

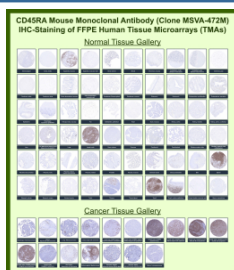
PTPRC Antibody / CD45RA [clone MSVA-472M] (V5979)

Catalog No.	Formulation	Size
V5979-100UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V5979-20UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug

Recombinant **MOUSE MONOCLONAL**

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Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Recombinant Mouse Monoclonal
Isotype	Mouse IgG2a, kappa
Clone Name	MSVA-472M
UniProt	P08575
Localization	Cell membrane, Membrane raft
Applications	Immunohistochemistry (FFPE) : 1:100-1:200
Limitations	This PTPRC/CD45RA antibody is available for research use only.



Immunohistochemistry analysis of PTPRC/CD45RA antibody (clone MSVA-472M) in human normal and cancer tissue microarrays. Representative FFPE human tissues demonstrate expected membranous staining of lymphoid cells in tonsil, spleen, thymus, and lymph node, with minimal staining in most non-hematopoietic tissues. In cancer specimens, strong membranous positivity is observed in CD45RA-positive lymphoid malignancies, while non-lymphoid tumors show little to no staining. Staining patterns are consistent with the known distribution of Receptor-type tyrosine-protein phosphatase C and align with publicly available expression data for PTPRC.

Description

PTPRC antibody recognizes Protein tyrosine phosphatase receptor type C, a transmembrane signaling regulator encoded by the PTPRC gene and widely known as Leukocyte common antigen. The CD45RA isoform represents one of several alternatively spliced extracellular variants of PTPRC generated through differential exon inclusion. PTPRC is expressed on nearly all nucleated hematopoietic cells and plays a fundamental role in immune receptor signaling. CD45RA antibody specifically detects the RA isoform, which is predominantly expressed on naive T lymphocytes and certain B cell subsets. This isoform is commonly used as a marker to distinguish antigen-inexperienced T cells from memory populations.

Structurally, PTPRC contains a heavily glycosylated extracellular domain, a single-pass transmembrane region, and two intracellular tyrosine phosphatase domains that regulate phosphorylation-dependent signaling. Alternative splicing of exons within the extracellular region generates multiple isoforms including CD45RA, CD45RB, and CD45RO. Inclusion of exon A defines the CD45RA variant. Through its intracellular phosphatase domains, PTPRC modulates the activation threshold of Src family kinases such as LCK and FYN, thereby influencing T cell receptor and B cell receptor signaling cascades.

Expression of CD45RA is typically highest on naive CD4+ and CD8+ T cells in peripheral blood and secondary lymphoid tissues including spleen and tonsil. Upon antigen encounter and differentiation into memory T cells, expression often shifts toward alternative isoforms such as CD45RO. This dynamic regulation of PTPRC isoform expression supports its widespread use in immunophenotyping and studies of lymphocyte maturation, immune reconstitution, and adaptive immune responses.

Alterations in PTPRC expression or splicing patterns have been associated with autoimmune disorders, immunodeficiency syndromes, and certain hematologic malignancies. The PTPRC Antibody clone MSVA-472M is a recombinant monoclonal antibody designed to target the CD45RA isoform in research applications. Detection of CD45RA supports investigation of leukocyte differentiation states, immune compartment composition, and lymphoid tissue architecture in normal and disease contexts.

Application Notes

1. Optimal dilution of the PTPRC/CD45RA antibody should be determined by the researcher.
2. This PTPRC/CD45RA antibody is recombinantly produced by expression in human HEK293 cells.
3. Manual Protocol: Freshly cut sections should be used (less than 10 days between cutting and staining). Heat-induced antigen retrieval for 5 minutes in an autoclave at 121°C in pH 7.8 Target Retrieval Solution buffer. Apply the antibody at a dilution of 1:150 at 37°C for 60 minutes. Visualization of bound antibody by the EnVision Kit (Dako, Agilent) according to the manufacturer's directions.

Immunogen

Stimulated human leukocytes were used as the immunogen for the PTPRC/CD45RA antibody.

Storage

PTPRC/CD45RA antibody with sodium azide - store at 2 to 8°C; antibody without sodium azide - store at -20 to -80°C.