abcam

ab278043

Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker

Anti-LAMP1/CD107a antibody [EPR24395-31] (ab278043) is a rabbit monoclonal antibody detecting LAMP1/CD107a in **Western Blot, Flow Cytometry (Intra), 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	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	EPR24395-31
Purification technique	Affinity purification Protein A
Concentration	0.547 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human

Dilution info	1/500
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 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	Rat
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information LAMP1/CD107a

Function	Lysosomal membrane glycoprotein which plays an important role in lysosome biogenesis, lysosomal pH regulation, autophagy and cholesterol homeostasis (PubMed:37390818). Acts as an important regulator of lysosomal lumen pH regulation by acting as a direct inhibitor of the proton channel TMEM175, facilitating lysosomal acidification for optimal hydrolase activity

(PubMed:37390818). Also plays an important role in NK-cells cytotoxicity (PubMed:2022921, PubMed:23632890). Mechanistically, participates in cytotoxic granule movement to the cell surface and perforin trafficking to the lytic granule (PubMed:23632890). In addition, protects NK-cells from degranulation-associated damage induced by their own cytotoxic granule content (PubMed:23847195). Presents carbohydrate ligands to selectins (PubMed:7685349). (Microbial infection) Acts as a receptor for Lassa virus glycoprotein (PubMed:24970085, PubMed:25972533, PubMed:27605678, PubMed:28448640). Also promotes fusion of the virus with host membrane in less acidic endosomes (PubMed:29295909). (Microbial infection) Supports the FURIN-mediated cleavage of mumps virus fusion protein F by interacting with both FURIN and the unprocessed form but not the processed form of the viral protein F.

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-LAMP1 antibody [EPR24395-31] (ab278043) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

What is the molecular weight of LAMP1?
Anti-LAMP1 [EPR24395-31] (ab278043) specifically detects a band for LAMP1 (UniProt: P11279) at a molecular weight of 45kDa.

Specificity confirmed
The specificity of Anti-LAMP1 antibody [EPR24395-31] (ab278043) has been confirmed by Flow Cytometry (Intracellular) testing in LAMP1 Knockout HAP1 cells.

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	LAMP1 also known as lysosome-associated membrane glycoprotein 1 is an important player within cellular mechanics. It exhibits a molecular weight of approximately 120 kDa. This protein exists abundantly in lysosomal membranes and sometimes in endosomes. LAMP1 operates near most cell types and has a significant presence in immune neuronal and epithelial cells. By maintaining the lysosomal membrane's integrity LAMP1 contributes to cellular homeostasis.
Biological function summary	LAMP1 functions to protect lysosomal membranes from the harsh environment inside the lysosome. It forms part of a protective glycocalyx composed of highly glycosylated proteins supporting lysosomal stability. This protein interacts closely with other lysosome markers and assists in the fusion of vesicles with lysosomes making it fundamental to lysosomal processes. As a lysosome marker LAMP1 helps identify lysosomal compartments during studies involving microscopy and LAMP1 staining.
Pathways	The protein LAMP1 participates in the autophagy and endocytic pathways. It acts collaboratively within the lysosomal degradation route involving proteins like LAMP2 which also supports lysosomal function. LAMP1 influences these pathways by mediating the fusion of autophagosomes or endosomes with lysosomes thereby ensuring efficient breakdown of cellular debris and macromolecules.
Associated diseases and disorders	LAMP1 associates with lysosomal storage disorders and neurodegenerative diseases. The abnormal function or expression of LAMP1 has been linked to conditions such as Niemann-Pick disease and Alzheimer's disease. In these contexts its interaction with proteins like APP (amyloid precursor protein) illustrates its involvement in pathogenic pathways that lead to cellular dysfunction and disease progression. Understanding LAMP1's role may enhance diagnostic and therapeutic approaches pertaining to these disorders.

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.

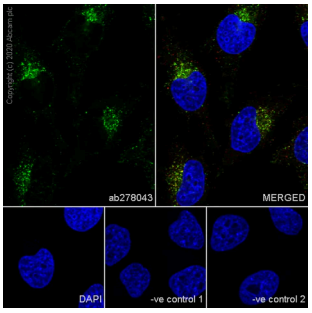
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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12 product images



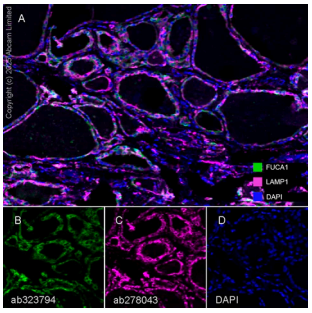
Immunocytochemistry/ Immunofluorescence - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Immunocytochemistry/ Immunofluorescence staining of HeLa using rabbit Anti-LAMP1/CD107a antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa cells labelling LAMP1 with ab278043 at 1/100 (5.45 ug/ml) dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 (green). Confocal image showing cytoplasmic staining in HeLa. ab25630 Anti-LAMP1 mouse monoclonal antibody was used to counterstain at 1/500 (red). The Nuclear counterstain was DAPI (blue).

Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution

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Multiplex immunohistochemistry - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Multiplex immunohistochemistry staining of human thyroid tissue using rabbit Anti-LAMP1/CD107a antibody

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded human thyroid tissue staining FUCA1 with ab323794 at a 1:1000 (0.511 ug/ml) dilution, ab278043 anti-LAMP1 used at 1:5000 (0.103 ug/ml) dilution.

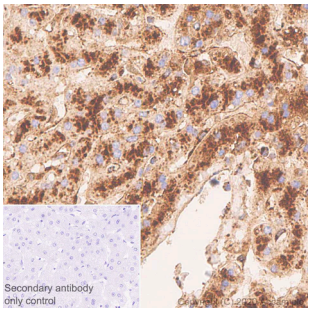
Panel A: merged staining of anti-FUCA1 (green; Opal™520), anti-LAMP1 (magenta; Opal™570) on human thyroid.
Panel B: anti-FUCA1 showed granular staining in human thyroid.
Panel C: ant-LAMP1 staining lysosome in human thyroid.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab323794 and ab278043 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

Nuclear counter stain with DAPI.

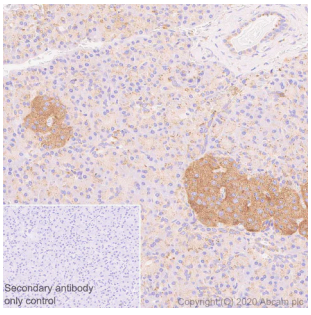
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-LAMP1/CD107a antibody

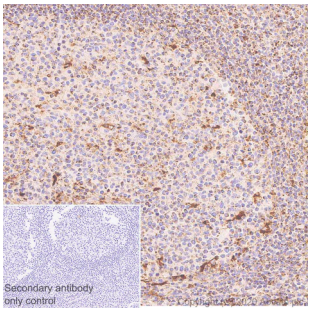
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling LAMP1 with ab278043 at 1/5000 (0.109 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond® Polymer Refine Detection) was used. Cytoplasmic staining in human liver. The section was incubated with ab278043 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond® Polymer Refine Detection) was used.
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-LAMP1/CD107a antibody

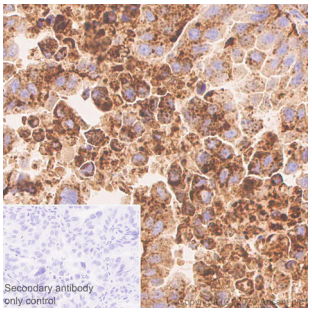
Immunohistochemical analysis of paraffin-embedded Human pancreas tissue labelling LAMP1 with ab278043 at 1/5000 (0.109 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond® Polymer Refine Detection) was used. Cytoplasmic staining in human pancreas. The section was incubated with ab278043 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond® Polymer Refine Detection) was used.
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-LAMP1/CD107a antibody

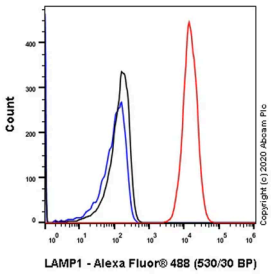
Immunohistochemical analysis of paraffin-embedded Human tonsil labelling LAMP1 with ab278043 at 1/5000 (0.109 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond® Polymer Refine Detection) was used. Cytoplasmic staining in human tonsil. The section was incubated with ab278043 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond® Polymer Refine Detection) was used.
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-LAMP1/CD107a antibody

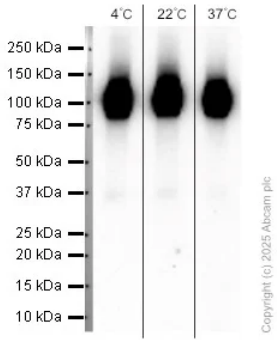
Immunohistochemical analysis of paraffin-embedded Human lung cancer tissue labelling LAMP1 with ab278043 at 1/5000 (0.109 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond® Polymer Refine Detection) was used. Cytoplasmic staining in human lung cancer. The section was incubated with ab278043 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond® Polymer Refine Detection) was used. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Flow Cytometry (Intracellular) - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Flow Cytometry (Intracellular) staining using rabbit Anti-LAMP1/CD107a antibody

Intracellular flow cytometric analysis of HeLa (human cervix adenocarcinoma epithelial cell) cells labelling LAMP1 with ab278043 at 1/500 dilution (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, ab150077) at 1/2000 dilution was used as the secondary antibody.



Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Western blot staining of HeLa whole cell lysate using rabbit Anti-LAMP1/CD107a antibody

This blot was produced using 4-20% SDS-PAGE containing 15 µg of HeLa whole cell lysate per lane at 150V for 1hr before being transferred onto a 0.45 µm PVDF membrane at 75V for 1hr. The membrane was then blocked for 1hr using 5% NFDM/TBST, then incubated with ab278043 (1/2000) at room temperature for 1hr. After being washed three times in TBST, the membrane was incubated with Peroxidase conjugated goat anti-rabbit IgG (H+L) (ab97051) at 1/50,000 dilution for 1hr at room temperature. The membrane was washed three times again. Then the signal was developed using the ECL technique.

ab278043 was stored at a range of temperatures (+4°C, +22°C, +37°C) for 1 week before being tested in WB. The image shows the band intensity remains relatively constant across all storage temperatures, demonstrating that antibody activity is not affected under these conditions. This data was generated as part of a structured antibody stability study supporting Abcam’ s transition from cold⊠chain to ambient shipping.

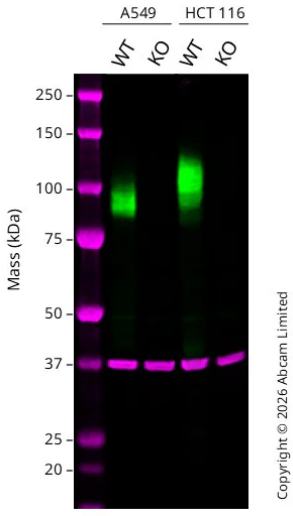
All lanes:
Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043) at 1/2000 dilution

All lanes:
HeLa whole cell lysate at 15 µg with NDFM/TBST

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Exposure time: 40s



Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Western blot staining using rabbit Anti-LAMP1/CD107a antibody

Western blot: Rabbit monoclonal [EPR24395-31] to LAMP1 ab278043 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 80-120 kDa in Wild-type A549 and HCT 116 cell lysates with no signal observed at this size in LAMP1 knockout A549 cell line and LAMP1 knockout HCT 116 cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % 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.
Lanes 1 - 4:
Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - BSA and Azide free (ab278046) at 1/1000 dilution

Lanes 1 - 4:
Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043) at 1/1000 dilution

Lane 1:

Wild-type A549 cell lysates at 20 µg

Lane 2:
Western blot - Human LAMP1 knockout A549 cell line (ab288919) at 20 µg

Lane 3:
Wild-type HCT 116 ab277289 cell lysates at 20 µg

Lane 4:
Western blot - Human LAMP1 knockout HCT116 cell line (ab289151) at 20 µg

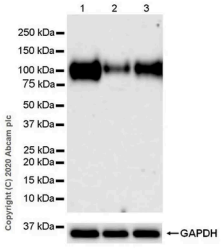
Secondary

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

Performed under reducing conditions.

Predicted band size: 45 kDa

Observed band size: 80-120 kDa



Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Western blot staining using rabbit Anti-LAMP1/CD107a antibody

Blocking and Diluting buffer: 5% NFDM/TBST
LAMP1 is a glycoprotein. The molecular weight observed is consistent with what has been described in the literature (PMID: 27061067, 15111122).

Exposure time: 3 minutes

All lanes:
Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043) at 1/1000 dilution

Lane 1:
Human kidney tissue lysate at 20 µg

Lane 2:
Human spleen tissue lysate at 20 µg

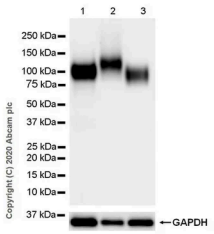
Lane 3:
Human colon cancer tissue lysate at 20 µg

Secondary

All lanes:
Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution

Predicted band size: 45 kDa

Observed band size: 110 kDa



Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Western blot staining using rabbit Anti-LAMP1/CD107a antibody

Blocking and Diluting buffer: 5% NFDM/TBST
LAMP1 is a glycoprotein. The molecular weight observed is consistent with what has been described in the literature (PMID: 27061067, 15111122).

Exposure time: 3 minutes

All lanes:
Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043) at 1/1000 dilution

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

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

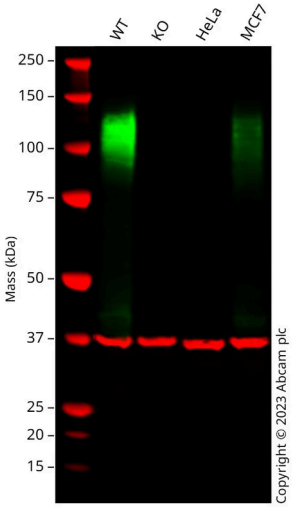
Lane 3:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 45 kDa

Observed band size: 110 kDa



Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043)

LAMP1/CD107a Western blot staining using rabbit Anti-LAMP1/CD107a antibody

Western blot: Anti-LAMP1 antibody [EPR24395-31] staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] (ab8245) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab278043 was shown to bind specifically to LAMP1. A band was observed at 100-120 kDa in wild-type HCT 116 cell lysates with no signal observed at this size in LAMP1 knockout cell line. To generate this image, wild-type and LAMP1 knockout HCT 116 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3% 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 IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - Lysosome Marker (ab278043) at 1/1000 dilution

Lane 1:
Wild-type HCT 116 cell lysate at 20 µg

Lane 2:
LAMP1 knockout HCT 116 cell lysate at 20 µg

Lane 3:
HeLa cell lysate at 20 µg

Lane 4:
MCF7 cell lysate at 20 µg

Performed under reducing conditions.

Observed band size: 100-120 kDa

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