abcam

ab25386

Anti-CD45 antibody [I3/2.3]

Recombinant

Key facts

Isotype	IgG2b
Host species	Rat
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Clone number	I3/2.3
Purification technique	Ion exchange chromatography
Epitope	ab25386 recognizes a framework epitope present on all CD45 isoforms.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	ab18536 - Rat monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

IHC-P

Not recommended

Species	Mouse
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Mouse
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse
Dilution info	-
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. 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

This product has switched from a hybridoma to recombinant production method on 20th June 2025

REACH authorisation
Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.
It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

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.

Supplementary info

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

Activity summary	CD45 also known as Protein tyrosine phosphatase receptor type C (PTPRC) is a transmembrane glycoprotein with a molecular mass ranging between 180-240 kDa depending on its isoform. It is expressed on the surface of almost all hematopoietic cells except for mature erythrocytes and platelets. CD45 has a critical role in regulating antigen receptor signaling by modifying kinases involved in signal transduction and it is essential in lymphocyte development and activation. Because of its broad expression on immune cells CD45 is a valuable marker for differentiating various immune cell types in assays like flow cytometry and immunohistochemistry (IHC) often referred to as CD45 stain.
Biological function summary	CD45 acts by regulating tyrosine phosphorylation in the immune cell signaling context participating directly in signal transduction. It functions by dephosphorylating specific phosphotyrosine residues on various proteins modulating the signaling threshold required for lymphocyte activation. Although not known to be part of a protein complex CD45 itself shows isoform variation that associates with specific immune cell types impacting their function. Importantly CD45 interacts with multiple signaling molecules to affect cell growth and differentiation.
Pathways	Scientists associate CD45 with signaling pathways such as the T-cell receptor (TCR) and B-cell receptor (BCR) signaling. CD45 modulates the activity of Src family kinases important elements in these pathways making it essential for effective immune response and tolerance. Furthermore interactions between CD45 and proteins like Lck in T-cells or Lyn in B-cells highlight its pivotal role in executing its signaling functions.
Associated diseases and disorders	Scientists often link CD45 to immune-related conditions including autoimmunity and leukemia. In autoimmune diseases altered CD45 expression or activity can disrupt normal immune function contributing to pathogenesis. In leukemia CD45 expression levels can assist in disease classification and prognosis as it interacts with proteins involved in cell cycle regulation. The anti-CD45 antibodies can provide diagnostic and therapeutic avenues highlighting their utility in disease management.

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

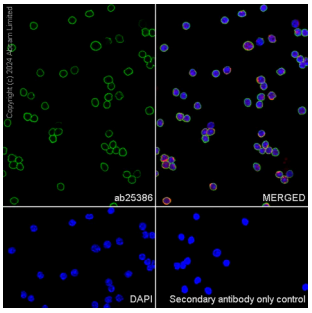
We do not recommend this combination. It is not covered by our product promise.

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.

5 product images



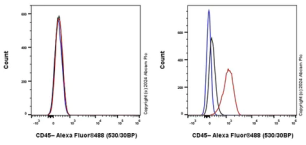
Immunocytochemistry/ Immunofluorescence - Anti-CD45 antibody [I3/2.3] (ab25386)

CD45 Immunocytochemistry/ Immunofluorescence staining of Mouse splenocytes using rat Anti-CD45 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Mouse splenocytes cells labelling CD45 with ab25386 at 1/100 dilution, followed by ab150161 Goat F(ab')2 Anti-Rat IgG Fc (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution(Green).

Confocal image showing cytoplasmic staining in mouse splenocytes (shown in green). The counterstain was observed in red. Nuclear DNA was labeled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab206369 Anti-beta Tubulin rabbit monoclonal antibody (Alexa Fluor® 594) was used to counter stain Tubulin at a 1/200 dilution (Red).

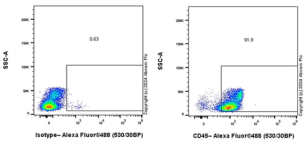


Flow Cytometry (Intracellular) - Anti-CD45 antibody [I3/2.3] (ab25386)

CD45 Flow Cytometry (Intracellular) staining using rat Anti-CD45 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized Neuro-2a (mouse neuroblastoma neuroblast, Left) / WEHI-231 (mouse B cell lymphoma B lymphocyte) cells labelling CD45 with ab25386 at 1/500 dilution (0.1 µg) / Right compared with a Rabbit monoclonal IgG (ab172730) / Black isotype control and Cell without incubation with primary antibody and secondary antibody / Blue.

Goat F(ab)2 Anti-Rat IgG Fc (Alexa Fluor® 488, ab150161) was used as a secondary antibody at a 1/5000 dilution.
Negative control: Neuro-2a.

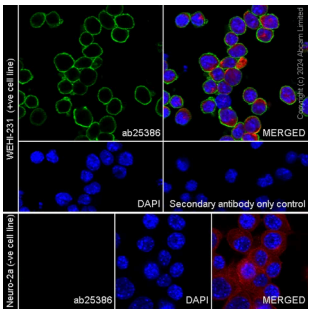


Flow Cytometry (Intracellular) - Anti-CD45 antibody [I3/2.3] (ab25386)

CD45 Flow Cytometry (Intracellular) staining of Mouse PBMC cells using rat Anti-CD45 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized Mouse PBMC cells labelling CD45 with ab25386 at 1/500 dilution (0.1 µg) / Right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control

Goat F(ab)2 Anti-Rat IgG Fc (Alexa Fluor® 488, ab150161) was used as a secondary antibody at a 1/5000 dilution.



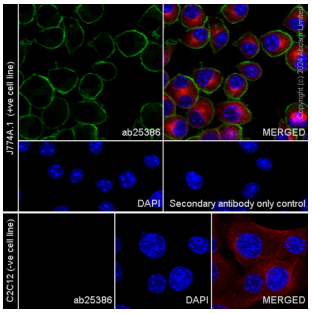
Immunocytochemistry/ Immunofluorescence - Anti-CD45 antibody [I3/2.3] (ab25386)

CD45 Immunocytochemistry/ Immunofluorescence staining using rat Anti-CD45 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized WEHI-231 (mouse B cell lymphoma B lymphocyte) cells labelling CD45 with ab25386 at 1/100 dilution, followed by ab150161 Goat F(ab')2 Anti-Rat IgG Fc (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution(Green).

Confocal image showing membranous staining in WEHI-231 cell line (shown in green), no staining was observed in Neuro-2a cell line. The counterstain was observed in red. Nuclear DNA was labeled with DAPI (shown in blue).
Negative control: Neuro-2a.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab206369 Anti-beta Tubulin rabbit monoclonal antibody (Alexa Fluor® 594) was used to counter stain Tubulin at a 1/200 dilution (Red).



Immunocytochemistry/ Immunofluorescence - Anti-CD45 antibody [I3/2.3] (ab25386)

CD45 Immunocytochemistry/ Immunofluorescence staining using rat Anti-CD45 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized J774A.1 (mouse reticulum cell sarcoma monocyte/macrophage) cells labelling CD45 with ab25386 at 1/100 dilution, followed by ab150161 Goat F(ab')2 Anti-Rat IgG Fc (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution(Green).

Confocal image showing membranous staining in J774A.1 cell line (shown in green), no staining was observed in C2C12 cell line. The counterstain was observed in red. Nuclear DNA was labeled with DAPI (shown in blue).
Negative control: C2C12.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab206369 Anti-beta Tubulin rabbit monoclonal antibody (Alexa Fluor® 594) was used to counter stain Tubulin at a 1/200 dilution (Red).

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