abcam

ab233692

Anti-CD81 antibody [EPR21916] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR21916
Purification technique	Affinity purification Protein A
Concentration	1.016 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-

Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
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	+4°C
Storage information	Do Not Freeze

Notes

ab233692 is the carrier-free version of ab219209.

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.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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

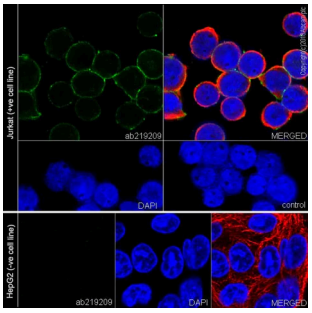
We do not recommend this combination. It is not covered by our product promise.

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.

5 product images



Immunocytochemistry/ Immunofluorescence - Anti-CD81 antibody [EPR21916] - BSA and Azide free (ab233692)

CD81 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD81 antibody

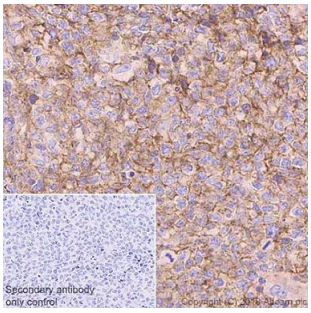
Immunofluorescent analysis of 100% methanol-fixed Jurkat (human T cell leukemia cell line from peripheral blood) cells and HepG2 (human liver hepatocellular carcinoma cell line) cells labeling CD81 with ab219209 at 1/100 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing membranous staining in Jurkat cells.

Negative control: HepG2 (PMID: 16641285).

The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab219209).



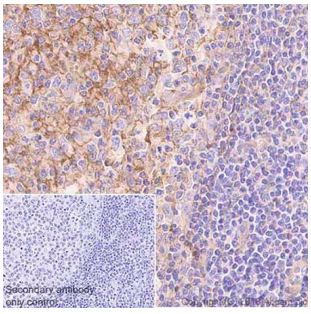
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD81 antibody [EPR21916] - BSA and Azide free (ab233692)

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

Immunohistochemical analysis of paraffin-embedded human diffuse large B cell lymphoma tissue labeling CD81 with ab219209 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Positive staining on tumor cells of human diffuse large B cell lymphoma (PMID: 20004001). Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab219209).



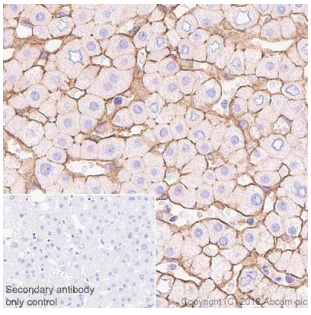
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD81 antibody [EPR21916] - BSA and Azide free (ab233692)

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

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling CD81 with ab219209 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Positive staining in the germinal center of human tonsil (PMID: 20004001). Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab219209).



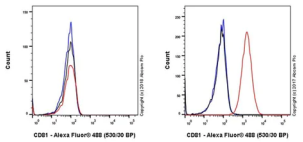
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD81 antibody [EPR21916] - BSA and Azide free (ab233692)

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

Immunohistochemical analysis of paraffin-embedded human liver tissue labeling CD81 with ab219209 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Mainly membranous staining in human liver (PMID: 19489072). Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab219209).



Flow Cytometry - Anti-CD81 antibody [EPR21916] - BSA and Azide free (ab233692)

CD81 Flow Cytometry staining using rabbit Anti-CD81 antibody

Flow cytometric analysis of Jurkat (human T cell leukemia cell line from peripheral blood) cells and HepG2 (human liver hepatocellular carcinoma cell line) cell lines labeling CD81 with ab219209 at 1/600 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells incubated with secondary antibody only) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.
Gated on viable cells.

Negative control: HepG2 (PMID: 16641285).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab219209).

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