abcam

ab253061

violetFluor™ 450 Anti-CD45R antibody [RA3-6B2]

Anti-CD45R antibody [RA3-6B2] conjugated to violetFluor™ 450 - suitable for flow cytometry, and reacts with mouse samples. Clone [RA3-6B2] is a rat monoclonal antibody and one of the most commonly used clones for flow cytometry.

Design your panel with our interactive flow cytometry panel builder. Click here.

Key facts

Isotype	IgG2a
Host species	Rat
Conjugation	violetFluor™ 450
Excitation/Emission	Ex: 405nm, Em: 450nm
Storage buffer	pH: 7.2 Preservative: 0.09% Sodium azide Constituents: 0.87% Sodium chloride, 0.16% Sodium phosphate, 0.1% Gelatin
Form	Liquid
Clonality	Monoclonal
Clone number	RA3-6B2
Purification technique	Affinity purification
Light chain type	kappa
Concentration	0.2 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from tissue culture supernatant. The purified antibody was conjugated under optimal conditions, with unreacted dye removed from the preparation.

Reactivity data

Flow Cyt

Tested

Species	Mouse
Dilution info	-
Notes	Use at 0.5 µg per reaction.

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	Store in the dark

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

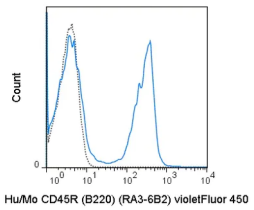
We do not recommend this combination. It is not covered by our product promise.

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 - violetFluor™ 450 Anti-CD45R antibody [RA3-6B2] (ab253061)

CD45R Flow Cytometry staining using rat Anti-CD45R antibody

Flow cytometric analysis of mouse C57Bl/6 splenocytes stained for CD45R using ab253061 at 0.5 µg per reaction (blue) or a rat IgG2a violetFluor™ 450 isotype control (black dashed line).

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