abcam

ab198943

Alexa Fluor® 647 Anti-CD20 antibody [EP459Y]

Recombinant | RabMAb | Advanced Validation

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP459Y
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

mIHC

Tested

Species	Human

Dilution info	1/100
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100
Notes	-

ICC/IF

Expected

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

IHC-P

Expected

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

Target data

See full target information MS4A1

Function	B-lymphocyte-specific membrane protein that plays a role in the regulation of cellular calcium influx necessary for the development, differentiation, and activation of B-lymphocytes (PubMed:12920111, PubMed:3925015, PubMed:7684739). Functions as a store-operated calcium (SOC) channel component promoting calcium influx after activation by the B-cell receptor/BCR (PubMed:12920111, PubMed:18474602, PubMed:7684739).

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, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

Alexa Fluor® is a registered trademark of Molecular Probes, Inc, a Thermo Fisher Scientific Company. The Alexa Fluor® dye included in this product is provided under an intellectual property license from Life Technologies Corporation. As this product contains the Alexa Fluor® dye, the purchase of this product conveys to the buyer the non-transferable right to use the purchased product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). As this product contains the Alexa Fluor® dye the sale of this product is expressly conditioned on the buyer not using the product or its components, or any materials made using the product or its components, in any activity to generate revenue, which may include, but is not limited to use of the product or its components: in manufacturing; (ii) to provide a service, information, or data in return for payment (iii) for therapeutic, diagnostic or prophylactic purposes; or (iv) for resale, regardless of whether they are sold for use in research. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, 5781 Van Allen Way, Carlsbad, CA 92008 USA or outlicensing@thermofisher.com.

Supplementary info

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

Activity summary	CD20 also known as MS4A1 or L26 is a membrane-spanning 4-domains subfamily A member 1 protein. It is a non-glycosylated phosphoprotein with a molecular mass of approximately 33-37 kDa. Expressed extensively on the surface of B-cells CD20 plays an important role in B-cell activation and regulation. While CD20 is absent on early pro-B cells and plasma cells its presence increases as B-cells mature. Anti-CD20 antibodies such as 2H7 are commonly used in research and treatment to deplete B-cells due to the target's consistent expression in most stages of B-cell development.

Biological function summary	CD20 contributes significantly to calcium ion transport which is essential for the activation process of B-cells. Although CD20 does not belong to a larger protein complex its role centers around forming a calcium channel that allows a sustained influx of calcium into the B-cells. This influx is important for the signaling pathways that govern B-cell activation proliferation and differentiation impacting the immune response efficacy.
Pathways	CD20 is closely involved in the B-cell receptor (BCR) signaling pathway and the Fc gamma R-mediated phagocytosis pathway. These pathways play vital roles in adaptive immunity and immune response modulation. CD20's interaction with proteins like PI3K during BCR signaling enhances receptor-mediated cellular signals subsequently influencing downstream effectors involved in cell growth and survival of B-cells.
Associated diseases and disorders	CD20 is strongly linked to certain blood cancers and autoimmune diseases including non-Hodgkin's lymphoma and rheumatoid arthritis. These conditions often exploit aberrant B-cell activity or count. CD20's expression on malignant B-cells in non-Hodgkin's lymphoma makes it an effective target for monoclonal antibody therapies such as rituximab an anti-CD20 antibody. Additionally CD20-targeted therapies can help deplete pathogenic B-cells in rheumatoid arthritis highlighting the protein's relevance in disease treatment.

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

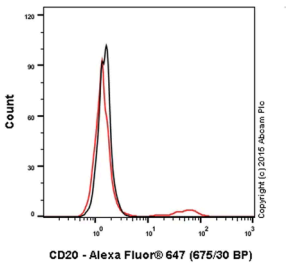
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

2 product images

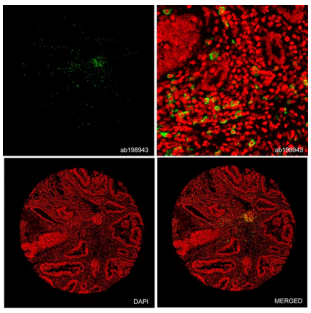


Flow Cytometry (Intracellular) - Alexa Fluor® 647 Anti-CD20 antibody [EP459Y] (ab198943)

CD20 Flow Cytometry (Intracellular) staining using rabbit Anti-CD20 antibody

Human peripheral blood lymphocytes stained with ab198943 (red line). Human whole blood was processed using a modified protocol based on Chow et al, 2005 (PMID: 16080188). In brief, human whole blood was fixed in 4% formaldehyde (methanol-free) for 10 min at 22°C. Red blood cells were then lyzed by the addition of Triton X-100 (final concentration - 0.1%) for 15 min at 37°C. For experimentation, cells were treated with 50% methanol (-20°C) for 15 min at 4°C. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab198943, 1/100 dilution) for 30 min at 4°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) Alexa Fluor® 647 (ab199093) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.
Acquisition of >30,000 total events were collected using a solid-state 25mW red diode laser (635 nm) and 675/30 bandpass filter.

Gating strategy - lymphocytes.



Multiplex immunohistochemistry - Alexa Fluor® 647 Anti-CD20 antibody [EP459Y] (ab198943)

Immunofluorescence analysis of human rectum adenocarcinoma labelled with ab198943. Image was acquired using Cell DIVE Multiplexed Imaging Solution (Leica Microsystems).

Formalin fixed paraffin embedded (FFPE) sections were incubated with ab198943 at 1/100 dilution, for 1h at room temperature. Nuclear DNA was labelled with DAPI (Red). Deparaffinization, antigen retrieval, biomarker labeling and imaging was performed following Cell DIVE recommended standard protocol. Cell DIVE automatically processed the image to perform autofluorescence removal, distortion correction, blank glass subtraction, flat-field correction, and stitching.

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