abcam

ab33945

Anti-CD45RC antibody [MRC OX-22]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	MRC OX-22
Purification technique	Affinity purification
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Rat
Dilution info	-
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Rat
Dilution info	1 µg/mL
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-Fr

Tested

Species	Human
Dilution info	1 mg/mL
Notes	This product gave a positive signal in HeLa cells fixed with 10% formaldehyde (10 min).

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information Ptprc

Function	Protein tyrosine-protein phosphatase required for T-cell activation through the antigen receptor. 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 (By similarity). 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.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	CD45RC also known as PTPRC isoform 14125 or CD45 plays an essential mechanical role as a protein tyrosine phosphatase. This approximately 180-240 kDa transmembrane protein modulates antigen receptor signaling in lymphocytes. CD45RC is expressed on various immune cells including T cells B cells and natural killer cells with expression levels varying between subsets of these cells. The

	CD45RC isoform arises from alternative splicing leading to different molecular forms that can affect immune cell signaling.
Biological function summary	CD45RC impacts cell signaling by regulating the threshold of activation in T and B cells. It is a member of the receptor-type protein tyrosine phosphatase family and functions to maintain immune homeostasis. CD45RC does not typically function alone; it interacts with other cell surface molecules to facilitate signal transduction. By dephosphorylating specific kinases it fine-tunes the immune response preventing overreaction and facilitating a rapid appropriate response to antigens.
Pathways	CD45RC modulates pathways involved in lymphocyte activation. One key pathway is the T-cell receptor signaling pathway where it controls the activity of Src family kinases which play a significant part in the early activation of T cells. Another important pathway is the B-cell receptor signaling pathway. CD45RC's action with the BCR complex ensures precise regulation of B cell responses. Its activity is closely related to proteins such as Lck and Fyn which are involved in the signaling cascades initiated by receptor engagement.
Associated diseases and disorders	CD45RC has implications in autoimmune diseases and certain leukemias. Its altered expression or function can lead to improper immune system regulation which may contribute to autoimmune conditions like rheumatoid arthritis where an overactive immune response targets the body’s own tissues. In some leukemias aberrant CD45RC expression can affect leukemia progression by modulating leukemia cell signaling and interactions within the bone marrow niche. This relationship of CD45RC with disease-related proteins like Lck highlights its potential as a therapeutic target in conditions of immune dysregulation.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

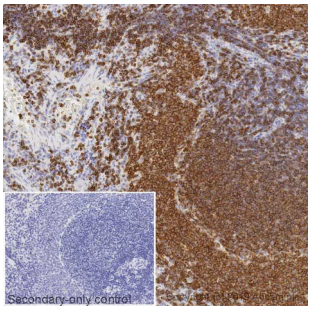
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

3 product images

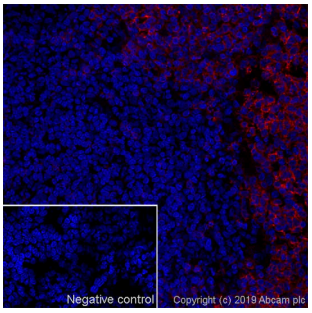


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD45RC antibody [MRC OX-22] (ab33945)

CD45RC Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-CD45RC antibody

IHC image of CD45RC staining in a section of formalin-fixed paraffin-embedded normal rat spleen performed on a Leica BOND™ system using the standard Protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20mins. The section was then incubated with ab33945, 1µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with hematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times



Immunohistochemistry (Frozen sections) - Anti-CD45RC antibody [MRC OX-22] (ab33945)

CD45RC Immunohistochemistry (Frozen sections) staining using mouse Anti-CD45RC antibody

IHC image of CD45RC staining in a section of frozen normal rat spleen*.
The section was fixed using 10% formaldehyde in 1XPBS for 10 minutes. No antigen retrieval step was performed prior to staining.

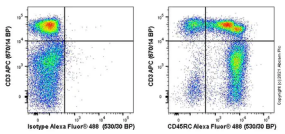
Non-specific protein-protein interactions were blocked using TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 3% (w/v) BSA for 1 hour at room temperature. The section was then incubated with ab33945 (1µg/ml dilution) in TBS containing 0.025% (v/v) Triton X-100 and 3% (w/v) BSA overnight at +4°C. The section was then incubated with ab150119 ((Goat polyclonal Secondary Antibody to Mouse IgG - H&L (Alexa Fluor® 647) (shown in red) and DAPI (staining nuclear DNA) (shown in blue) for 1 hour at room temperature. The section was then mounted using Fluoromount®.

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

The DAPI only control (no antibody) inset shows no autofluorescence, demonstrating that any Alexa Fluor® 647 signal is derived directly from bound ab33945.

For other IHC staining systems (automated and non-automated), customers should optimize variable parameters such as antigen retrieval conditions, antibody concentrations and incubation times.

*Tissue obtained from Charles River.



Flow Cytometry - Anti-CD45RC antibody [MRC OX-22] (ab33945)

CD45RC Flow Cytometry staining using mouse Anti-CD45RC antibody

Flow cytometry staining of Lewis rat splenocytes with ab33945 (right) or mouse IgG1κ (ab170190) isotype (left). Cells were incubated for 30 min on ice in 1x PBS containing 10 % rat serum to block FC receptors and non-specific protein-protein interaction followed by the antibody (ab33945) or mouse IgG1κ (ab170190) isotype ($1x10^6$ in 100 µl; at 0.2 µg/ml) for 30 min on ice.
The secondary antibody Goat anti-mouse IgG H&L (Alexa Fluor ® 488, pre-adsorbed) (ab150117) was used at 1/2000 dilution for 30 min on ice.

The cells were simultaneously stained with CD3 APC.

Acquisition of >30000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter. Events were gated on live single cells.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.