abcam

ab79559

Anti-CD81 antibody [M38]

Anti-CD81 antibody [M38] (ab79559) is a mouse monoclonal antibody detecting CD81 in **Western Blot, Flow Cytometry, IHC-P**. Suitable for **Human**.

- KO validated for confirmed specificity
- Over 140 publications
- Trusted since 2009

KO Validated

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.097% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing CD81 protein. The exact immunogen used to generate this antibody is proprietary information. Database link P60033
Clone number	M38
Purification technique	Affinity purification Protein A
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab79559 is purified from hybridoma culture supernatant by protein A affinity chromatography. Purity is > 95% (by SDS-PAGE).

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	5 µg/mL
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Flow Cyt

Tested

Species	Human
Dilution info	1-4 µg/mL
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	2 µg/mL
Notes	-

Target data

See full target information CD81

Function

Structural component of specialized membrane microdomains known as tetraspanin-enriched microdomains (TERMs), which act as platforms for receptor clustering and signaling. Essential for trafficking and compartmentalization of CD19 receptor on the surface of activated B cells (PubMed:16449649, PubMed:20237408, PubMed:27881302). Upon initial encounter with microbial pathogens, enables the assembly of CD19-CR2/CD21 and B cell receptor (BCR) complexes at signaling TERMs, lowering the threshold dose of antigen required to trigger B cell clonal expansion and antibody production (PubMed:15161911, PubMed:20237408). In T cells, facilitates the localization of CD247/CD3 zeta at antigen-induced synapses with B cells, providing for costimulation and polarization toward T helper type 2 phenotype (PubMed:22307619, PubMed:23858057, PubMed:8766544). Present in MHC class II compartments, may also play a role in antigen presentation (PubMed:8409388, PubMed:8766544). Can act both as positive and negative regulator of homotypic or heterotypic cell-cell

fusion processes. Positively regulates sperm-egg fusion and may be involved in acrosome reaction (By similarity). In myoblasts, associates with CD9 and PTGFRN and inhibits myotube fusion during muscle regeneration (By similarity). In macrophages, associates with CD9 and beta-1 and beta-2 integrins, and prevents macrophage fusion into multinucleated giant cells specialized in ingesting complement-opsonized large particles (PubMed:12796480). Also prevents the fusion of mononuclear cell progenitors into osteoclasts in charge of bone resorption (By similarity). May regulate the compartmentalization of enzymatic activities. In T cells, defines the subcellular localization of dNTPase SAMHD1 and permits its degradation by the proteasome, thereby controlling intracellular dNTP levels (PubMed:28871089). Also involved in cell adhesion and motility. Positively regulates integrin-mediated adhesion of macrophages, particularly relevant for the inflammatory response in the lung (By similarity). (Microbial infection) Acts as a receptor for hepatitis C virus (HCV) in hepatocytes. Association with CLDN1 and the CLDN1-CD81 receptor complex is essential for HCV entry into host cell. (Microbial infection) Involved in SAMHD1-dependent restriction of HIV-1 replication. May support early replication of both R5- and X4-tropic HIV-1 viruses in T cells, likely via proteasome-dependent degradation of SAMHD1. (Microbial infection) Specifically required for Plasmodium falciparum infectivity of hepatocytes, controlling sporozoite entry into hepatocytes via the parasitophorous vacuole and subsequent parasite differentiation to exoerythrocytic forms.

Storage

Shipped at conditions	Blue Ice
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

Product Specifications

Anti-CD81 antibody [M38] (ab79559) is a mouse monoclonal antibody and is validated for use in Flow Cyt, IHC-P, WB in human samples.
Anti-CD81 antibody [M38] (ab79559) specifically detects CD81 (UniProt ID: P60033; Molecular weight: 26kDa) and is sold in 100 µg selling sizes.

Quality and Validation

Abcam's high quality validation processes ensure Anti-CD81 antibody [M38] (ab79559) has high sensitivity and specificity.

The specificity of Anti-CD81 antibody [M38] (ab79559) has been confirmed by testing in knockout samples. Anti-CD81 antibody [M38] (ab79559) has been cited over 142 times in peer reviewed journals and is trusted by the scientific community.

Related Products

Antibody clone M38 is also available pre-conjugated to a variety of labels for your convenience - APC/Cy7®, APC, Biotin, FITC, HRP (ab200565, ab233259, ab239238, ab239256).

Target Information

CD81 or TAPA1 is a tetraspanin protein that plays a significant role in oncology, particularly in the context of cancer cell proliferation and metastasis. CD81 or TAPA1 is highly expressed in several types of cancer cells and it is involved in various cellular processes, including cell adhesion, migration, and signal transduction. CD81 also contributes to the tumor microenvironment by facilitating interactions between cancer cells and their surroundings.

Supplementary info

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

Activity summary	CD81 also known as TAPA-1 or 26 kDa protein is a member of the tetraspanin family featuring four transmembrane domains. The molecular weight of CD81 is approximately 26-28 kDa. This protein exhibits expression in numerous cell types such as leukocytes endothelial cells and epithelial tissues. CD81 plays a mechanical role by facilitating membrane protein interactions and contributing to cellular processes like adhesion and morphogenesis. Researchers have identified specific isoforms like M38 and labels like 1D6 CHAN in studies involving this target often analyzing CD81 through techniques like Western blot to determine expression levels and molecular weight.
Biological function summary	CD81 interacts with other tetraspanins and forms complexes within the membrane to regulate cellular signaling trafficking and adhesion. It participates in the assembly of larger tetraspanin-enriched microdomains which are important for efficient signaling and functional variety. These complexes modulate cell morphology proliferation and development influencing immune responses and pathogen entry to cells. The presence of CD81 in diverse tissues implies its involvement in a wide range of cellular processes forming essential complexes with proteins like integrins that further engage in tissue repair and immunological defense.
Pathways	CD81 plays significant roles in the immune system and viral entry pathways. It interacts with other proteins like CD9 and CD19 within the immune response pathways regulating lymphocyte activation and differentiation. CD81 is notably a coreceptor in the hepatitis C virus (HCV) entry pathway facilitating viral attachment and fusion into host cells. These interactions illustrate CD81's involvement in modulation of immune cell responses and influence on pathogen infection processes integrating into the complex cellular pathways important for maintaining homeostasis and response to external stimuli.
Associated diseases and disorders	CD81 has connections to hepatitis C virus (HCV) infections and immunological disorders such as systemic lupus erythematosus (SLE). During HCV infection CD81

serves as an important entry point for the virus interacting with proteins like claudin-1 and scavenger receptor class B type I (SR-BI) enabling viral entry and replication within liver cells. In SLE alterations in CD81 expression can impact autoantibody production and lymphocyte behavior contributing to the disease's pathology. Understanding CD81's role in these diseases provides insight into therapeutic targets and potential interventions for managing infections and autoimmune responses.

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

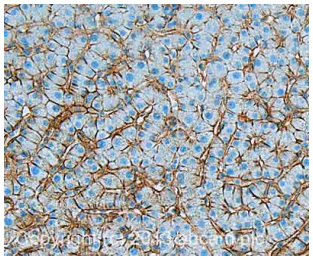
We do not recommend this combination. It is not covered by our product promise.

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.

6 product images

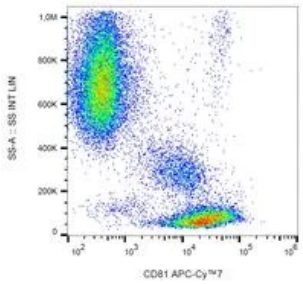


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD81 antibody [M38] (ab79559)

CD81 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-CD81 antibody

IHC image of CD81 staining in Human normal liver 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 sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab79559, 5 µg/mL, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used

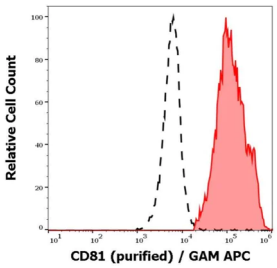
as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Flow Cytometry - Anti-CD81 antibody [M38] (ab79559)

CD81 Flow Cytometry staining using mouse Anti-CD81 antibody

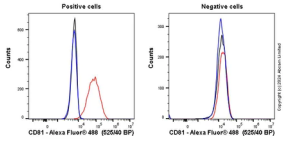
Flow cytometry analysis using human peripheral blood cells with ab79559 at 4 µg/ml.



Flow Cytometry - Anti-CD81 antibody [M38] (ab79559)

CD81 Flow Cytometry staining using mouse Anti-CD81 antibody

Separation of human lymphocytes (red-filled) from neutrophil granulocytes (black-dashed) in flow cytometry analysis of human peripheral whole blood stained using ab79559 at 4 µg/ml.



Flow Cytometry - Anti-CD81 antibody [M38] (ab79559)

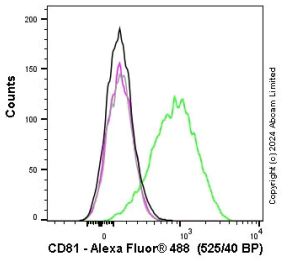
CD81 Flow Cytometry staining using mouse Anti-CD81 antibody

Flow cytometry overlay histogram showing left Jurkat positive cells and right negative HepG2 stained with ab79559 (red line). The cells were incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interactionfollowed by the antibody (ab79559) (1x 10^6 in 100µl at 0.2 µg/ml (1/5000)) for 30min on ice.

The secondary antibody Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 for 30min on ice

Isotype control antibody (black line) was Mouse IgG1, kappa monoclonal [15-6E10A7] - Isotype Control used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.



Flow Cytometry - Anti-CD81 antibody [M38] (ab79559)

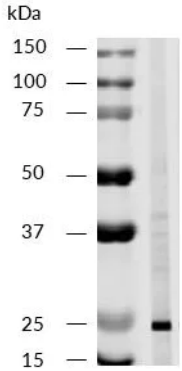
CD81 Flow Cytometry staining using mouse Anti-CD81 antibody

Flow cytometry overlay histogram showing wild-type HAP1 (green line) and CD81 knockout HAP1 stained with ab79559 (magenta line). The cells were incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab79559) (1x 10^6 in 100µl at 0.2 µg/ml (1/5000)) for 30min on ice.

The secondary antibody Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 for 30min on ice

Isotype control antibody Mouse IgG1, kappa monoclonal [15-6E10A7] - Isotype Control was used at the same concentration and conditions as the primary antibody (wild-type HAP1 - black line, CD81 knockout HAP1 - grey line). Unlabelled sample was also used as a control (this line is not shown for the purpose of simplicity).

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.



Western blot - Anti-CD81 antibody [M38] (ab79559)

CD81 Western blot staining of Jurkat (human T cell leukemia cell line from peripheral blood) whole cell lysate using mouse Anti-CD81 antibody

All lanes:
Western blot - Anti-CD81 antibody [M38] (ab79559) at 2 µg/mL

All lanes:
Jurkat (human T cell leukemia cell line from peripheral blood) whole cell lysate

Secondary

All lanes:
IRDye800-conjugated Anti-Mouse Secondary Antibody

Performed under non-reducing conditions.

Predicted band size: 25 kDa

Observed band size: 25 kDa

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