abcam

ab25011

Biotin Anti-CD45.1 antibody [A20]

Anti-CD45.1 antibody [A20] conjugated to Biotin - suitable for flow cytometry, ICC/IF, IP, 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	Biotin
Storage buffer	pH: 7.4 Preservative: 0.1% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Clone number	A20
Purification technique	Affinity purification
Light chain type	kappa
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Expected

Species	Mouse

Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt

Expected

Species	Mouse
Dilution info	-
Notes	ab18454 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

ICC/IF

Expected

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

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

ab25011 recognizes all mouse leukocytes expressing the CD45.1 allotype. It 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

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

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