abcam

ab322668

# PE Anti-CD98 antibody [EPR27110-42]

Recombinant | RabMAb | KO Validated

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Conjugation** | PE |
| **Excitation/Emission** | Ex: 480;565nm, Em: 578nm |
| **Storage buffer** | pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 1% 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<br>Batch concentration finder → |

## Reactivity data

## Flow Cyt

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/500 |

| | |
|---|---|
| **Notes** | - |

## ICC/IF

### Expected

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## IHC-P

### Expected

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | Use at an assay dependent concentration. |
| **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

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|---|---|
| **Shipped at conditions** | Blue Ice |
| **Appropriate short-term storage duration** | 1-2 weeks |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | +4°C |
| **Aliquoting information** | Upon delivery aliquot |
| **Storage information** | Avoid freeze / thaw cycle, Store in the dark |

## Notes

**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.

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

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| **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.

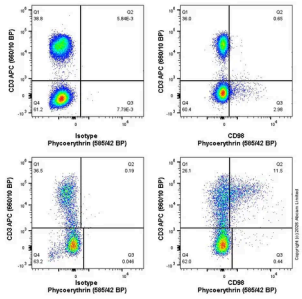
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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

## 4 product images



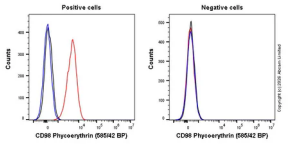
### Flow Cytometry - PE Anti-CD98 antibody [EPR27110-42] (ab322668)

CD98 Flow Cytometry staining of Human peripheral mononuclear cells using rabbit Anti-CD98 antibody

Flow cytometry scatter plots showing untreated human peripheral mononuclear cells (PBMCs) (top) and PBMCs activated with 5 µg/ml PHA for 18h (bottom), either stained with ab322668 (right) or isotype control (left). The cells were fixed using BD CytoFix™ (20 min). The cells were incubated in 1x PBS containing 10 µg/ml human IgG and 10% normal goat serum to block FC receptors and non-specific protein-protein interaction followed by the antibody (ab322668) (1x $10^6$ in 100µl at 0.04 µg/ml (1/12500)) for 30min on ice. Isotype control antibody was Rabbit IgG (monoclonal) Phycoerythrin Isotype Control (ab209478) (left). The cells were simultaneously stained with CD3.

Acquisition of >30000 events were collected using a 50 mW Yellow/Green laser (561nm) and 585/42 bandpass filter.

This data was acquired using a Beckman Coulter CytoFlexLX flow cytometer.



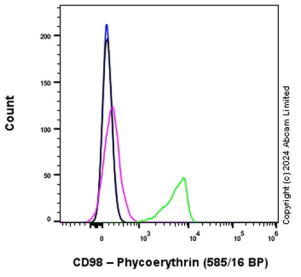
### Flow Cytometry - PE Anti-CD98 antibody [EPR27110-42] (ab322668)

CD98 Flow Cytometry staining using rabbit Anti-CD98 antibody

Flow cytometry overlay histogram showing left wild-type HeLa positive cells and right negative SLC3A2 knockout HeLa stained with ab322668 (red line). The cells were incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab322668) (1x $10^6$ in 100µl at 0.2 µg/ml (1/2500)) for 30min at 4°C.

Isotype control antibody was Rabbit IgG (monoclonal) Phycoerythrin Isotype Control (ab209478) (black line) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

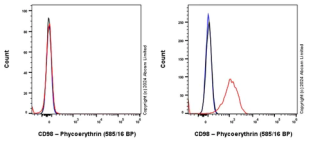
Acquisition of >5000 events were collected using a 50 mW Yellow/Green laser (561nm) and 585/42 bandpass filter.




### Flow Cytometry - PE Anti-CD98 antibody [EPR27110-42] (ab322668)

Flow cytometric analysis of Wild-type HeLa (human cervix adenocarcinoma epithelial cell, Green) / SLC3A2 (CD98) knockout HeLa (Magenta) cells labelling CD98 with ab322668 at 1/500 dilution (0.1ug) (Magenta) and Green compared with a Rabbit IgG monoclonal [EPR25A] - Isotype Control (Phycoerythrin) (ab209478) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Gated on viable cells.



# Flow Cytometry - PE Anti-CD98 antibody [EPR27110-42] (ab322668)

Flow cytometric analysis of SH-SY5Y (human neuroblastoma epithelial cell, Left) / HeLa (human cervix adenocarcinoma epithelial cell, Right) cells labelling CD98 with ab322668 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit IgG monoclonal [EPR25A] - Isotype Control (Phycoerythrin) (ab209478) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Gated on viable cells.
Low expression: SH-SY5Y .

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