abcam

ab256137

Anti-CD45RA antibody [4KB5] - BSA and Azide free

Recombinant

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	4KB5
Purification technique	Affinity purification Protein A
Concentration	1.049 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1.017 µg/mL
Notes	-

IHC-P

Tested

Species	Human
Dilution info	0.239 µg/mL
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 conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab256137 is the carrier-free version of ab755.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility

- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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

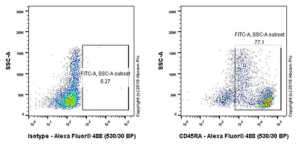
We do not recommend this combination. It is not covered by our product promise.

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



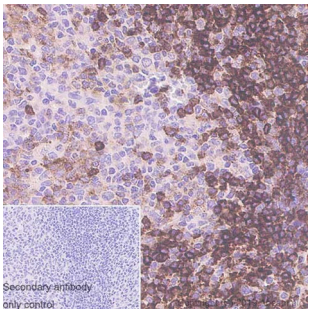
Flow Cytometry - Anti-CD45RA antibody [4KB5] - BSA and Azide free (ab256137)

CD45RA Flow Cytometry staining using mouse Anti-CD45RA antibody

Flow cytometric analysis of human peripheral blood mononuclear cell (PBMC) (right) labeling CD45RA with ab755 at 1.017µg/ml, compared with mouse monoclonal IgG Isotype Control (left). Goat anti-mouse IgG (Alexa Fluor® 488) (ab150113) at 1/2000 dilution was used as the secondary antibody.
Gated on viable cells.

This image was produced using the same antibody clone but in a different formulation ab755, PBS, sodium azide, glycerol and BSA.

This image was produced using the same antibody clone but in a different formulation containing PBS, sodium azide, glycerol and BSA (ab755).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD45RA antibody [4KB5] - BSA and Azide free (ab256137)

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling CD45RA with ab755 at 0.239µg/ml, followed by ready to use secondary. Positive staining on human tonsil tissue is observed. The section was incubated with ab755 for 10 mins at RT. The immunostaining staining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, followed by ready to use secondary.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.

This image was produced using the same antibody clone but in a different formulation containing PBS, sodium azide, glycerol and BSA (ab755).

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