abcam

ab25630

Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker

Anti-LAMP1/CD107a antibody [H4A3] (ab25630) is a mouse monoclonal antibody detecting LAMP1/CD107a in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human**.

- Over 280 publications
- Trusted since 2005

KO Validated

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 8.2 Constituents: 0.95% Sodium borate, 0.6% Boric Acid, 0.4% Sodium chloride
Form	Liquid
Clonality	Monoclonal
Clone number	H4A3
Purification technique	Affinity purification
Light chain type	kappa
Concentration	0.1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1 µg/mL
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

WB

Tested

Species	Human
Dilution info	1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	5-10 µg/mL
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

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	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Anti-LAMP1 antibody [H4A3] (ab25630) is a House Mouse Monoclonal antibody and is validated for use in Flow Cyt (Intra), ICC/IF, IHC-P, WB in human samples.

Anti-LAMP1 antibody [H4A3] (ab25630) has been cited over 285 times in peer reviewed journals and is trusted by the scientific community.

Abcams high quality validation processes ensure Anti-LAMP1 antibody [H4A3] (ab25630) has high sensitivity and specificity.

Anti-LAMP1 antibody [H4A3] (ab25630) has 23 independent reviews from customers.

Anti-LAMP1 antibody [H4A3] (ab25630) specifically detects LAMP1 (UniProt ID: P11279; Molecular weight: 42kDa) and is sold in 100 ug selling sizes.

Antibody clone H4A3 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 488 (ab187591).

Lysosomal-associated membrane protein 1 (LAMP1) is a crucial component of the lysosomal membrane, extensively studied in neuroscience and cell biology. It plays a significant role in lysosomal function, including the degradation of cellular waste and the regulation of autophagy. Alterations in LAMP1 expression are associated with various

diseases, such as cancer, neurodegenerative disorders like Alzheimer's disease (AD), and lysosomal storage diseases. Research on LAMP1 helps in understanding the pathology of these conditions and the underlying cellular dysfunction, highlighting its importance in the broader study of disease mechanisms.

Although there are publications stating this antibody works with Mouse species (PMID 18840681), and previous batches gave positive staining on murine cells, recent batches are failing to react with this species (from customer feedback). Further feedback using this antibody with Mouse tissues would be very welcome.
This product was changed from ascites to tissue culture supernatant on 3rd September 2018. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

REACH authorisation
Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.
It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

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.

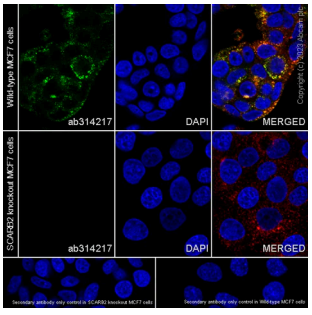
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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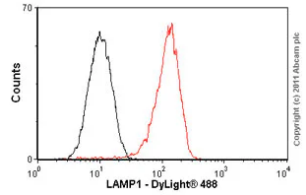
13 product images



Immunocytochemistry/ Immunofluorescence - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

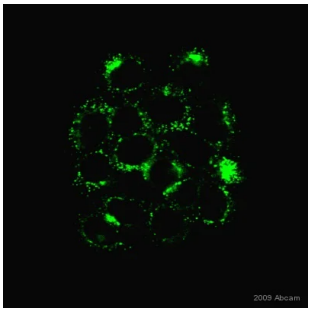
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized SCARB2 KO MCF7 (SCARB2 knockout human breast adenocarcinoma epithelial cell) cells labelling LIMPII with ab314217 at 1/50 (10.54 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2ug/ml dilution (Green). Confocal image showing no staining in SCARB2 KO MCF7 cells, and lysosomal staining in parental MCF7 cells.Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). ab25630 Anti-LAMP1 mouse monoclonal antibody was used to counterstain lysosomes at 1/200 0.2ug/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 2ug/ml dilution.



Flow Cytometry (Intracellular) - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

Overlay histogram showing Jurkat cells stained with ab25630 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab25630, 1/20 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in Jurkat cells fixed with methanol (5 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.

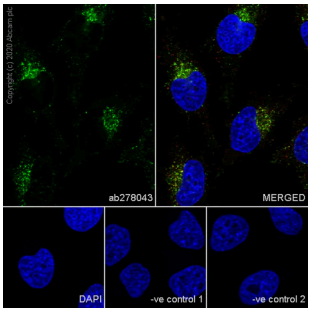


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Immunocytochemistry/ Immunofluorescence - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

ab25630 staining LAMP1 in human HaCaT keratinocytes by Immunocytochemistry/ Immunofluorescence. Cells were fixed with acetone, permeabilized with ice cold acetone and blocking with 4% PBS, 0.4% BSA and goat serum was performed for 16 hours at 4^0C. Samples were incubated with primary antibody (1/100: in 10% blocking solution in PBS) for 1 hour at 23^0C. An Alexa Fluor ® 680-conjugated goat polyclonal to mouse IgG was used at dilution at 1/200 as secondary antibody. Alexafluor-680 signal is pseudocolored green in the image.

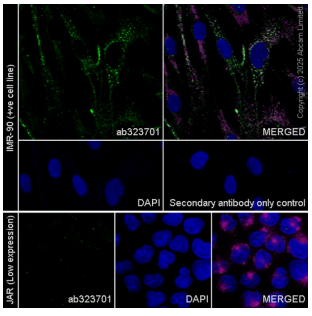


Immunocytochemistry/ Immunofluorescence - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

LAMP1/CD107a Immunocytochemistry/ Immunofluorescence staining of HeLa using mouse 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



Immunocytochemistry/ Immunofluorescence - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

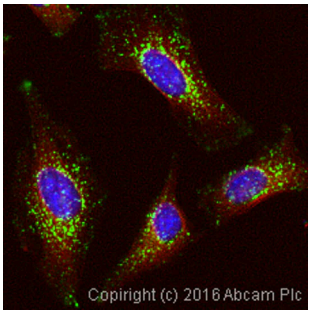
Immunofluorescent analysis of 100% methanol-fixed, 0.1% TritonX-100 permeabilized IMR-90 (human lung fibroblast) cells labelling IDUA with ab323701 at 1/50 (10.2 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2ug/ml dilution (Green).

Confocal image showing lysosome staining in IMR-90 cells(shown in green). The counterstain was observed in magenta. Nuclear DNA was labelled with DAPI (shown in blue).
Low expression: JAR.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab25630 Anti-LAMP1 mouse monoclonal antibody was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Magenta). 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 2ug/ml dilution.

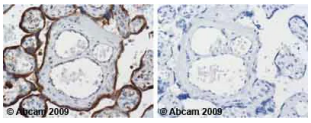
Counter stain secondary antibody only control: Secondary antibody is ab150115 Goat Anti-Mouse IgG H&L (Alexa Fluor® 647) preadsorbed at 1/1000 2ug/ml dilution.



Immunocytochemistry/ Immunofluorescence - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

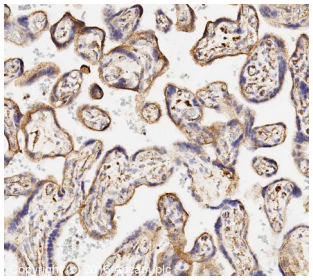
ab25630 stained Hela cells. The cells were 100% methanol fixed for 5 minutes and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Triton for 1h at room temperature to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with ab25630 at 5µg/ml and ab202272 (Rabbit monoclonal [EP1332Y] to alpha Tubulin - Microtubule Marker (Alexa Fluor® 594) – pseudo-colored red) overnight at +4°C. The secondary antibody (pseudo-colored green) was a Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed (ab150117) used at a 1/1000 dilution for 1h at room temperature. DAPI was used to stain the cell nuclei (pseudo-colored blue) at a concentration of 1.43µM for 1hour at room temperature.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

ab25630 staining Human normal placenta. Staining is localized to the cell membrane.
Left panel: with primary antibody at 1 ug/ml. Right panel: isotype control.
Sections were stained using an automated system DAKO Autostainer Plus , at room temperature. Sections were rehydrated and antigen retrieved with the Dako 3-in-1 AR buffers EDTA pH 9.0 in a DAKO PT Link. Slides were peroxidase blocked in 3% H2O2 in methanol for 10 minutes. They were then blocked with Dako Protein block for 10 minutes (containing casein 0.25% in PBS) then incubated with primary antibody for 20 minutes and detected with Dako Envision Flex amplification kit for 30 minutes. Colorimetric detection was completed with Diaminobenzidine for 5 minutes. Slides were counterstained with Haematoxylin and coverslipped under DePeX. Please note that for manual staining we recommend to optimize the primary antibody concentration and incubation time (overnight incubation), and amplification may be required.

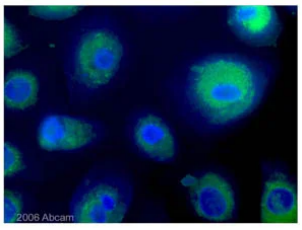


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

IHC image of LAMP1 staining in human placenta formalin fixed paraffin embedded tissue section*, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab25630, 1µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

* *Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre*

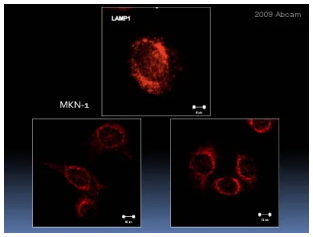


This image is courtesy of an anonymous customer review

Immunocytochemistry/ Immunofluorescence - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

ab25630 at 1/100 staining human Primary Gingival epithelial cells by ICC/IF. The cells were ixed with 4% paraformaldehyde, permeabilized with 0.5% saponin and then blocked overnight with 10% goat serum, 5% BSA. The cells were incubated with the antibody for 1 hour and then a FITC conjugated goat polyclonal antibody was used as the secondary. The cells were counterstaind with DAPI for the nucleus and Cell Tracker Blue for the cytoplasm.

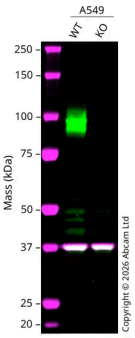


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Immunocytochemistry/ Immunofluorescence - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

ab25630 at 1/500 dilution staining LAMP1 in human gastric cancer cells by immunocytochemistry/ immunofluorescence. Sections were methanol fixed, permeabilized in 0.5% Triton X-100 prior to blocking in 10% NGS/1% BSA for 1 hour at 25°C and then incubated with ab25630 for 2 hours at 25°C. Alexa fluor® 594 mouse polyclonal to mouse Ig, diluted 1/600, was used as the secondary antibody.



Western blot - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

Western blot: Anti-LAMP1 antibody [H4A3] - Lysosome Marker ab25630 staining at 1/1000 dilution, shown in green; Rabbit anti GAPDH ab181602 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 90 kDa in Wild-type A549 cell lysates with no signal observed at this size in LAMP1 knockout A549 cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% 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-Mouse 800CW and Goat anti-Rabbit 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630) 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

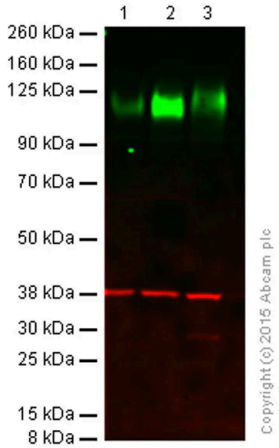
Secondary

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

Performed under reducing conditions.

Predicted band size: 90 kDa

Observed band size: 45 kDa



Western blot - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using Licor blocking buffer before being incubated with ab25630 (1/1000) overnight at 4°C. Antibody binding was detected using ab9485 (rabbit anti-GAPDH); at a 1/10,000 dilution for 1hr at room temperature and then imaged using the Licor Odyssey CLx.
All lanes:
Western blot - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630) at 1/1000 dilution

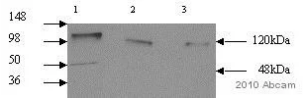
Lane 1:
Jurkat cell lysate at 20 µg

Lane 2:
Jurkat membrane lysate at 20 µg

Lane 3:
MCF-7 cell lysate at 20 µg

Predicted band size: 45 kDa

Observed band size: 115-120 kDa



This image is courtesy of a customer review submitted by Ruma Raha-Chowdhury, University Of Cambridge, United Kingdom

Western blot - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630)

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

WB image of LAMP1 (ab25630) on Mouse liver. Lanes were loaded 20 ug of Liver tissue lysate Lane 1. iron treated 3 month old liver, lane 2. untreated 3 month old liver, Lane 3. one month old untreated liver.
All lanes:
Western blot - Anti-LAMP1/CD107a antibody [H4A3] - Lysosome Marker (ab25630) at 1/10000 dilution

Lane 1:
Iron treated 3 month old liver at 20 µg

Lane 2:
Untreated 3 month old liver at 20 µg

Lane 3:
One month old untreated liver

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 45 kDa

Observed band size: 120 kDa, 48 kDa

Exposure time: 5min

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