abcam

ab33165

PE Anti-CD59 antibody [YTH53.1]

Anti-CD59 antibody [YTH53.1] conjugated to PE - suitable for flow cytometry, and reacts with human samples. Clone [YTH53.1] is a rat monoclonal antibody.

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Key facts

Isotype	IgG2b
Host species	Rat
Conjugation	PE
Excitation/Emission	Ex: 480;565nm, Em: 578nm
Storage buffer	pH: 7.2 Preservative: 0.09% Sodium azide Constituents: PBS, 1% BSA
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	YTH53.1
Purification notes	ab33165 was purified by ion exchange chromatography.

Reactivity data

Flow Cyt

Expected

Species	Human
Dilution info	-

Notes	We do not recommend using this antibody in lysed whole blood techniques due to inhibition of staining caused by CD59 expression on erythrocytes.

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 conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

This clone enhances antibody mediated lysis by homologous complement and reacts with GPI linked antigen of 18-20kD size which is broadly expressed on human leucocytes and erythrocytes.

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.

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