

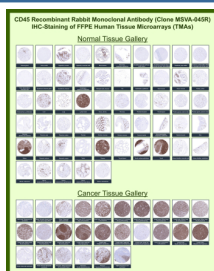
Leukocyte Common Antigen Antibody / CD45RA [clone MSVA-045R] (V5980)

Catalog No.	Formulation	Size
V5980-100UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V5980-20UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug

Recombinant **RABBIT MONOCLONAL**

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Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	MSVA-045R
UniProt	P08575
Localization	Cell membrane
Applications	Immunohistochemistry (FFPE) : 1:100-1:200
Limitations	This Leukocyte Common Antigen/CD45RA antibody is available for research use only.



Immunohistochemistry analysis of Leukocyte Common Antigen/CD45RA antibody in human tissue microarrays. Formalin-fixed, paraffin-embedded human normal and cancer tissue microarrays were stained with Leukocyte Common Antigen/CD45RA antibody (clone MSVA-045R). Robust membranous HRP-DAB brown staining is observed in lymphoid-rich tissues including tonsil, lymph node, spleen, and thymus, consistent with expression of CD45RA on subsets of hematopoietic cells, while most non-hematopoietic epithelial tissues show minimal to absent staining. In the cancer tissue gallery, strong staining is detected in multiple lymphoma subtypes, whereas the majority of non-hematologic malignancies demonstrate limited reactivity. Negative control sections processed with PBS instead of primary antibody show no specific staining. Heat-induced epitope retrieval was performed by boiling sections in 10mM Tris with 1mM EDTA, pH 9.0, followed by cooling prior to immunostaining.

Description

Leukocyte Common Antigen antibody, also known as CD45RA antibody, recognizes receptor-type tyrosine-protein phosphatase C encoded by the PTPRC gene. This transmembrane protein tyrosine phosphatase is broadly expressed on

hematopoietic cells and is commonly referred to as Leukocyte Common Antigen or LCA in diagnostic pathology. The CD45RA isoform arises through alternative splicing of exons within the extracellular domain and is preferentially expressed on naive T lymphocytes and certain subsets of B cells. Leukocyte Common Antigen antibody directed against CD45RA enables specific identification of this functionally distinct leukocyte population rather than detecting all CD45 isoforms indiscriminately.

CD45 functions as a critical regulator of antigen receptor signaling in both T cells and B cells. Through its intracellular phosphatase domains, it modulates Src family kinases such as LCK and FYN, thereby influencing thresholds for lymphocyte activation, proliferation, and differentiation. CD45RA expression is typically associated with naive T cells, while memory T cells often shift toward alternative isoforms such as CD45RO. As a result, CD45RA detection is widely used to distinguish immune cell maturation states in research models of immune development, infection, and autoimmunity.

Receptor-type tyrosine-protein phosphatase C is localized to the plasma membrane and contains a large glycosylated extracellular region, a single-pass transmembrane segment, and tandem cytoplasmic phosphatase domains. Differential glycosylation and isoform variation contribute to multiple apparent molecular weight forms observed in SDS-PAGE analysis. The CD45RA isoform contains the exon A-encoded sequence within its extracellular region, which provides structural diversity without altering the conserved intracellular catalytic domains.

In clinical and translational research, CD45RA expression patterns assist in immunophenotypic classification of lymphoid populations. Altered CD45 isoform distribution has been described in leukemia and lymphoma subtypes, as well as in studies of immune reconstitution and transplantation biology. A recombinant monoclonal Leukocyte Common Antigen antibody targeting CD45RA provides consistent batch-to-batch performance due to defined sequence expression rather than hybridoma variability. This antibody targets CD45RA for research applications involving characterization of leukocyte subsets in normal and disease contexts.

Application Notes

1. Optimal dilution of the Leukocyte Common Antigen/CD45RA antibody should be determined by the researcher.
2. This Leukocyte Common Antigen/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

A recombinant fragment (around amino acids 1-600) of human PTPRC protein (extracellular domain) was used as the immunogen for the Leukocyte Common Antigen/CD45RA antibody.

Storage

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

