abcam

ab243869

Anti-CD45 antibody [BL-178-12C7]

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.8 - 8.6 Preservative: 0.09% Sodium azide Constituents: 98% Borate buffered saline, 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human PTPRC aa 1250 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link P08575
Clone number	BL-178-12C7
Purification notes	Recombinant antibody was purified from cell culture supernatant.

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	-

ICC

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	Use 20µl/mg lysate.

Flow Cyt

Tested

Species	Human
Dilution info	1 µL for 10^6 Cells
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
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	+4°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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.

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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

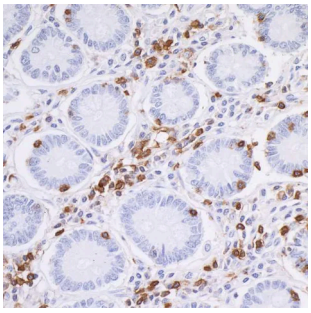
We do not recommend this combination. It is not covered by our product promise.

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.

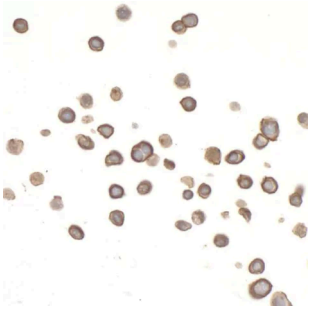
6 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD45 antibody [BL-178-12C7] (ab243869)

CD45 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD45 antibody

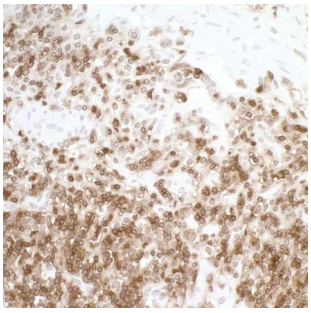
Formalin-fixed, paraffin-embedded human small intestine tissue stained for CD45 using ab243869 at 1/250 dilution in immunohistochemical analysis. A HRP-conjugated goat anti-rabbit IgG was used as the secondary. DAB staining.



Immunocytochemistry - Anti-CD45 antibody [BL-178-12C7] (ab243869)

CD45 Immunocytochemistry staining using rabbit Anti-CD45 antibody

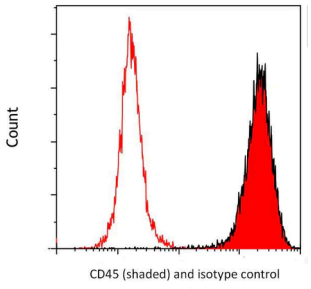
Formaldehyde-fixed Jurkat (human T cell leukemia cell line from peripheral blood) cells labeling CD45 using ab243869 at 1/250 dilution in ICC/IF analysis. A HRP-conjugated goat anti-rabbit IgG was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD45 antibody [BL-178-12C7] (ab243869)

CD45 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD45 antibody

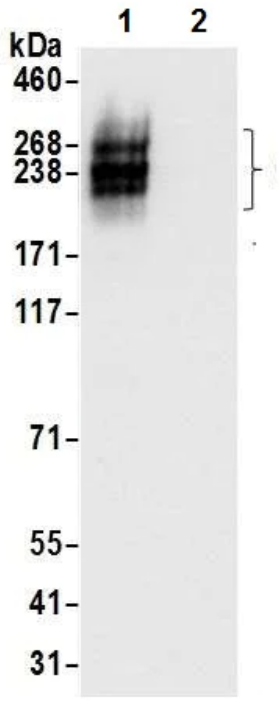
Formalin-fixed, paraffin-embedded human appendix tissue stained for CD45 using ab243869 at 1/250 dilution in immunohistochemical analysis. A HRP-conjugated goat anti-rabbit IgG was used as the secondary. DAB staining.



Flow Cytometry - Anti-CD45 antibody [BL-178-12C7] (ab243869)

CD45 Flow Cytometry staining using rabbit Anti-CD45 antibody

Flow cytometric analysis of 4% formaldehyde and permeabilized with 90% methanol Jurkat (Human T cell leukemia cell line from peripheral blood) cells labelling CD45 with ab243869 at 1µl/10^6 cells (Red shaded) compared with a Isotype control (unshaded). DyLight® 650-conjugated goat anti-rabbit IgG was used as the secondary antibody.



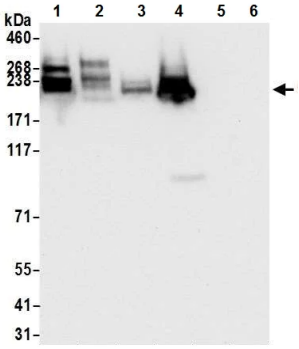
Immunoprecipitation - Anti-CD45 antibody [BL-178-12C7] (ab243869)

CD45 was immunoprecipitated from 1 mg Jurkat whole cell lysate with ab243869 at 20 µl per reaction Western blot was performed on the immunoprecipitate using ab243869 at 1/1000 dilution. Lane 1: ab243869 IP in Jurkat cell lysate.
Lane 2: Contol IgG in Jurkat cell lysate.

Detection: Chemiluminescence with an exposure time of 3 seconds.

All lanes:
Immunoprecipitation - Anti-CD45 antibody [BL-178-12C7] (ab243869)

Predicted band size: 147 kDa



Western blot - Anti-CD45 antibody [BL-178-12C7] (ab243869)

CD45 Western blot staining using rabbit Anti-CD45 antibody

Western blot analysis using ab243869 at 1/1000 dilution.
Lane 1: Jurkat whole cell lysate (50 µg).

Lane 2: MOLT-4 whole cell lysate (50 µg).

Lane3: K562 whole cell lysate (50 µg).

Lane 4: SR whole cell lysate (50 µg).

Lane 5: HeLa whole cell lysate (50 µg).

Lane 6: HEK-293T whole cell lysate (50 µg).

A HRP-conjugated goat anti-rabbit IgG antibody was used as the secondary. Detection: chemiluminescence with an exposure time of 3 seconds

All lanes:
Western blot - Anti-CD45 antibody [BL-178-12C7] (ab243869)

Predicted band size: 147 kDa

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