abcam

ab23620

PE Anti-CD22 antibody [RFB4]

Anti-CD22 antibody [RFB4] conjugated to PE - suitable for flow cytometry, IHC-Fr, and reacts with human samples. Clone [RFB4] is a mouse monoclonal antibody cited in 4 publications.

Key facts

Isotype	IgG1
Host species	Mouse
Conjugation	PE
Excitation/Emission	Ex: 480;565nm, Em: 578nm
Storage buffer	pH: 7.3 Preservative: 0.1% Sodium azide Constituents: 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing CD22 protein. The exact immunogen used to generate this antibody is proprietary information. Database link P20273
Clone number	RFB4
Specificity	CD22 is in principle a B lineage antigen, that is present in the cytoplasm of progenitor B-cells and on the membrane of the majority of mature peripheral B-lymphocytes. Furthermore, it is strongly expressed on Hairy Cell Leukemia cells and very weakly on some other leukemias. Antigen distribution:Peripheral blood lymphocytes 12±3% T-cells (E+) < 1% B-cells (E-, Ig+) 92±3% Monocytes (CD14+) < 1% Granulocytes < 1% Thymocytes < 1%
Concentration	0.2 - 1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purification by IEP (immunoelectrophoresis).

Reactivity data

Flow Cyt

Expected

Species	Human
Dilution info	-
Notes	Use maximum of 5ul for 10^6 cells. ab91357 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

IHC-Fr

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information CD22

Function

Most highly expressed siglec (sialic acid-binding immunoglobulin-like lectin) on B-cells that plays a role in various aspects of B-cell biology including differentiation, antigen presentation, and trafficking to bone marrow (PubMed:34330755, PubMed:8627166). Binds to alpha 2,6-linked sialic acid residues of surface molecules such as CD22 itself, CD45 and IgM in a cis configuration. Can also bind to ligands on other cells as an adhesion molecule in a trans configuration (PubMed:20172905). Acts as an inhibitory coreceptor on the surface of B-cells and inhibits B-cell receptor induced signaling, characterized by inhibition of the calcium mobilization and cellular activation. Mechanistically, the immunoreceptor tyrosine-based inhibitory motif domain is phosphorylated by the Src kinase LYN, which in turn leads to the recruitment of the protein tyrosine phosphatase 1/PTPN6, leading to the negative regulation of BCR signaling (PubMed:8627166). If

this negative signaling from is of sufficient strength, apoptosis of the B-cell can be induced (PubMed:20516366).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Supplementary info

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

Activity summary	CD22 also known as Siglec-2 or B-lymphocyte cell adhesion molecule (BL-CAM) is a transmembrane protein with a mass of around 140 kDa. It is selectively expressed on the surface of mature B cells and some immature B cells. This protein plays an important role in the immune system particularly in the regulation of B cell function. CD22 functions by modulating signal transduction processes through its cytoplasmic domain which contains immunoreceptor tyrosine-based inhibitory motifs (ITIMs).
Biological function summary	CD22 acts mainly as a negative regulator of B cell receptor (BCR) signaling. It is part of a complex that interacts with the BCR and other accessory molecules. CD22 helps maintain B cell tolerance by inhibiting overactive signaling and preventing autoimmune responses. By binding to sialic acid-containing glycans CD22 modulates interactions between B cells and other cells aiding in the maintenance of immune homeostasis.
Pathways	CD22 plays a critical role in the BCR signaling pathway and the regulation of phosphatidylinositol 3-kinase (PI3K) signaling. It works together with proteins like CD19 and SHP-1 that are key components of these pathways. By influencing these signaling cascades CD22 contributes to the modulation of B cell activation proliferation and apoptosis ensuring proper functioning of the immune response.
Associated diseases and disorders	CD22 is associated with autoimmune conditions and hematological malignancies such as hairy cell leukemia (HCL). Therapeutic approaches targeting CD22 such as anti-CD22 antibodies are being explored for treating these diseases. CD22's role in these conditions is connected with proteins involved in the autoimmune pathways or cancer development offering potential therapeutic targets for intervention.

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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