abcam

**ab24917**

# FITC Anti-CD45.1 antibody [A20]

Anti-CD45.1 antibody [A20] conjugated to FITC - suitable for flow cytometry, and reacts with mouse samples. Clone [A20] is a mouse monoclonal antibody and one of the most commonly used clones for flow cytometry.

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## Key facts

| | |
|---|---|
| **Isotype** | IgG2a |
| **Host species** | Mouse |
| **Conjugation** | FITC |
| **Excitation/Emission** | Ex: 495nm, Em: 519nm |
| **Storage buffer** | pH: 7.2 Preservative: 0.09% Sodium azide Constituents: 0.87% Sodium chloride, 0.14% Sodium dihydrogen phosphate, 0.1% Gelatin |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Clone number** | A20 |
| **Purification technique** | Affinity purification |
| **Specificity** | This antibody recognizes all mouse leukocytes expressing the CD45.1 allotype. |
| **Light chain type** | kappa |
| **Concentration** | 0.5 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## Flow Cyt

**Expected**

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| **Species** | Mouse |
| **Dilution info** | Use at an assay dependent concentration. |
| **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

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| **Shipped at conditions** | Blue Ice |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | +4°C |

## Notes

This antibody is useful as a marker for origin of donor and host cells.

## Supplementary info

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

**Activity summary** CD45.1 also known as Leukocyte Common Antigen (LCA) or Protein Tyrosine Phosphatase Receptor Type C (PTPRC) is a protein expressed on the surface of all nucleated hematopoietic cells. It has a molecular mass of approximately 180-220 kDa. This protein acts as a receptor-type protein tyrosine phosphatase. CD45.1 is an essential marker in the immune system particularly found on T cells B cells and

| | |
|---|---|
| | other white blood cells. The expression of CD45.1 is seen across leukocytes where it plays a significant role in cell signaling and antigen receptor signaling. |
| **Biological function summary** | CD45.1 influences the immune response by modulating signals through antigen receptors. It operates as a single-pass type I membrane protein and is not known to be part of a larger complex. This protein is important in the activation and regulation of T-cells and B-cells by fine-tuning the threshold of signals required for cell activation. The presence of CD45.1 affects multiple processes in adaptive immunity impacting lymphocyte development and their further activation in immune responses. |
| **Pathways** | CD45.1 is integral in lymphocyte activation pathways. It influences the T-cell receptor (TCR) and B-cell receptor (BCR) signaling pathways by dephosphorylating specific kinases like Lck and Fyn which are important in initiating TCR and BCR signaling cascades. Moreover CD45.1 interacts with other proteins such as CD3 and CD19 being essential in the regulation of immune response and maintaining proper signaling amplitudes to ensure effective immune function. |
| **Associated diseases and disorders** | CD45.1 is intricately linked to autoimmune diseases and leukemia. The protein's dysregulation can lead to improper immune signaling contributing to conditions such as systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA). In leukemia the altered expression of CD45.1 and related proteins such as CD20 often correlates with disease progression and treatment response. Understanding the roles of CD45.1 can facilitate the development of targeted therapies in these contexts. |

## 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**

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