abcam

ab208943

Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker

Anti-LAMP1/CD107a antibody [EPR21026] (ab208943) is a rabbit monoclonal antibody detecting LAMP1/CD107a in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, IHC-Fr, ICC/IF**. Suitable for **Mouse**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 30 publications

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	EPR21026
Purification technique	Affinity purification Protein A
Specificity	In our lab we observe staining in multiple tissues (spleen, lung, kidney etc.) in IHC-P with ab208943, but a lack of staining on mouse brain. We have received feedback from other researchers, that they also do not see staining in mouse brain with this antibody. Therefore we do not recommend using this reagent, for work on mouse brain, in IHC-P. For further information on this please contact our Technical Support team who will be happy to help.
Concentration	0.62 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	1/100
Notes	Perform heat mediated antigen retrieval using sodium citrate buffer (pH 6.0).

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/500
Notes	Works well in IHC-P on multiple tissues, but does not work on mouse brain, in this application. 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:15121881). 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 (By similarity). Also plays an important role in NK-cells cytotoxicity (PubMed:23847195). Mechanistically, participates in cytotoxic granule movement to the cell surface and perforin trafficking to the lytic granule (By similarity). In addition, protects NK-cells from degranulation-associated damage induced by their own cytotoxic granule content (PubMed:23847195). Presents carbohydrate ligands to selectins (By similarity). Also implicated in tumor cell metastasis (PubMed:2676155).

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

Anti-LAMP1 antibody [EPR21026] (ab208943) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF, IHC-Fr, IHC-P, IP, WB in mouse samples.

Anti-LAMP1 antibody [EPR21026] (ab208943) has been cited over 31 times in peer reviewed journals and is trusted by the scientific community.

Abcams high quality manufacturing and validation processes ensure Anti-LAMP1 antibody [EPR21026] (ab208943) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

Anti-LAMP1 antibody [EPR21026] (ab208943) specifically detects LAMP1 (UniProt ID: P11438; Molecular weight: 42kDa) and is sold in 100 uL and 1 mL selling sizes.

Conjugation-ready, carrier free format available for antibody clone EPR21026 - ab225762.

Antibody clone EPR21026 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 647, Alexa Fluor® 555, Alexa Fluor® 594, Alexa Fluor® 568, PE (ab23737, ab355, ab32684, ab3282, ab314256).

Lysosomal-associated membrane protein 1 (LAMP1) is an essential lysosomal membrane protein that plays a crucial role in cellular processes such as waste degradation and autophagy regulation. It is a significant focus of research in neuroscience and cell biology due to its importance in maintaining cellular health. Changes in LAMP1 expression are associated with various diseases, including cancer, neurodegenerative disorders like Alzheimer's disease (AD), and lysosomal storage diseases. Studying LAMP1 provides valuable insights into the mechanisms of these diseases and the cellular dysfunctions involved, highlighting its critical role in understanding disease pathology.

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.

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

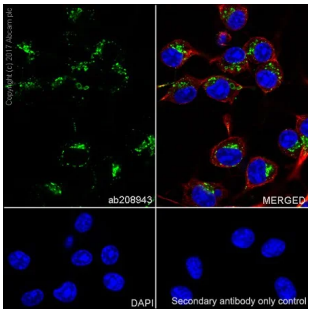
We do not recommend this combination. It is not covered by our product promise.

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.

11 product images

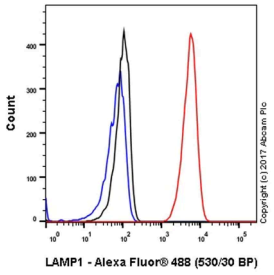


Immunocytochemistry/ Immunofluorescence - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

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

Immunofluorescent analysis of 100% methanol-fixed Neuro-2a (mouse neuroblastoma cell line) cells labeling LAMP1 with ab208943 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on Neuro-2a cell line.

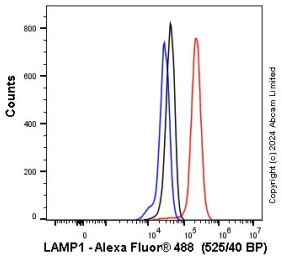
The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889), at 1/200 dilution (red).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methonol-permeabilized Neuro-2a (mouse neuroblastoma cell line) cell line labeling LAMP1 with ab208943 at 1/500 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077), at 1/2000 dilution was used as the secondary antibody.



Flow Cytometry (Intracellular) - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

LAMP1/CD107a Flow Cytometry (Intracellular) staining of NIH3T3 cells using rabbit Anti-LAMP1/CD107a antibody

Flow cytometry overlay histogram showing NIH3T3 cells stained with ab208943 (red line). The cells were fixed with 4% formaldehyde (10 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 min. The cells were incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab208943) (1x 10^6in 100µl at 0.2µg/ml (1/11000)) for 30min at 22°C.

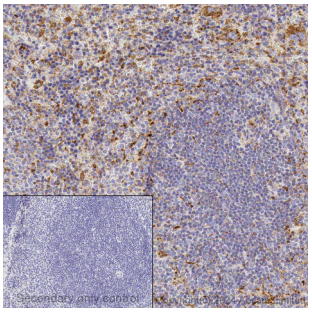
The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 for 30min at 22°C

Isotype control antibody (black line) was Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control 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 Blue laser (488nm) and 525/40 bandpass filter.

This antibody gave a positive signal in NIH3T3 Fixed with 80% methanol (5 min) / permeabilised with 0.1% PBS-Triton X-100 for 15 min under the same conditions.



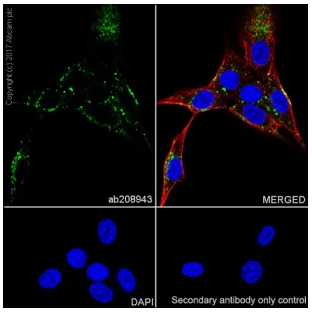
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

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

Immunohistochemical analysis of formalin fixed paraffin embedded mouse spleen labelling LAMP1 with ab208943 at a concentration of 0.1µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a ChromoMap DAB IHC Kit with anti-rabbit HQ, anti-HQ HRP detection. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins.

Anti-LAMP1 antibody [EPR21026] ab208943 was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.

Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual).



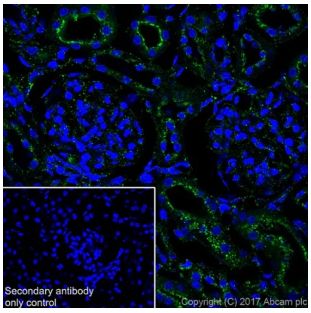
Immunocytochemistry/ Immunofluorescence - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

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

Immunofluorescent analysis of 100% methanol-fixed NIH/3T3 (mouse embryo fibroblast cell line) cells labeling LAMP1 with ab208943 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on NIH/3T3 cell line.
The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889), at 1/200 dilution (red).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

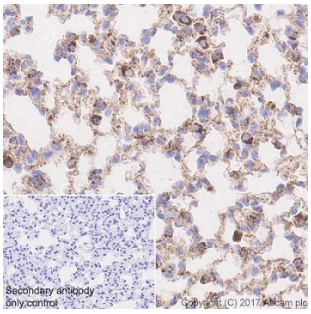
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Frozen sections) - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

LAMP1/CD107a Immunohistochemistry (Frozen sections) staining using rabbit Anti-LAMP1/CD107a antibody

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized mouse kidney tissue labeling LAMP1 with ab208943 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/1000 dilution (green). Cytoplasmic staining in the endothelial cells of glomeruli and epithelial cells of renal tubules (PMID: 23229015; PMID:23635510). The nuclear counter stain is DAPI (blue).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.



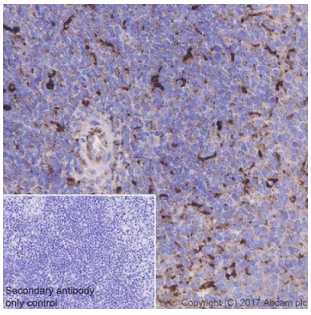
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

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

Immunohistochemical analysis of paraffin-embedded mouse lung tissue labeling LAMP1 with ab208943 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Granular cytoplasmic staining on mouse spleen was observed, performed on a Leica Biosystems BOND® RX instrument (PMID: 22008915). Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Note: BOND® is a registered trademark of Leica Biosystems Melbourne Pty Ltd.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



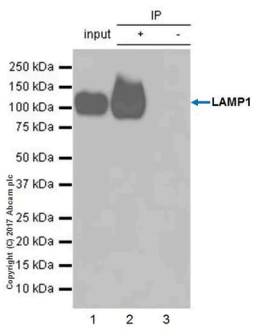
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

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

Immunohistochemical analysis of paraffin-embedded mouse spleen tissue labeling LAMP1 with ab208943 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Granular cytoplasmic staining on mouse spleen was observed, performed on a Leica Biosystems BOND® RX instrument (PMID: 22008915). Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Note: BOND® is a registered trademark of Leica Biosystems Melbourne Pty Ltd.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunoprecipitation - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

LAMP1 was immunoprecipitated from 0.35 mg of NIH/3T3 (mouse embryo fibroblast cell line) whole cell lysate with ab208943 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab208943 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.
Lane 1: NIH/3T3 whole cell lysate 10 µg (Input).

Lane 2: ab208943 IP in NIH/3T3 whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab208943 in NIH/3T3 whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

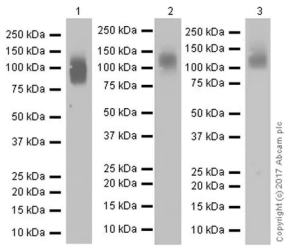
Exposure time: 1 second.

All lanes:
Immunoprecipitation - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

Developed using the ECL technique.

Predicted band size: 45 kDa

Observed band size: 90-120 kDa



Western blot - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

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

Exposure time : Lanes 1-2: 15 seconds; Lane 3: 5 seconds.

Blocking and dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943) at 1/1000 dilution

Lane 1:
Mouse lung lysate at 10 µg

Lane 2:
Mouse colon lysate at 10 µg

Lane 3:
Mouse liver lysate at 10 µg

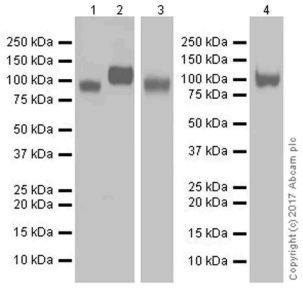
Secondary

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

Developed using the ECL technique.

Predicted band size: 45 kDa

Observed band size: 90-120 kDa



Western blot - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943)

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

Exposure time : Lanes 1-2: 3 minutes; Lane 3: 5 seconds; Lane 4: 10 seconds.
Blocking and dilution buffer: 5% NFDM/TBST.

The varying band sizes are due to different levels of glycosylation (PMID: 10212251, PMID: 26246576).

All lanes:
Western blot - Anti-LAMP1/CD107a antibody [EPR21026] - Lysosome Marker (ab208943) at 1/2000 dilution

Lane 1:
Neuro-2a (mouse neuroblastoma cell line) whole cell lysate at 20 µg

Lane 2:
RAW 264.7 (mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 20 µg

Lane 3:
Mouse kidney lysate at 20 µg

Lane 4:
NIH/3T3 (mouse embryo fibroblast cell line) whole cell lysate at 10 µg

Secondary

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

Developed using the ECL technique.

Predicted band size: 45 kDa

Observed band size: 90-120 kDa

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