abcam

ab303510

Anti-CD98 antibody [EPR27111-83]

Recombinant | RabMAb | 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	EPR27111-83
Purification technique	Affinity purification Protein A
Concentration	0.503 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

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

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

IHC-Fr

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Not recommended

Species	Human, Rat

Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Mouse
Dilution info	1/30

Notes	-

Not recommended

Species	Rat, Human
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:10734121, PubMed:11011012, PubMed:9915839). 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. 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 (By similarity). 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. SLC3A2 is essential for plasma membrane localization, stability, and the transport activity of SLC7A5 and SLC7A8. When associated with LAPTM4B, the heterodimer SLC7A5 is recruited to lysosomes to promote leucine uptake into these organelles, and thereby mediates mTORC1 activation. Modulates integrin-related signaling and is essential for integrin-dependent cell spreading, migration and tumor progression (By similarity).

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 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.

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.

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

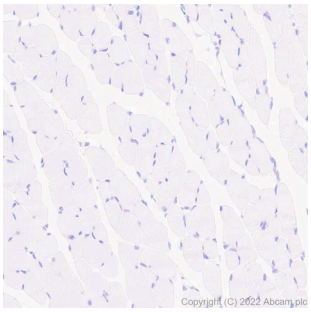
We do not recommend this combination. It is not covered by our product promise.

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.

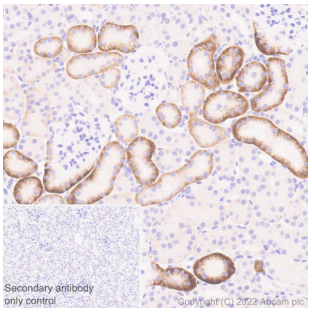
Full details and terms and conditions can be found here:
Terms & Conditions.

12 product images



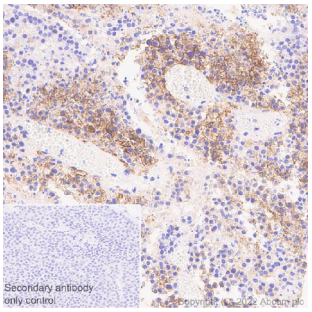
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD98 antibody [EPR27111-83] (ab303510)

Immunohistochemical analysis of paraffin-embedded mouse skeletal muscle tissue labeling CD98 with ab303510 at 1/1000 dilution (0.494 µg/mL), followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection). Negative control: no staining is observed on mouse skeletal muscle. The section was incubated with ab303510 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 dilution (BOND™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins was used.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD98 antibody [EPR27111-83] (ab303510)

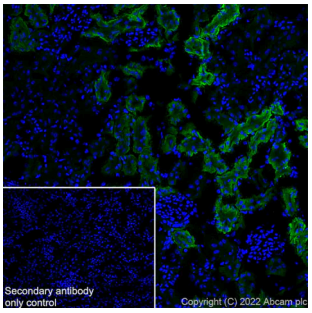
Immunohistochemical analysis of paraffin-embedded Mouse kidney tissue labeling CD98 with ab303510 at 1/1000 (0.494 ug/ml) followed by a ready to use LeicaDS9800 (Bond Polymer Refine Detection) was used. Positive staining on mouse kidney. The section was incubated with ab303510 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument 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 Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD98 antibody [EPR27111-83] (ab303510)

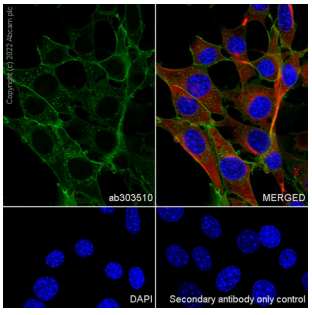
Immunohistochemical analysis of paraffin-embedded mouse breast cancer tissue labeling CD98 with ab303510 at 1/1000 dilution (0.494 µg/mL), followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection). Positive staining was observed on mouse breast cancer. The section was incubated with ab303510 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 dilution (BOND™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins was used.



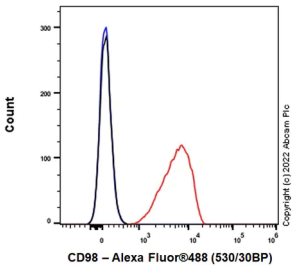
Immunohistochemistry (Frozen sections) - Anti-CD98 antibody [EPR27111-83] (ab303510)

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse kidney (fresh) tissue labeling CD98 with ab303510 at 1/500 (0.988 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Confocal image showing positive staining in proximal tubules of mouse kidney tissue. The nuclear counterstain was DAPI (Blue). The section was incubated with ab303510 for 60mins at room temperature. The section was then mounted using Fluoromount®.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbedat 1/1000 2 ug/mL dilution.



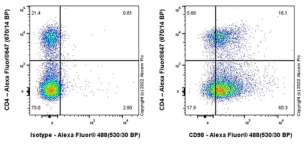
Immunocytochemistry/ Immunofluorescence - Anti-CD98 antibody [EPR27111-83] (ab303510)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling CD98 with ab303510 at 1/50 (9.88 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 cytoplasmic and membranous staining in NIH/3T3 cell line.Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). is observed. 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.



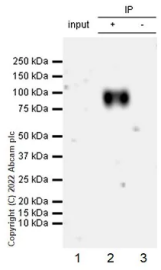
Flow Cytometry - Anti-CD98 antibody [EPR27111-83] (ab303510)

Flow cytometric analysis of / fixed / permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling CD98 with ab303510 at 1/500 dilution (0.1µg) (Red) (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). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells.



Flow Cytometry - Anti-CD98 antibody [EPR27111-83] (ab303510)

Flow cytometric analysis of / fixed / permeabilized Mouse splenocytes cells labelling CD98 with ab303510 at 1/500 dilution (0.1µg)/ Right (Red) compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells. Cells were stained with rabbit IgG or ab303510. Then stained with anti-CD4 conjugated to Alexa Fluor® 647.



Immunoprecipitation - Anti-CD98 antibody [EPR27111-83] (ab303510)

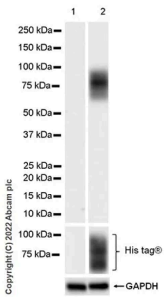
CD98 was immunoprecipitated from 0.35 mg 3T3-L1 (mouse embryonic fibroblast) whole cell lysate with ab303510 at 1/30 dilution (2 µg in 0.35 mg lysates). Western blot was performed on the immunoprecipitate using ab303510 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP) (ab131366) was used at 1/5000 dilution. Lane 1: 3T3-L1(mouse embryonic fibroblast) whole cell lysate 10 µg (Inset) Lane 2: ab303510 IP in 3T3-L1whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab303510 in 3T3-L1 whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 180 seconds. Observed MW (kDa): 75-100
All lanes:
Immunoprecipitation - Anti-CD98 antibody [EPR27111-83] (ab303510) at 1/30 dilution

All lanes:
3T3-L1 (mouse embryonic fibroblast) whole cell lysate at 10 µg

Secondary

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

Exposure time: 180s



Western blot - Anti-CD98 antibody [EPR27111-83] (ab303510)

This data was developed using ab303510, the same antibody clone in a different buffer formulation. Blocking and dilution buffer and concentration: 5% NFDM/TBST.
All lanes:
Western blot - Anti-CD98 antibody [EPR27111-83] (ab303510) at 1/1000 dilution

Lane 1:
HEK-293T cells transfected with an empty vector containing a his tag, whole cell lysate at 20 µg

Lane 2:

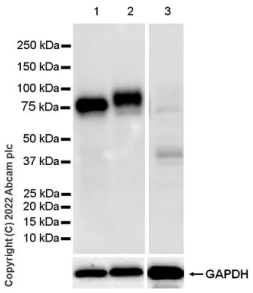
HEK-293T cells transfected with a mouse CD98 expression vector containing a his tag, whole cell lysate at 20 µg

Secondary

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

Observed band size: 75-100 kDa

Exposure time: 10s



Western blot - Anti-CD98 antibody [EPR27111-83] (ab303510)

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Low expression: skeletal muscle (human protein atlas database)

The molecular weight observed is consistent with what has been described in the literature (PMID: 18625289, 26611634).

This blot was developed using a high sensitivity ECL substrate. The high-sensitivity ECL substrate used allows for the detection of proteins in the mid-femtogram range.

The slight variation of MW observed between the different samples is due to the different glycosylation.

All lanes:
Western blot - Anti-CD98 antibody [EPR27111-83] (ab303510) at 1/1000 dilution

Lane 1:
Mouse kidney tissue lysate at 20 µg

Lane 2:
Mouse placenta tissue lysate at 20 µg

Lane 3:
Mouse skeletal muscle tissue lysate at 20 µg

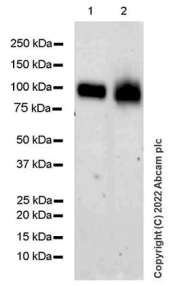
Secondary

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

Developed using the ECL technique.

Observed band size: 75-100 kDa

Exposure time: 26s



Western blot - Anti-CD98 antibody [EPR27111-83] (ab303510)

Blocking and dilution buffer and concentration: 5% NFDM/TBST. The slight variation of MW observed between the different samples is due to the different glycosylation.
All lanes:
Western blot - Anti-CD98 antibody [EPR27111-83] (ab303510) at 1/1000 dilution

Lane 1:
HC11 (mouse mammary gland epithelial cell), whole cell lysate at 20 µg

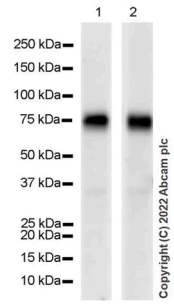
Lane 2:
ES-D3 (mouse blastocyst-derived embryonic stem cell), whole cell lysate at 20 µg

Secondary

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

Observed band size: 75-100 kDa

Exposure time: 180s



Western blot - Anti-CD98 antibody [EPR27111-83] (ab303510)

Blocking and dilution buffer and concentration: 5% NFDM/TBST. The slight variation of MW observed between the different samples is due to the different glycosylation.
All lanes:
Western blot - Anti-CD98 antibody [EPR27111-83] (ab303510) at 1/1000 dilution

Lane 1:
NIH/3T3 (mouse embryonic fibroblast), whole cell lysate at 20 µg

Lane 2:
3T3-L1 (mouse embryonic fibroblast), whole cell lysate at 20 µg

Secondary

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

Observed band size: 75-100 kDa

Exposure time: 92s

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