abcam

ab278046

Anti-LAMP1/CD107a antibody [EPR24395-31] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR24395-31
Purification technique	Affinity purification Protein A
Concentration	1.031 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-

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	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

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	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab278046 is the carrier-free version of ab278043.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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

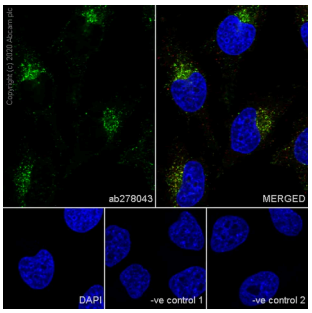
We do not recommend this combination. It is not covered by our product promise.

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.

9 product images



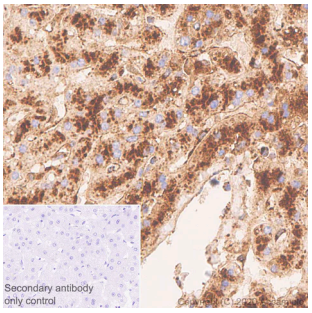
Immunocytochemistry/ Immunofluorescence - Anti-LAMP1/CD107a antibody [EPR24395-31] - BSA and Azide free (ab278046)

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

This data was developed using ab278043, the same antibody clone in a different buffer formulation.

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

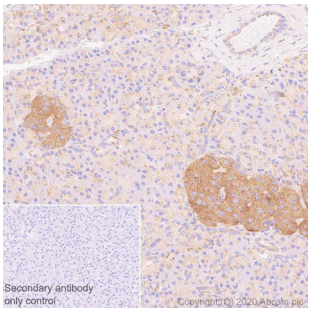


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [EPR24395-31] - BSA and Azide free (ab278046)

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

This data was developed using ab278043, the same antibody clone in a different buffer formulation.
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.



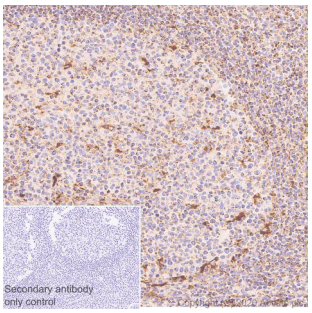
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [EPR24395-31] - BSA and Azide free (ab278046)

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

This data was developed using ab278043, the same antibody clone in a different buffer formulation.
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.

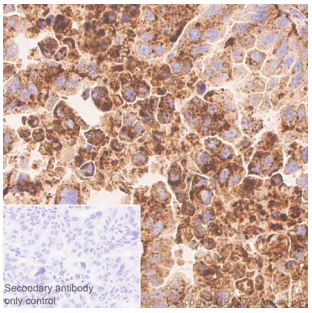


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [EPR24395-31] - BSA and Azide free (ab278046)

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

This data was developed using ab278043, the same antibody clone in a different buffer formulation.
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.

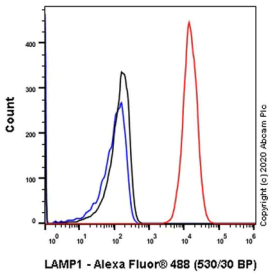


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [EPR24395-31] - BSA and Azide free (ab278046)

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

This data was developed using ab278043, the same antibody clone in a different buffer formulation.
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.

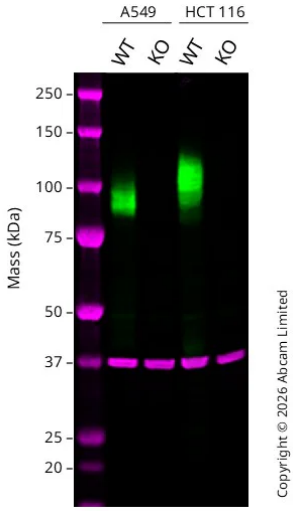


Flow Cytometry (Intracellular) - Anti-LAMP1/CD107a antibody [EPR24395-31] - BSA and Azide free (ab278046)

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

This data was developed using ab278043, the same antibody clone in a different buffer formulation.

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.



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Western blot - Anti-LAMP1/CD107a antibody [EPR24395-31] - BSA and Azide free (ab278046)

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

This data was developed using ab278043, the same antibody clone in a different buffer formulation.

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

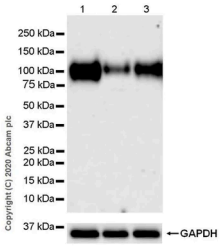
Secondary

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] - BSA and Azide free (ab278046)

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

This data was developed using ab278043, the same antibody clone in a different buffer formulation.
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

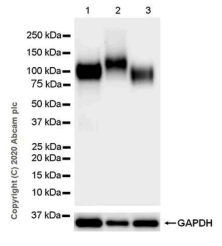
Lane 3:
Human colon cancer tissue lysate at 20 µg

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] - BSA and Azide free (ab278046)

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

This data was developed using ab278043, the same antibody clone in a different buffer formulation.
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

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