abcam

ab25245

Anti-LAMP1/CD107a antibody [1D4B] - Lysosome Marker

Anti-LAMP1/CD107a antibody [1D4B] (ab25245) is a rat monoclonal antibody detecting LAMP1/CD107a in **Flow Cytometry (Intra), IHC-P**. Suitable for **Human**.

- Over 210 publications
- Trusted since 2005

Key facts

Isotype	IgG2a
Host species	Rat
Storage buffer	pH: 8.2 Constituents: 100% Borate buffered saline
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing Lamp1 protein. The exact immunogen used to generate this antibody is proprietary information. Database link P11438
Clone number	1D4B
Specificity	Murine CD107a/LAMP1 (Mr 110-140 kDa with a core protein of Mr ~40 kDa)
Light chain type	kappa
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	10 µg/mL
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells
Notes	ab18450 - Rat monoclonal IgG2a, 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 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 [1D4B] (ab25245) is a rat monoclonal antibody and is validated for use in Flow Cyt (Intra), IHC-P in mouse samples.

Anti-LAMP1 antibody [1D4B] (ab25245) has been cited over 211 times in peer reviewed journals and is trusted by the scientific community.

Abcam's high quality validation processes ensure Anti-LAMP1 antibody [1D4B] (ab25245) has high sensitivity and specificity.

Anti-LAMP1 antibody [1D4B] (ab25245) has 16 independent reviews from customers.

Anti-LAMP1 antibody [1D4B] (ab25245) specifically detects LAMP1 (UniProt ID: P11279; Molecular weight: 42kDa) and is sold in 100 µg selling sizes.

Antibody clone 1D4B is also available pre-conjugated to FITC for your convenience (ab24871).

LAMP1 (Lysosomal Associated Membrane Protein 1) is a protein integral to the lysosomal membrane, playing a significant role in lysosomal stability and cellular waste management. It is commonly used as a lysosome membrane marker in research. Alterations in LAMP1 expression have been implicated in several diseases, such as cancer, where it may aid in metastasis, and neurodegenerative diseases like Alzheimer's disease, where lysosomal dysfunction is a contributing factor.

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

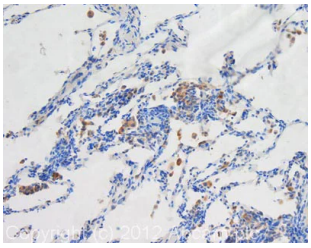
We do not recommend this combination. It is not covered by our product promise.

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.

3 product images

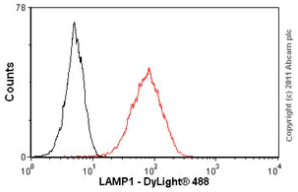


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LAMP1/CD107a antibody [1D4B] - Lysosome Marker (ab25245)

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

IHC image of LAMP1 staining in human lung formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol B. 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 ab25245, 10µg/ml, for 15 mins at room temperature. A goat anti-rat biotinylated secondary antibody was used to detect the primary, and visualized using an HRP conjugated ABC system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

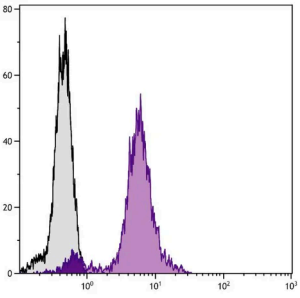
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Flow Cytometry (Intracellular) - Anti-LAMP1/CD107a antibody [1D4B] - Lysosome Marker (ab25245)

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

Overlay histogram showing Jurkat cells stained with ab25245 (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 (ab25245, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rat IgG (H+L) (ab98386) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rat IgG2a [aRTK2758] (ab18450, 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.



Flow Cytometry (Intracellular) - Anti-LAMP1/CD107a antibody [1D4B] - Lysosome Marker (ab25245)

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

Flow cytometric overlay histogram showing Mouse MΨ cells stained with Anti-LAMP1 antibody [1D4B] - Lysosome Marker (ab25245) followed by Anti-Rat IgG2a-FITC.

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