abcam

ab9183

Anti-CD59 antibody [MEM-43/5]

Anti-CD59 antibody [MEM-43/5] (ab9183) is a mouse monoclonal antibody detecting CD59 in **Western Blot, Flow Cytometry, IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse**.

- Over 10 publications
- Trusted since 2002

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.097% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing CD59 protein. The exact immunogen used to generate this antibody is proprietary information. Database link P13987
Clone number	MEM-43/5
Purification technique	Affinity purification Protein A
Specificity	CD59 antigen (human). MEM-43/5 reacts with well defined epitope (around L33) and does not compete with MEM-43 and many other CD59 antibodies
Epitope	The antibody MEM-43/5 reacts with well defined epitope around L33 (see Bodian et al)
Light chain type	unknown
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purity >95% by SDS-PAGE.

Reactivity data

IP

Expected

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

Flow Cyt

Tested

Species	Human
Dilution info	0.5-4 µg/mL
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse
Dilution info	-
Notes	-

WB

Expected

Species	Mouse
Dilution info	1-2 µg/mL
Notes	Use under non-reducing conditions.

Species	Human
Dilution info	1-2 µg/mL

Notes	Use under non-reducing conditions.

IHC-P

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

Target data

See full target information CD59

Function	Potent inhibitor of the complement membrane attack complex (MAC) action, which protects human cells from damage during complement activation (PubMed:11882685, PubMed:1698710, PubMed:2475111, PubMed:2475570, PubMed:2606909, PubMed:9053451). Acts by binding to the beta-haipins of C8

(C8A and C8B) components of the assembling MAC, forming an intermolecular beta-sheet that prevents incorporation of the multiple copies of C9 required for complete formation of the osmolytic pore (PubMed:11882685, PubMed:1698710, PubMed:36797260). The soluble form from urine retains its specific complement binding activity, but exhibits greatly reduced ability to inhibit complement membrane attack complex (MAC) assembly on cell membranes.

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

What is this antibody validated in?
Anti-CD59 antibody [MEM-43/5] (ab9183) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse samples.

What is the molecular weight of CD59?
Anti-CD59 [MEM-43/5] (ab9183) specifically detects a band for CD59 (UniProt: P13987) at a molecular weight of 14kDa.

Trusted by the scientific community
Anti-CD59 [MEM-43/5] (ab9183) was first used in a scientific publication in 2002 and has been cited over 10 times in peer-reviewed journals.

Supplementary info

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

Activity summary	CD59 also known as protectin is a protein with a molecular mass of approximately 18-25 kDa. It is widely expressed on the surface of many human cells including red blood cells and various types of leukocytes. CD59 serves as an inhibitor of the

	complement membrane attack complex (MAC) preventing cell lysis caused by terminal complement proteins. Through this mechanism it regulates complement activation and maintains cell integrity by halting the formation of MAC.
Biological function summary	One important feature of CD59 is its role as a glycosylphosphatidylinositol (GPI)-anchored protein involved in safeguarding cells from complement-mediated damage. It does not exist within a larger complex but functions at the cell surface to inhibit the assembly of complement components C5b-9 which form the MAC. This ability to inhibit MAC is essential in maintaining self-tissue from unintended damage during immune responses.
Pathways	CD59 participates in the regulation of the complement cascade specifically within the terminal pathway. The complement system serves as a bridge between innate and adaptive immunity contributing to processes like opsonization and cell lysis. CD59's inhibitory action directly impacts pathways that utilize terminal components such as C5b. Effective CD59 function prevents excessive complement activation ensuring that an immune response does not damage host tissues. It links closely with other complement regulatory proteins like CD55 which also mitigate complement cascade activation.
Associated diseases and disorders	Deficiencies or malfunctions in CD59 have notable implications. Paroxysmal nocturnal hemoglobinuria (PNH) is a disorder where lack of CD59 expression on blood cells leads to their increased destruction due to unregulated complement activity. Furthermore CD59's dysfunction or inadequacy also associates with atypical hemolytic uremic syndrome (aHUS) which involves mutant complement regulatory proteins causing overactivation of the complement system. These associations highlight the importance of CD59 in both maintaining cellular health and preventing pathophysiological conditions related to complement overactivity.

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

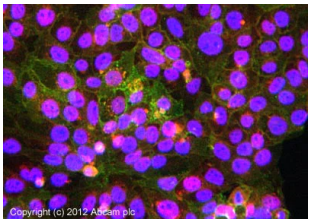
We do not recommend this combination. It is not covered by our product promise.

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.

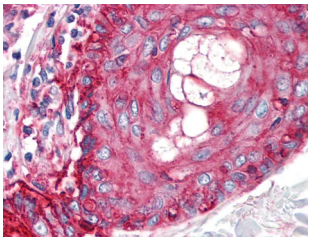
5 product images



Immunocytochemistry/ Immunofluorescence - Anti-CD59 antibody [MEM-43/5] (ab9183)

CD59 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-CD59 antibody

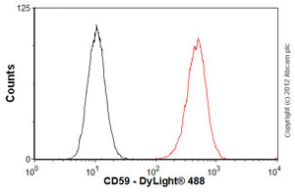
ICC/IF image of ab9183 stained Jeg3 cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab9183, 5µg/ml) overnight at +4°C. The secondary antibody (green) was ab96879, DyLight® 488 goat anti-mouse IgG (H+L) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD59 antibody [MEM-43/5] (ab9183)

CD59 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-CD59 antibody

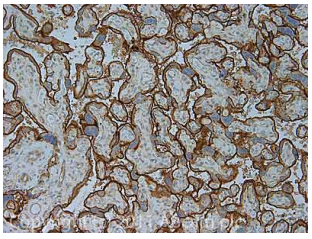
Immunohistochemistry paraffin embedded sections staining of human skin tissue using ab9183.



Flow Cytometry - Anti-CD59 antibody [MEM-43/5] (ab9183)

CD59 Flow Cytometry staining using mouse Anti-CD59 antibody

Overlay histogram showing Jurkat cells stained with ab9183 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. 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 (ab9183, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in Jurkat cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.

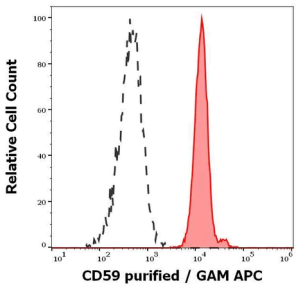


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD59 antibody [MEM-43/5] (ab9183)

IHC image of ab9183 staining CD59 in Human normal placenta formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with EDTA (pH9, epitope retrieval solution 2) for 20 mins. The section was then incubated with ab9183, 5µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen.

The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Flow Cytometry - Anti-CD59 antibody [MEM-43/5] (ab9183)

Flow cytometric analysis of Human Peripheral Blood cells labelling CD59 with ab9183 at 0.6 ug/ml showing separation of human neutrophil granulocytes (red-filled) from human CD59 negative blood debris (black-dashed).

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