abcam

**ab154885**

# Anti-CD45 antibody

## Key facts

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|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7 Preservative: 0.025% Proclin 300 Constituents: PBS, 20% Glycerol (glycerin, glycerine), 1% BSA |
| **Form** | Liquid |
| **Clonality** | Polyclonal |
| **Immunogen** | Synthetic Peptide within Human PTPRC aa 900-1050. The exact immunogen used to generate this antibody is proprietary information. Database link P08575 |
| **Purification technique** | Affinity purification Immunogen |
| **Concentration** | 0.15 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## Flow Cyt

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/50 - 1/200 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/50 - 1/200 |

| | |
|---|---|
| **Notes** | - |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/100 - 1/1000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/100 - 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

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|---|---|
| **Shipped at conditions** | Blue Ice |
| **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 antibody provides variable results in WB.
Keep as concentrated solution.

## 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.

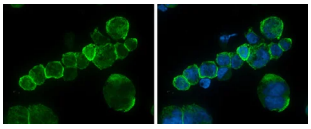
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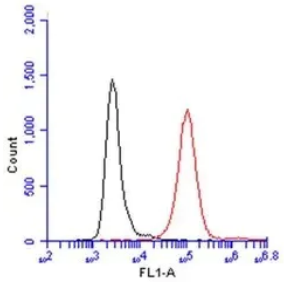
## 3 product images



### Immunocytochemistry/ Immunofluorescence - Anti-CD45 antibody (ab154885)

CD45 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD45 antibody

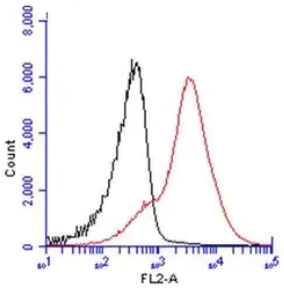
Immunofluorescence analysis of THP-1 cells labeling CD45 with ab154885 at 1/500 dilution. Hoechst 33342 (blue) staining is used (right panel).




### Flow Cytometry - Anti-CD45 antibody (ab154885)

CD45 Flow Cytometry staining of THP-1 cells using rabbit Anti-CD45 antibody

Flow cytometric analysis of THP-1 cells labelling CD45 protein with ab154885 at 1/50 dilution (Red) compared with unlabelled sample (Black).




# Flow Cytometry - Anti-CD45 antibody (ab154885)

CD45 Flow Cytometry staining of Mouse splenocytes using rabbit Anti-CD45 antibody

Flow cytometric analysis of Mouse splenocytes cell fixed in 4% paraformaldehyde at 4°C for 15 min labelling CD45 protein with ab154885 at 1/50 dilution (Red) compared with unlabelled sample (Black).
Acquisition of 20,000 events were collected for FACS analysis.

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