abcam

ab307587

Anti-CD98 antibody [EPR27110-42]

Anti-CD98 antibody [EPR27110-42] (ab307587) is a rabbit monoclonal antibody detecting CD98 in **Western Blot, Flow Cytometry, IP, IHC-P, ICC/IF**. Suitable for **Human**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency

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	EPR27110-42
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human

Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/5000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Not recommended

Species	Mouse
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information SLC3A2

Function	Acts as a chaperone that facilitates biogenesis and trafficking of functional transporters heterodimers to the plasma membrane. Forms heterodimer with SLC7 family transporters (SLC7A5, SLC7A6, SLC7A7, SLC7A8, SLC7A10 and SLC7A11), a group of amino-acid antiporters (PubMed:10574970, PubMed:10903140, PubMed:11557028, PubMed:30867591, PubMed:33298890, PubMed:33758168, PubMed:34880232, PubMed:9751058, PubMed:9829974, PubMed:9878049). Heterodimers function as amino acids exchangers, the specificity of the substrate depending on the SLC7A subunit. Heterodimers SLC3A2/SLC7A6 or SLC3A2/SLC7A7 mediate the uptake of dibasic amino acids (PubMed:10903140, PubMed:9829974). Heterodimer SLC3A2/SLC7A11 functions as an antiporter by mediating the exchange of extracellular anionic L-cystine and intracellular L-glutamate across the cellular plasma membrane (PubMed:34880232). SLC3A2/SLC7A10 translocates small neutral L- and D-amino acids across the plasma membrane (By similarity). SLC3A2/SLC75 or SLC3A2/SLC7A8 translocates neutral amino acids with broad specificity, thyroid hormones and L-DOPA (PubMed:10574970, PubMed:11389679, PubMed:11557028, PubMed:11564694, PubMed:11742812, PubMed:12117417, PubMed:12225859, PubMed:12716892, PubMed:15980244, PubMed:30867591, PubMed:33298890, PubMed:33758168). SLC3A2 is essential for plasma membrane localization, stability, and the transport activity of SLC7A5 and SLC7A8 (PubMed:10391915, PubMed:10574970, PubMed:11311135, PubMed:15769744, PubMed:33066406). When associated with LAPTM4B, the heterodimer SLC7A5 is recruited to lysosomes to promote leucine uptake into these organelles, and thereby mediates mTORC1 activation (PubMed:25998567). Modulates integrin-related signaling and is essential for integrin-dependent cell spreading, migration and tumor progression (PubMed:11121428, PubMed:15625115). (Microbial infection) In case of hepatitis C virus/HCV infection, the complex formed by SLC3A2 and SLC7A5/LAT1 plays a role in HCV propagation by facilitating viral entry into host cell and increasing L-leucine uptake-mediated mTORC1 signaling activation, thereby contributing to HCV-mediated pathogenesis. (Microbial infection) Acts as a receptor for malaria parasite Plasmodium vivax (Thai isolate) in immature red blood cells.

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-CD98 antibody [EPR27110-42] (ab307587) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

What is the molecular weight of CD98?
Anti-CD98 [EPR27110-42] (ab307587) specifically detects a band for CD98 (UniProt: P08195) at a molecular weight of 70kDa.

Specificity confirmed
The specificity of Anti-CD98 antibody [EPR27110-42] (ab307587) has been confirmed by Flow Cytometry testing in SLC3A2 Knockout HeLa cell line, ab265708.

Other related products
We have a range of other formats of antibody clone [EPR27110-42] also available for your convenience: ab307587, Carrier free - ab307588, Alexa Fluor® 594 - ab314338, Alexa Fluor® 647 - ab314339, APC - ab317481, Alexa Fluor® 488 - ab317530, PE - ab322668

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	CD98 also known as CD98hc CD98 protein or LAT1/CD98 is a type II membrane protein often found in association with the heavy chains of amino acid transporters like LAT1. It has a molecular mass of approximately 85-100 kDa. CD98 is widely expressed in numerous tissues including the liver kidney and various tumors. It plays an important role in cellular processes by facilitating the transport of amino acids across plasma membranes which is essential for maintaining cellular homeostasis and proliferation.

Biological function summary	CD98 forms a complex with light chains of the heterodimeric amino acid transporters such as LAT1 and LAT2. This interaction enhances the uptake of neutral amino acids into cells. CD98 also interacts with integrins influencing cell adhesion and migration which are critical for cellular signaling and response. Through these interactions CD98 impacts not only cell survival and growth but also immune responses and angiogenesis.
Pathways	CD98 is a vital component of the mTOR signaling pathway influencing cell growth and proliferation. It also plays a part in the integrin signaling pathway which regulates cell adhesion and migration. In these pathways CD98 works closely with proteins like FG1 and mTORC1. These relationships enable it to modulate cellular responses to nutritional availability and mechanical cues from the environment.
Associated diseases and disorders	CD98 expression and function have links to cancer and autoimmune diseases. High expression levels of CD98 are observed in various cancers such as lymphomas where it correlates with increased tumor growth and poor prognosis. In autoimmune disorders like rheumatoid arthritis CD98 influences immune cell activation and migration. Proteins such as CP1 and FG1 interact with CD98 contributing to disease pathology by affecting cellular and immune 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

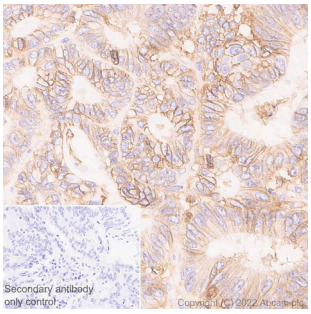
We do not recommend this combination. It is not covered by our product promise.

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.

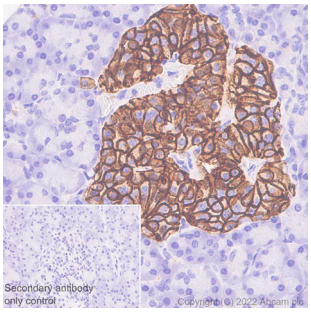
Full details and terms and conditions can be found here:
Terms & Conditions.

10 product images



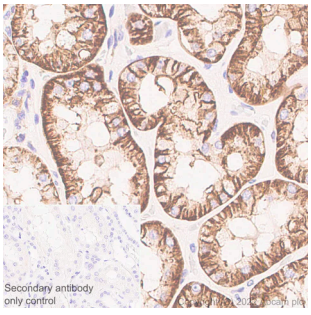
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD98 antibody [EPR27110-42] (ab307587)

Immunohistochemical analysis of paraffin-embedded Human colon carcinom tissue labeling CD98 with ab307587 at 1/5000 (0.099 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human colon carcinoma (PMID: 29860836). The section was incubated with ab307587 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument.Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 10 mins



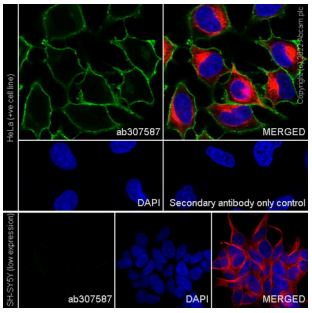
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD98 antibody [EPR27110-42] (ab307587)

Immunohistochemical analysis of paraffin-embedded Human pancreas tissue labeling CD98 with ab307587 at 1/5000 (0.099 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on islet of human pancreas. The section was incubated with ab307587 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument.Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 10 mins



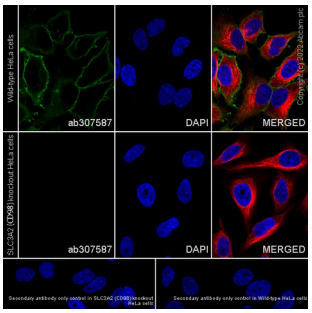
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD98 antibody [EPR27110-42] (ab307587)

Immunohistochemical analysis of paraffin-embedded Human kidney tissue labeling CD98 with ab307587 at 1/5000 (0.099 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human kidney. The section was incubated with ab307587 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 10 mins



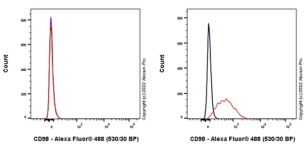
Immunocytochemistry/ Immunofluorescence - Anti-CD98 antibody [EPR27110-42] (ab307587)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labelling CD98 with ab307587 at 1/100 (4.97 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/mL dilution (Green). Confocal image showing membrane and weak cytoplasmic staining in HeLa cell line.Low expression: SH-SY5YImage was taken with a confocal microscope(Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution.



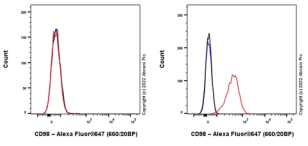
Immunocytochemistry/ Immunofluorescence - Anti-CD98 antibody [EPR27110-42] (ab307587)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized SLC3A2 (CD98) KO HeLa (SLC3A2 (CD98) knockout human cervix adenocarcinoma epithelial cell) (ab265708) cells labelling CD98 with ab307587 at 1/100 (4.97 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/mL dilution (Green). Confocal image showing membrane and weak cytoplasmic staining in parental HeLa cell line.Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution.



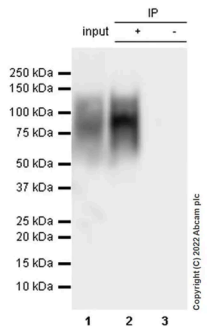
Flow Cytometry - Anti-CD98 antibody [EPR27110-42] (ab307587)

Flow cytometric analysis of SH-SY5Y (human neuroblastoma epithelial cell, Left) / HeLa (human cervix adenocarcinoma epithelial cell, Right) cells labelling CD98 with ab307587 at 1/50 dilution (1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells.Low expression: SH-SY5Y .



Flow Cytometry - Anti-CD98 antibody [EPR27110-42] (ab307587)

Flow cytometric analysis of Wild-type HeLa (human cervix adenocarcinoma epithelial cell, Right) / SLC3A2 (CD98) knockout HeLa (Left) cells labelling CD98 with ab307587 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat anti-Rabbit IgG (Alexa Fluor® 647, ab150083) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells.Positive staining on HeLa cells (ab255928), while no staining on CD98 knockout HeLa cells (ab265708).



Immunoprecipitation - Anti-CD98 antibody [EPR27110-42] (ab307587)

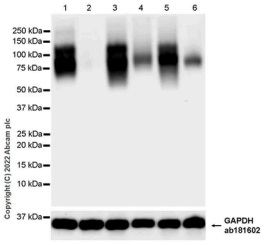
CD98 was immunoprecipitated from 0.35 mg HeLa whole cell lysate with ab307587 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab307587 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate Lane 2: ab307587 IP in HeLa whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab307587 in hela whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 1 second
All lanes:
Immunoprecipitation - Anti-CD98 antibody [EPR27110-42] (ab307587) at 1/30 dilution

All lanes:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 1s



Western blot - Anti-CD98 antibody [EPR27110-42] (ab307587)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Low expression: SH-SY5Y Exposure time: 3 seconds
All lanes:
Western blot - Anti-CD98 antibody [EPR27110-42] (ab307587) at 1/1000 dilution

Lane 1:
Wild-type HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
SLC3A2 (CD98) knockout HeLa whole cell lysate at 20 µg

Lane 3:
HeLa whole cell lysate at 20 µg

Lane 4:
K562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate at 20 µg

Lane 5:
SW620 (human colorectal adenocarcinoma epithelial cell) whole cell lysate at 20 µg

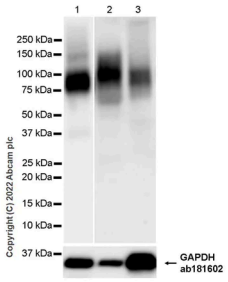
Lane 6:
SH-SY5Y (human neuroblastoma epithelial cell) whole cell lysate at 20 µg

Secondary

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

Observed band size: 70-130 kDa

Exposure time: 3s



Western blot - Anti-CD98 antibody [EPR27110-42] (ab307587)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Low expression: skeletal muscle (PMID: 10574970, PMID: 11557028). The lanes 2 and 3 were developed using a high sensitivity ECL substrate. Exposure time: Lane 1: 6 seconds, lanes 2 and 3: 48 seconds.
All lanes:
Western blot - Anti-CD98 antibody [EPR27110-42] (ab307587) at 1/1000 dilution

Lane 1:
Human kidney tissue lysate at 20 µg

Lane 2:
Human breast tissue lysate at 20 µg

Lane 3:
Human skeletal muscle tissue lysate at 20 µg

Secondary

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

Developed using the ECL technique.

Observed band size: 70-130 kDa

Exposure time: 6s

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