abcam

ab283518

Anti-CD45R antibody [YTH 80.103] - BSA and Azide free

Recombinant

Key facts

Isotype	IgG2b
Host species	Rat
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing T Cell protein. The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	YTH 80.103
Purification technique	Affinity purification Protein A
Concentration	1.058 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-

Notes	-

Not recommended

Species	Mouse
Dilution info	-
Notes	-

WB

Not recommended

Species	Mouse, Human
Dilution info	-
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

ab283518 is the carrier-free version of ab283506.

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.

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	CD45R also known as Leukocyte Common Antigen or LCA is a protein that plays a significant role in immune cell function. It is an isoform of the larger protein CD45 which includes several alternatively spliced variants. CD45R is a transmembrane protein tyrosine phosphatase with a mass ranging from 180 to 220 kDa depending on its isoform. This protein is primarily expressed on hematopoietic cells including T cells B cells and other leukocytes. It functions mechanically by modulating signaling thresholds essential for lymphocyte development and activation.
Biological function summary	CD45R influences signaling pathways critical for immune response regulation. It does not form a complex by itself but interacts with other membrane receptors and cytoplasmic kinases to mediate signal transduction. The protein adjusts the activity of Src family kinases through its phosphatase activity impacting cell-cell communication and responsive behavior to antigens. CD45R is involved in maintaining a functional immune surveillance system particularly ensuring the adequate responsiveness of lymphocytes.
Pathways	CD45R's phosphatase activity is integral to the T-cell receptor (TCR) and B-cell receptor (BCR) signaling pathways. This activity regulates Lck and Fyn kinases

within these pathways contributing to proper lymphocyte activation and development. Any disruption in CD45R function can affect these pathways potentially impacting proteins like ZAP-70 and Syk which are essential for signal transduction downstream of the TCR and BCR respectively.

Associated diseases and disorders

CD45R has been implicated in conditions such as severe combined immunodeficiency (SCID) and autoimmune diseases like multiple sclerosis. Its malfunction or aberrant expression can cause improper immune system activation or suppression. In autoimmune contexts CD45R's interaction with other proteins like CTLA-4 may become dysregulated leading to immune system attacks on the body's tissues. Understanding these connections helps in developing therapeutic strategies targeting immune dysfunctions.

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

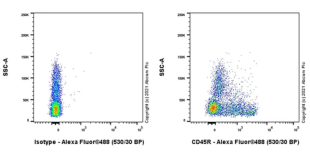
We do not recommend this combination. It is not covered by our product promise.

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.

1 product image



Flow Cytometry - Anti-CD45R antibody [YTH 80.103] - BSA and Azide free (ab283518)

CD45R Flow Cytometry staining using rat Anti-CD45R antibody

This data was developed using ab283506 the same antibody clone in a different buffer formulation.
Flow cytometric analysis of human PBMC cells labelling CD45R with ab283506 at 1/1000 dilution (0.1 µg)/ Right compared with a Rat monoclonal IgG / Left isotype control. Goat F(ab)2 Anti-Rat IgG Fc (Alexa Fluor® 488, ab150161) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells.

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