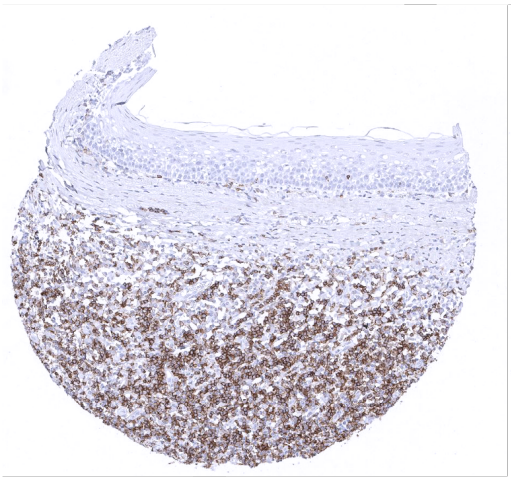
MS Validated Antibodies

MS Validated Antibodies GmbH
Bergstedter Chaussee 62a
22395 Hamburg, Germany
Tel: +49 (0) 40 89 72 55 81
E-Mail:info@ms-validatedantibodies.com
Website: ms-validatedantibodies.com

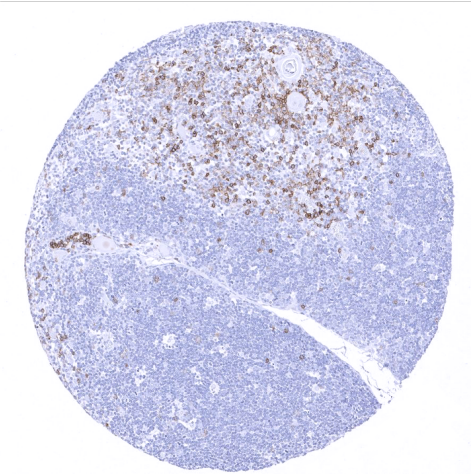
Anti-CD45RA Antibody
MSVA-472M / Mouse monoclonal

Human SwissProt	P08575
Human Gene Symbol	PTPRC
Synonyms	B220, CD45R, GP180, Leukocyte common antigen (LCA), Loc, Ly-5, Lyt-4, Protein tyrosine phosphatase receptor type C (PTPRC), Receptor-type tyrosine-protein phosphatase C, T200 glycoprotein
Specificity	CD45RA
Immunogen	Stimulated human leukocytes
Isotype	Mouse / IgG2a
Species Reactivity	Human

Localization	Cell Surface
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	200ug/ml of Ab Purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide.
Positive Control	Tonsil: A strong membranous CD45RA immunostaining should be seen on the majority of lymphocytes, while staining is absent in epithelial cells.
Negative Control	CD45RA immunostaining should be absent in epithelial tissues in for example tonsil, colon, and kidney.



The majority of lymphocytes of all types are CD45RA positive in the tonsil while the surface epithelium is CD45RA negative.



In the thymus, more than 99% of the cortical thymocytes are CD45RA negative. The rate of CD45RA positive cells is markedly higher in the medulla.

The vast majority of splenic lymphocytes of the white pulp of the spleen are CD45RA positive.

Biology

CD45 is a type I transmembrane protein that is present in various isoforms on all differentiated hematopoietic cells except erythrocytes and plasma cells. The gene is located at 1q31.3-q32.1 and contains 34 exons coding for an unusually large protein. The exons 4, 5, and 6 (corresponding to protein regions A, B, and C) are alternatively spliced to generate up to eight different protein products featuring combinations of zero, one, two, or all three exons. All these CD45 isoforms are essential regulators of T- and B-cell antigen receptor signaling. They function through either direct interaction with components of the antigen receptor complexes via their extracellular domain or by activating various Src family kinases required for the antigen receptor signaling via their cytoplasmic domain. Antibodies against specific CD45 isoforms are thus used to differentiate between important immune cell types. Naive T and B lymphocytes are positive for CD45RA, which includes only the A protein region. CD45RA immunostaining is seen in a variable fraction of T- and B-lymphocytes in normal tissues. The fraction of CD45RA positive lymphocytes is lowest in the cortex of the thymus (<1%) but is higher (>20%) in the thymic medulla. In lymph nodes, the white pulp of the spleen and in the tonsil, the vast majority of lymphocytes are CD45RA positive. In non-lymphatic organs, lymphoid follicles often show a high percentage of CD45RA positive lymphocytes, while the rate of CD45RA positivity is more variable among scattered lymphocytes in solid organs. A faint CD45RA immunostaining is also seen on the apical membrane of amnion cells. CD45RA is often expressed in most lymphoma subtypes. CD45RA positive cells are also seen in virtually every tumor type as a part of the tumor infiltrating lymphocytes.

Potential Research Applications

-Identification of naive T cells (CD45RA+) together with other markers.
-Naive T- (and B-) cells are of high importance for any type of immune response. Accordingly, CD45RA is part of most large panels for immune cell characterization by multicolor immunofluorescence.

Protocol Suggestions

Dilution: 1:150 ; pH 7,8 is optimal. Freshly cut sections should be used (less than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

Limitations

This antibody is available for **research use only** and is not approved for use in diagnostics.
Not for resale without express authorization.

Warranty

There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.

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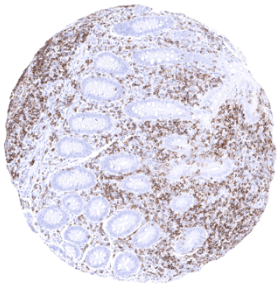
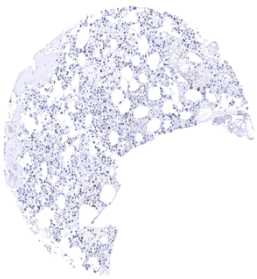
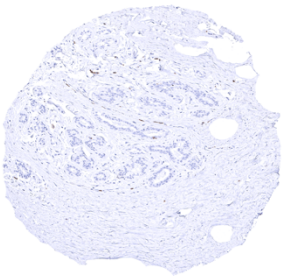


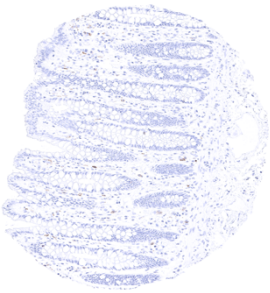
Appendix, mucosa



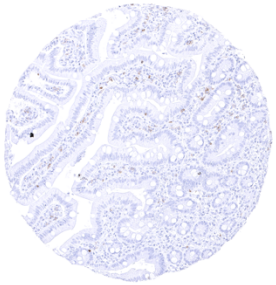
Bone marrow



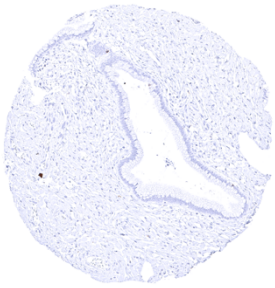
Breast



Colon descendens, mucosa

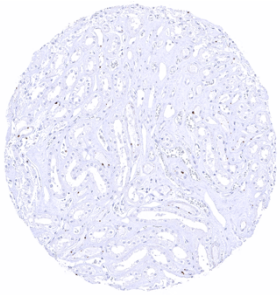


Duodenum, mucosa

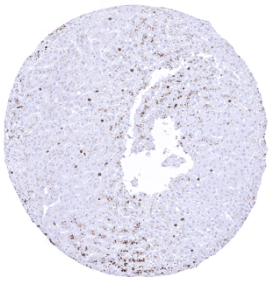


Endocervix

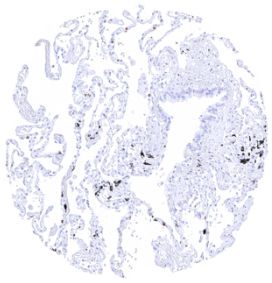
Fallopian tube, mucosa



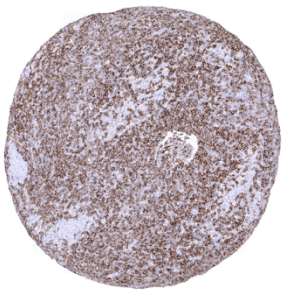
Kidney, medulla



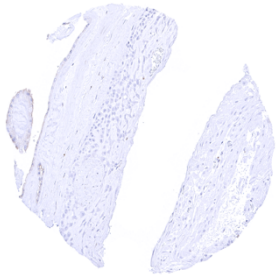
Liver - Most of the staining in this image is due to pigment



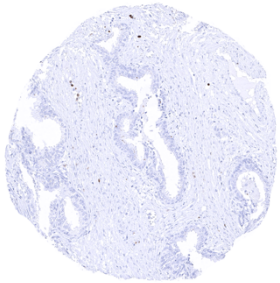
Lung



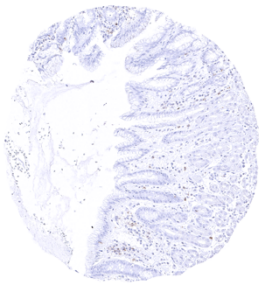
Lymph node - The majority of B- and T-cells stain CD45RA positive in lymph nodes



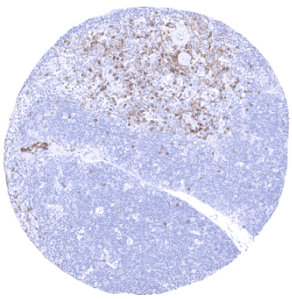
Placenta, mature, amnion and chorion - A very faint CD45RA immunostaining can be seen on the apical membrane of amnion cells



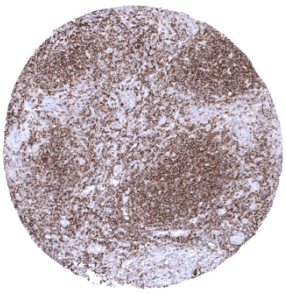
Prostate



Stomach, corpus



Thymus - in the thymus, more than 99% of the cortical thymocytes are CD45RA negative. The rate of CD45RA positive cells is markedly higher in the medulla



Tonsil - The majority of B- and T-lymphocytes stain CD45RA positive in lymph nodes