abcam

ab243840

Anti-CD22 antibody [OX97]

Key facts

Isotype	IgG1
Host species	Rat
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	OX97
Purification technique	Affinity purification Protein G
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Mouse
Dilution info	0.2 µg/mL
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	1 µg/mL
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:7533044, PubMed:9016707). 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. 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 (PubMed:9016707). 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. If this negative signaling from is of sufficient strength, apoptosis of the B-cell can be induced.

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

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

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.

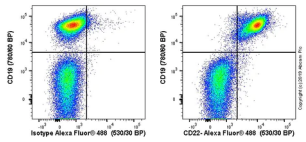
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2 product images

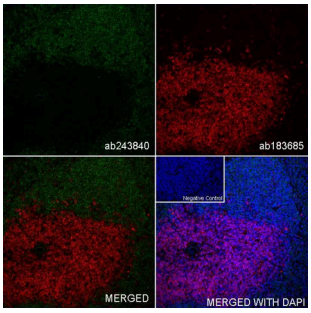


Flow Cytometry - Anti-CD22 antibody [OX97] (ab243840)

CD22 Flow Cytometry staining using rat Anti-CD22 antibody

C57BL/6 mouse splenocytes stained with ab243840 (right) or Rat IgG1κ (ab18407) isotype (left). C57BL/6 mouse splenocytes were incubated for 30 min on ice in 1x PBS / 10 % mouse serum to block FC receptors and non-specific protein-protein interaction followed by the antibody (ab243840) or Rat IgG1κ (ab18407) ($1x10^6$ in 100µl at 0.2 µg/ml) for 30 min on ice.
The secondary antibody Goat anti-rat IgG H&L (Alexa Fluor® 488, pre-adsorbed) (ab150165) was used at 1/2000 dilution for 30 min at 4°C.

Acquisition of >30,000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter. Events were gated on viable lymphocytes.



Immunohistochemistry (Frozen sections) - Anti-CD22 antibody [OX97] (ab243840)

CD22 Immunohistochemistry (Frozen sections) staining using rat Anti-CD22 antibody

IHC image of CD22 staining in a section of frozen normal mouse spleen.
The section was fixed using 10% formaldehyde in 1XPBS for 10 minutes. No antigen retrieval step was performed prior to staining. Non-specific protein-protein interactions were then blocked in TBS containing 0.025% (v/v) Triton X-100 0.3M glycine and 1% (w/v) BSA for 1h at room temperature. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab243840 at 1µg/ml and ab183685 (Rabbit monoclonal [EPR19514] to CD4) at 1/200 to show the distinct staining of B cells and T cells. The section was then incubated with ab150165 (Goat Anti-Rat IgG H&L (Alexa Fluor® 488) preabsorbed (Shown in green) 1/1000) and ab150080 (Goat Anti-Rabbit IgG H&L (Alexa Fluor®594) (Shown in red) 1/1000) for 1 hour at room temperature. The secondary-only control insert image is taken from an identical assay without primary antibody. DAPI was used to stain the cell nuclei (blue). The section was then mounted using Fluoromount®.

Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).

For IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antibody concentrations and incubation times.

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