abcam

ab33933

Anti-CD45RA antibody [MRC OX-33]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.2 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-33
Purification technique	Affinity purification
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	This antibody was purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Rat
Dilution info	0.2 µg/mL

Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

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

IHC-Fr

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

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 (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. (Microbial infection) Acts as a receptor for human cytomegalovirus protein UL11 and mediates binding of UL11 to T-cells, leading to reduced induction of tyrosine phosphorylation of multiple signaling proteins upon T-cell receptor stimulation and impaired T-cell proliferation.

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

Spleen cells from immunised BALB/c mice were fused with cells of the NSO/U myeloma cell line. This clone has been described reacting with paraffin embedded material following PLP fixation (see Whiteland et al., 1995). It only labels B cells among thoracic duct lymphocytes, with little labelling in bone marrow and none on thymocytes (Barclay et al., 1987).

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	CD45RA also known as CD45RA antigen and T200 is an isoform of the CD45 protein family. It is a transmembrane protein tyrosine phosphatase with a molecular mass of approximately 220 kDa. CD45RA expression is abundant on naive T-cells and subsets of other immune cells like B cells. Researchers frequently use CD45RA antibodies including CD45RA-PE and CD45RA-FITC for flow cytometry to identify and study immune cell subsets.
Biological function summary	CD45RA plays a significant role in regulating T-cell receptor (TCR) signaling. By dephosphorylating specific phosphotyrosine residues on substrates CD45RA modulates signal transduction pathways important for T-cell activation and differentiation. This protein does not act alone but is part of a regulatory network that influences immune responses and cellular development through its interaction with other cell surface receptors and intracellular kinases.
Pathways	CD45RA modulation is integral to T-cell development and activation processes. It is an important participant in the T-cell receptor signaling pathway and the Jak-STAT signaling pathway. In these pathways CD45 interacts with proteins such as Lck and

	Fyn which are essential for propagating receptor-mediated signaling events in T-cells. Effective signal regulation through CD45RA is necessary to ensure appropriate immune responses.
Associated diseases and disorders	CD45RA has links to autoimmune diseases such as multiple sclerosis and rheumatoid arthritis. The aberrant expression or function of CD45RA on immune cells can lead to improper immune activation or suppression contributing to the pathology of these diseases. Crossover with other proteins such as CD45RO which is an isoform involved in memory T-cell function indicates a broader network of immune regulation where CD45RA maintains the balance between immune activation and tolerance.

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

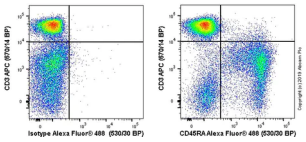
We do not recommend this combination. It is not covered by our product promise.

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.

2 product images



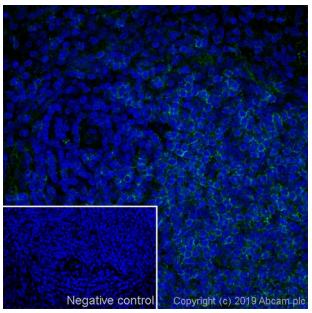
Flow Cytometry - Anti-CD45RA antibody [MRC OX-33] (ab33933)

CD45RA Flow Cytometry staining using mouse Anti-CD45RA antibody

Lewis rat splenocytes stained with ab33933 (right) or mouse IgG1κ (ab170190) isotype (left). Lewis rat splenocytes were incubated for 30 min on ice in 1x PBS / 10 % rat serum to block FC receptors and non-specific protein-protein interaction followed by the antibody (ab33933) or mouse IgG1κ isotype (ab170190) ($1x10^6$ in 100µl at 0.2 µg/ml) for 30 min on ice.

The secondary antibody Goat anti-mouse IgG H&L (Alexa Fluor ® 488, pre-adsorbed) (ab150177) was used at 1/2000 dilution for 30 min at 4°C. The cells were simultaneously stained with CD3 antibody.

Acquisition of >30,000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter. Events were gated on viable lymphocytes.



Immunohistochemistry (Frozen sections) - Anti-CD45RA antibody [MRC OX-33] (ab33933)

CD45RA Immunohistochemistry (Frozen sections) staining using mouse Anti-CD45RA antibody

IHC image of CD45RA 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 then blocked in TBS containing 0.025% (v/v) Triton X-100, 0.3M glycine and 1% (w/v) BSA for 1h at room temperature. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab33933 at 1µg/ml. The section was then incubated with ab150117 (Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preabsorbed, (Shown in green) 1/1000) for 1 hour at room temperature. DAPI was used to stain the cell nuclei (blue). The secondary-only control insert image is taken from an identical assay without primary antibody. The section was then mounted using Fluoromount®.

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

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

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