abcam

ab271884

Anti-Claudin 1 antibody [SP128] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	SP128
Purification technique	Affinity purification Protein A/G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	-

Notes	-

Not recommended

Species	Mouse, Rat, Cow, Pig
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Cow, Pig
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Cow, Pig
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information CLDN1

Function

Claudins function as major constituents of the tight junction complexes that regulate the permeability of epithelia. While some claudin family members play essential roles in the formation of impermeable barriers, others mediate the permeability to ions and small molecules. Often, several claudin family members are coexpressed and interact with each other, and this determines the overall permeability. CLDN1 is required to prevent the paracellular diffusion of small molecules through tight junctions in the epidermis and is required for the normal barrier function of the skin. Required for normal water homeostasis and to prevent excessive water loss through the skin, probably via an indirect effect on the expression levels of other proteins, since CLDN1 itself seems to be dispensable for water barrier formation in keratinocyte tight junctions (PubMed:23407391). (Microbial infection) Acts as a co-receptor for hepatitis C virus (HCV) in hepatocytes (PubMed:17325668, PubMed:20375010, PubMed:24038151). Associates with CD81 and the CLDN1-CD81 receptor complex is essential for HCV entry into host cell (PubMed:20375010). Acts as a receptor for dengue virus (PubMed:24074594).

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

ab271884 is the carrier-free version of ab115783.

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	Claudin 1 also known as CLDN1 is a protein that plays a fundamental role in the formation of tight junctions in the epithelial cells. This claudin protein has a molecular weight of approximately 22 kDa. You can find it expressed in various tissues including the skin liver kidney and lungs. Claudin 1 belongs to the claudin family which consists of transmembrane proteins involved in sealing the space between adjacent cells therefore ensuring tissue integrity.
Biological function summary	This claudin protein contributes to establishing and maintaining the barrier function that controls paracellular transport which is the movement of substances between cells. Claudin 1 participates as a critical component of the tight junction complex and it interacts with other proteins such as occludin and zonula occludens. These interactions contribute to the regulation and maintenance of cell polarity and signaling.
Pathways	Claudin 1 is involved in the epithelial cell signaling pathways that influence cellular proliferation and differentiation. One significant pathway is the Wnt signaling pathway where claudin 1 cooperates with other claudins and proteins like β-

	catenin to regulate gene transcription. Additionally it is implicated in the MAPK pathway which involves signaling cascades that affect cell growth division and response to external stress.
Associated diseases and disorders	Claudin 1 shows a strong association with cancers particularly hepatocellular carcinoma and melanoma. In these conditions changes in claudin 1 expression levels can affect tumor progression and metastasis. It also associates with other proteins like E-cadherin impacting cell adhesion and epithelial-mesenchymal transition in cancerous cells. Moreover abnormalities in claudin 1 expression relate to skin disorders such as ichthyosis which is marked by a dysfunction in the skin barrier.

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

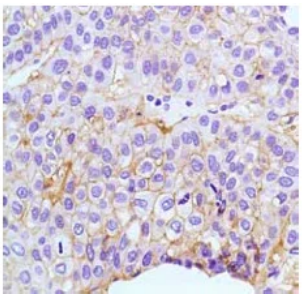
We do not recommend this combination. It is not covered by our product promise.

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.

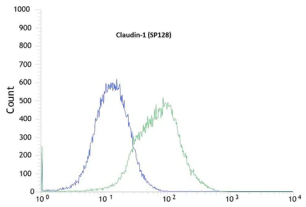
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Claudin 1 antibody [SP128] - BSA and Azide free (ab271884)

Claudin 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Claudin 1 antibody

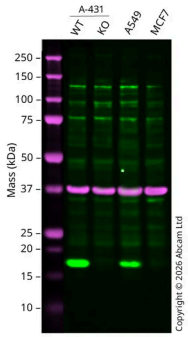
Staining of Human Claudin 1 in a Formalin/PFA-fixed paraffin-embedded section of Human Liver Carcinoma using ab115783 at a dilution of 1/200.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab115783).



Flow Cytometry - Anti-Claudin 1 antibody [SP128] - BSA and Azide free (ab271884)

Claudin 1 Flow Cytometry staining using rabbit Anti-Claudin 1 antibody

Flow cytometric analysis of rabbit anti-Claudin 1 (SP128) antibody ab115783 (1/100) in HepG2 cells (green) compared to negative control of rabbit IgG (blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab115783).



Western blot - Anti-Claudin 1 antibody [SP128] - BSA and Azide free (ab271884)

Claudin 1 Western blot staining using rabbit Anti-Claudin 1 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab115783).

Western blot: Anti-Claudin 1 antibody [SP128] ab115783 staining at 1/1000 dilution, shown in green; Mouse anti GAPDH ab8245 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 22 kDa in Wild-type A431 cell lysates with no signal observed at this size in CLDN1 knockout A431 cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-Claudin 1 antibody [SP128] (ab115783) at 1/1000 dilution

Lane 1:
Wild-type A431 cell lysates at 20 µg

Lane 2:
Western blot - Human CLDN1 knockout A-431 cell line (ab261889) at 20 µg

Lane 3:
A549 cell lysates at 20 µg

Lane 4:
MCF7 cell lysates at 20 µg

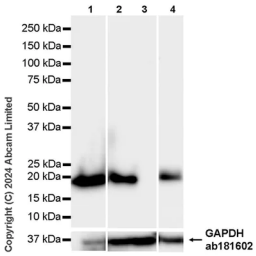
Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 22 kDa

Observed band size: 22 kDa



Western blot - Anti-Claudin 1 antibody [SP128] - BSA and Azide free (ab271884)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab115783).
Blocking and diluting buffer and concentration: 5% NFDM/TBST

Low expression: MCF7 (PMID: 30658316).

Exposure time:
Lane 1: 4 seconds
Lane 2 - 4: 15 seconds

ab181602 was used as a GAPDH loading control at a 1/200000 dilution.

All lanes:
Western blot - Anti-Claudin 1 antibody [SP128] (ab115783) at 1/1000 dilution

Lane 1:
A431 (human epidermoid carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 4:
Human liver cancer tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 22 kDa

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