressed in E. Coli.

Formulation
Ascitic fluid containing 0.03% sodium azide.

CD45 Antibody - Additional Information

Gene ID 5788

Other Names
Receptor-type tyrosine-protein phosphatase C, 3.1.3.48, Leukocyte common antigen, L-CA, T200, CD45, PTPRC, CD45

Dilution
WB~~1/500 - 1/2000
IHC~~1/200 - 1/1000
E~~N/A

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
CD45 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

CD45 Antibody - 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.

CD45 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

CD45 Antibody - Images

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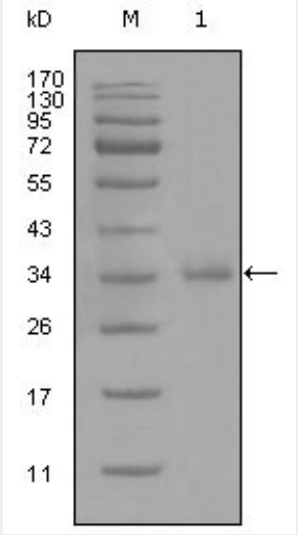

Figure 1: Western blot analysis using anti-CD45 monoclonal antibody against truncated CD45 recombinant protein (1).

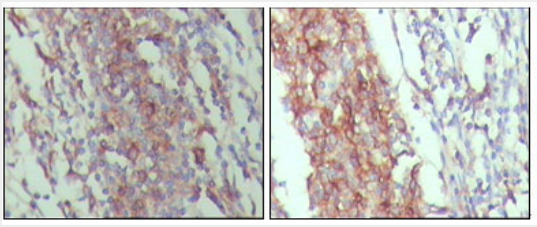

Figure 2: Immunohistochemical analysis of paraffin-embedded human lymph node tissue,showing membrane and cytoplasmic localization with DAB staining using CD45 mouse mAb.

CD45 Antibody - References

1. Biol Chem. 2008 May;389(5):561-8. 2. Immunology. 2008 Dec;125(4):558-69.