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PTPRC Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1887a

Product Information

Application	WB, IHC, E
Primary Accession	P08575
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	2C10C11
Isotype	IgG1
Calculated MW	147486
Description	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.
Immunogen	Purified recombinant fragment of human PTPRC (AA: 928-989) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

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~~1/10000
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	PTPRC Antibody 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

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. ; ; ;

References

1. Biochem Biophys Res Commun. 2012 Mar 23;419(4):708-14. 2. Blood. 2009 Jun 4;113(23):5905-10.

Images

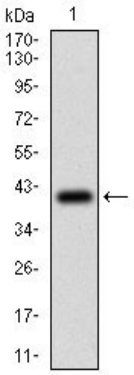

Figure 1: Western blot analysis using PTPRC mAb against human PTPRC (AA: 928-989) recombinant protein. (Expected MW is 33 kDa)

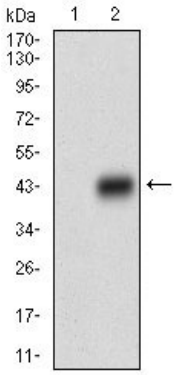

Figure 2: Western blot analysis using PTPRC mAb against HEK293 (1) and PTPRC (AA: 928-989)-hIgGFc transfected HEK293 (2) cell lysate.

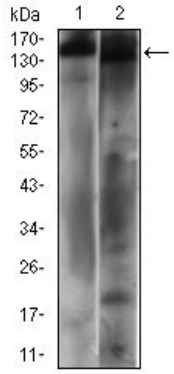

Figure 3: Western blot analysis using PTPRC mouse mAb against Hela (1) and A431 (2) cell lysate.

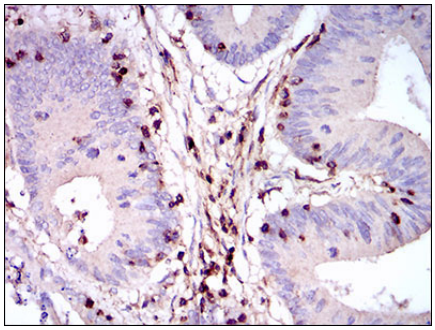

Figure 4: Immunohistochemical analysis of paraffin-embedded colon cancer tissues using PTPRC mouse mAb with DAB staining.