abcam

ab211737

Anti-Claudin 1 antibody [EPRR18871]

Anti-Claudin 1 antibody [EPRR18871] (ab211737) is a rabbit monoclonal antibody detecting Claudin 1 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human,**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 30 publications

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPRR18871
Purification technique	Affinity purification Protein A
Concentration	0.673 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/40
Notes	-

Not recommended

Species	Recombinant full length protein - Human, Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Recombinant full length protein - Human
Dilution info	1/2000
Notes	-

Species	Human
Dilution info	1/2000
Notes	-

Not recommended

Species	Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Recombinant full length protein - Human, Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/60
Notes	-

Not recommended

Species	Recombinant full length protein - Human, Mouse
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/250
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Mouse
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Recombinant full length protein - Human

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	Conditional Ambient
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-Claudin 1 antibody [EPRR18871] (ab211737) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, samples.

What is the molecular weight of Claudin 1?
Anti-Claudin 1 [EPRR18871] (ab211737) specifically detects a band for Claudin 1 (UniProt: O95832) at a molecular weight of 22kDa.

Trusted by the scientific community
Anti-Claudin 1 [EPRR18871] (ab211737) was first used in a scientific publication in 2016 and has been cited over 30 times in peer-reviewed journals.

Reviewed by scientists
Anti-Claudin 1 [EPRR18871] (ab211737) has over 5 independent reviews from customers.

Specificity confirmed
The specificity of Anti-Claudin 1 antibody [EPRR18871] (ab211737) has been confirmed by Western blot testing in CLDN1 Knockout A431 cells.

Other related products
We have a range of other formats of antibody clone [EPRR18871] also available for your convenience: ab211737, Carrier free - ab238949, PE - ab303065, APC - ab303066, HRP - ab303067, Alkaline Phosphatase - ab308713, Alexa Fluor® 488 - ab309682, Alexa Fluor® 647 - ab310044, Alexa Fluor® 594 - ab310432, Alexa Fluor® 555 - ab311958

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

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 B-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

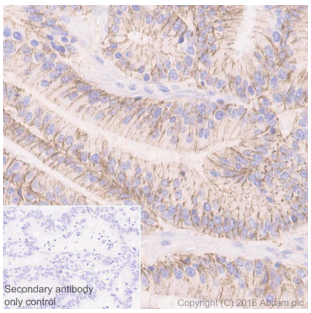
We do not recommend this combination. It is not covered by our product promise.

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.

13 product images

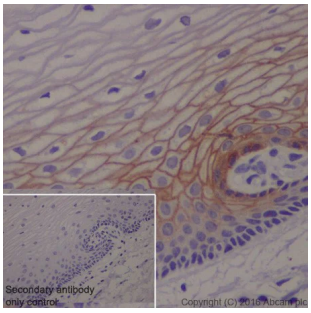


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

Immunohistochemical analysis of paraffin-embedded human colon cancer tissue labeling Claudin 1 with ab211737 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Membrane staining on human colon cancer (PMID: 15475928) is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

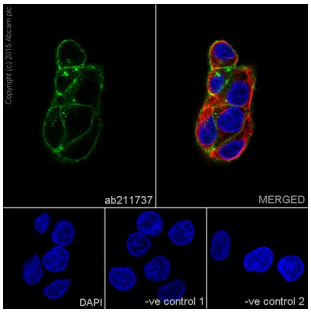


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

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

Immunohistochemical analysis of paraffin-embedded human cervix tissue labeling Claudin 1 with ab211737 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Membrane staining on human cervix is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

Claudin 1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Claudin 1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HepG2 (Human liver hepatocellular carcinoma cell line) cells labeling Claudin 1 with ab211737 at 1/1000 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 on HepG2 cell line.

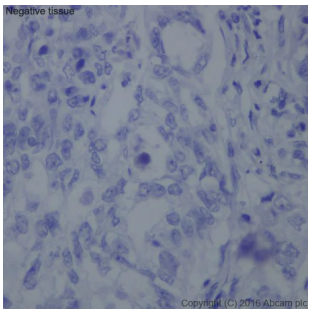
The nuclear counterstain is DAPI (blue).

Tubulin is detected with Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution (red).

The negative controls are as follows:-

-ve control 1: ab211737 at 1/1000 dilution followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution.

-ve control 2: Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



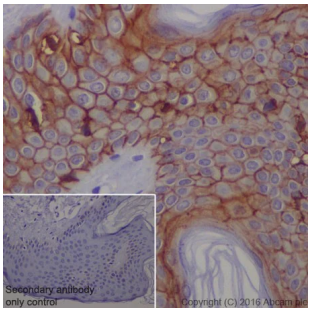
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

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

Immunohistochemical analysis of paraffin-embedded human lung adenocarcinoma tissue labeling Claudin 1 with ab211737 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.
Negative control: Negative staining on human lung adenocarcinoma, which is consistent with the literature (PMID: 17585317).

Counter stained with Hematoxylin.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

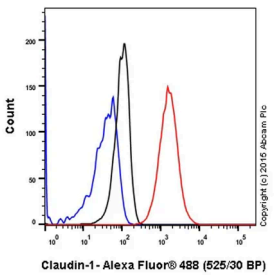


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

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

Immunohistochemical analysis of paraffin-embedded human skin tissue labeling Claudin 1 with ab211737 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Membrane staining on human skin squamous cells is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

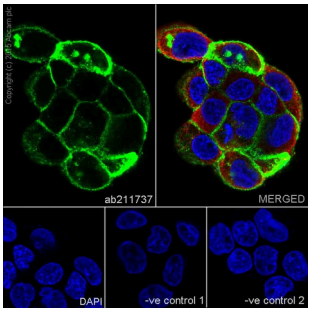
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

Claudin 1 Flow Cytometry (Intracellular) staining using rabbit Anti-Claudin 1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed 0.1% Tween-20 permeabilized HepG2 (Human liver hepatocellular carcinoma cell line) cells labelling Claudin 1 with ab211737 at 1/60 dilution (red) compared with a rabbit monoclonal IgG isotype control (ab172730; black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat Anti-Rabbit IgG (Alexa Fluor® 488) at 1/2000 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

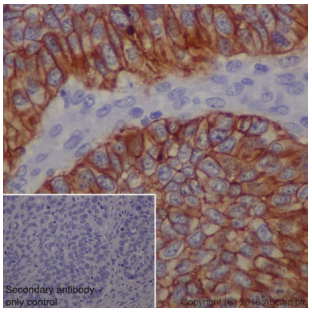
Claudin 1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Claudin 1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized A431 (Human epidermoid carcinoma cell line) cells labeling Claudin 1 with ab211737 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing membrane staining on A431 cell line.The nuclear counterstain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution (red).

The negative controls are as follows:-

-ve control 1: ab211737 at 1/1000 dilution followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution.

-ve control 2: Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

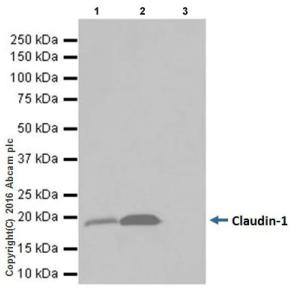


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

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

Immunohistochemical analysis of paraffin-embedded human lung squamous cell cancer tissue labeling Claudin 1 with ab211737 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Membrane staining on human lung squamous cell cancer is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunoprecipitation - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

Claudin 1 was immunoprecipitated from 0.35 mg of HepG2 (Human liver hepatocellular carcinoma cell line) whole cell lysate with ab211737 at 1/40 dilution.
Western blot was performed from the immunoprecipitate using ab211737 at 1/2000 dilution.

VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10,000 dilution

Lane 1: HepG2 whole cell lysate 10µg (Input).

Lane 2: ab211737 IP in HepG2 whole cell lysate.

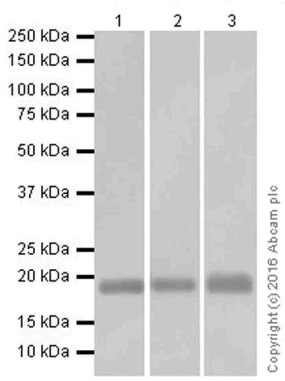
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab211737 in HepG2 whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 seconds.

All lanes:
Immunoprecipitation - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

Predicted band size: 22 kDa



Western blot - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

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

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: Lane 1/2: 15 seconds; Lane 3: 5 seconds.

The expression profile/ molecular weight observed is consistent with what has been described in the literature PMID: 26601075.

All lanes:
Western blot - Anti-Claudin 1 antibody [EPRR18871] (ab211737) at 1/2000 dilution

Lane 1:
HEK-293 (Human epithelial cell line from embryonic kidney) whole cell lysate at 10 µg

Lane 2:
A431 (Human epidermoid carcinoma cell line) whole cell lysate at 10 µg

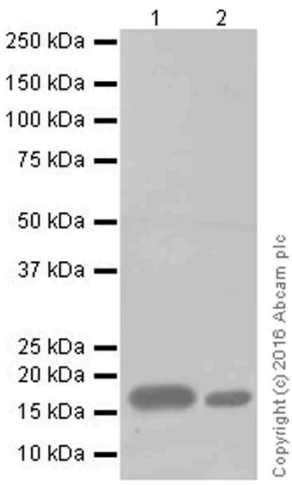
Lane 3:
HepG2 (Human liver hepatocellular carcinoma cell line) whole cell lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 22 kDa

Observed band size: 18 kDa



Western blot - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

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

Blocking/Dilution buffer: 5% NFDM/TBST.
The expression profile/ molecular weight observed is consistent with what has been described in the literature PMID: 26601075.

All lanes:
Western blot - Anti-Claudin 1 antibody [EPRR18871] (ab211737) at 1/2000 dilution

Lane 1:
Human fetal liver lysate at 10 µg

Lane 2:
Human fetal kidney lysate at 10 µg

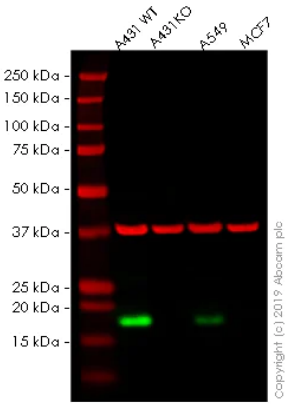
Secondary

All lanes:
Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/10000 dilution

Predicted band size: 22 kDa

Observed band size: 18 kDa

Exposure time: 3min



Western blot - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

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

Lanes 1 - 4: Merged signal (red and green). Green - ab211737 observed at 18 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab211737 was shown to specifically react with in wild-type A431 WT cells as signal was lost in A431 CLDN1 knockout cells. Wild-type and A431 CLDN1 knockout samples were subjected to SDS-PAGE. The membrane was blocked with 3pc Milk. ab211737 and ab8245 (Mouse anti GAPDH loading control) were incubated overnight at 4°C at 1/2000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Claudin 1 antibody [EPRR18871] (ab211737) at 1/2000 dilution

Lane 1:
Wild-type A-431 (Human epidermoid carcinoma cell line) whole cell lysate at 20 µg

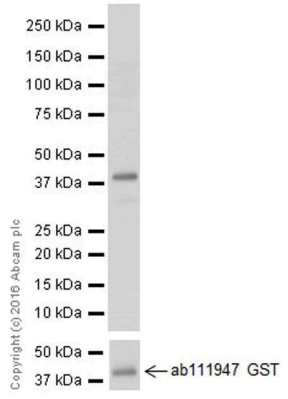
Lane 2:
CLDN1 knockout A-431 (Human epidermoid carcinoma cell line) whole cell lysate at 20 µg

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

Lane 3:
A549 (Human lung carcinoma cell line) whole cell lysate at 20 µg

Lane 4:
MCF7 (Human breast adenocarcinoma cell line) whole cell lysate at 20 µg

Predicted band size: 22 kDa



Western blot - Anti-Claudin 1 antibody [EPRR18871] (ab211737)

Claudin 1 Western blot staining of Human Claudin 1 full length recombinant protein using rabbit Anti-Claudin 1 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
Human Claudin 1 full length recombinant protein contains aa1-211 with His-Tag® and GST-tag. This recombinant was made in house.

All lanes:
Western blot - Anti-Claudin 1 antibody [EPRR18871] (ab211737) at 1/5000 dilution

All lanes:
Human Claudin 1 full length recombinant protein at 0.01 µg

Secondary

All lanes:

Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 22 kDa

Observed band size: 45 kDa

Exposure time: 1s

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