abcam

ab25447

Biotin Anti-LAMP2 antibody [H4B4] - Lysosome Marker

Anti-LAMP2 antibody [H4B4] conjugated to Biotin - suitable for BL, flow cytometry, IHC-Fr, IP, and reacts with human samples. Clone [H4B4] is a mouse monoclonal antibody cited in 18 publications.

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Key facts

Isotype	IgG1
Host species	Mouse
Conjugation	Biotin
Storage buffer	pH: 7.4 Preservative: 0.1% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Clone number	H4B4
Purity	IgG fraction

Reactivity data

Flow Cyt

Expected

Species	Human
Dilution info	10 µL for 10^6 Cells
Notes	-

IHC-Fr

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

IP

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

BL

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information LAMP2

Function

Lysosomal membrane glycoprotein which plays an important role in lysosome biogenesis, lysosomal pH regulation and autophagy (PubMed:11082038, PubMed:18644871, PubMed:24880125, PubMed:27628032, PubMed:36586411, PubMed:37390818, PubMed:8662539). 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). Plays an important role in chaperone-mediated autophagy, a process that mediates lysosomal degradation of proteins in response to various stresses and as part of the normal turnover of proteins with a long biological half-live (PubMed:11082038, PubMed:18644871, PubMed:24880125, PubMed:27628032, PubMed:36586411, PubMed:8662539). Functions by binding target proteins, such as GAPDH, GPX4, NLRP3 and MLLT11, and targeting them for lysosomal degradation (PubMed:11082038, PubMed:18644871, PubMed:24880125, PubMed:36586411, PubMed:8662539). In the chaperone-mediated autophagy, acts downstream of chaperones, such as HSPA8/HSC70, which recognize and bind substrate proteins and mediate their recruitment to lysosomes, where target

proteins bind LAMP2 (PubMed:36586411). Plays a role in lysosomal protein degradation in response to starvation (By similarity). Required for the fusion of autophagosomes with lysosomes during autophagy (PubMed:27628032). Cells that lack LAMP2 express normal levels of VAMP8, but fail to accumulate STX17 on autophagosomes, which is the most likely explanation for the lack of fusion between autophagosomes and lysosomes (PubMed:27628032). Required for normal degradation of the contents of autophagosomes (PubMed:27628032). Required for efficient MHC class II-mediated presentation of exogenous antigens via its function in lysosomal protein degradation; antigenic peptides generated by proteases in the endosomal/lysosomal compartment are captured by nascent MHC II subunits (PubMed:15894275, PubMed:20518820). Is not required for efficient MHC class II-mediated presentation of endogenous antigens (PubMed:20518820). Isoform LAMP-2C. Modulates chaperone-mediated autophagy. Decreases presentation of endogenous antigens by MHCII. Does not play a role in the presentation of exogenous and membrane-derived antigens by MHCII. (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

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	LAMP2 also known as CD107b is an important protein found in the lysosomal membrane. It plays a significant role in lysosome function facilitating autophagy and the degradation of cellular debris. LAMP2 proteins are expressed in most tissues especially in tissues with high lysosomal activity like the liver kidney and heart. The LAMP2 molecule has a molecular weight of approximately 45 kDa. Researchers frequently use LAMP2 staining and LAMP2 marker to study its cellular localization and expression levels.

Biological function summary	LAMP2 is essential for the normal fusion of lysosomes with autophagosomes. This process ensures the recycling of cellular components and maintenance of cellular homeostasis. LAMP2 acts in conjunction with other members of the lysosome-associated membrane protein family LAMP1 and LAMP3 forming part of a larger complex. This interaction is fundamental in managing the degradation pathways within the cell supporting processes such as lipid metabolism and protein turnover.
Pathways	The activity of LAMP2 is critical in the autophagic and degradation pathways within the cell. It particularly interacts in the autophagy-lysosome pathway where it aids the clearance of damaged organelles and protein aggregates. LAMP2 interaction with proteins such as the autophagy-related protein LC3 helps this degradation process. Additionally LAMP2 plays a role in endocytic pathways linking it to proteins involved in vesicle trafficking and membrane fusion.
Associated diseases and disorders	Mutations or deficiencies in LAMP2 are associated with Danon disease a type of lysosomal storage disorder. Patients with Danon disease exhibit symptoms such as cardiomyopathy skeletal myopathy and intellectual disabilities. LAMP2 is also implicated in other lysosomal disorders with a connection to the malfunction of autophagy processes. Its dysfunction is often linked with proteins responsible for cellular degradation affecting the normal homeostatic balance and leading to the accumulation of autophagic substrates.

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.

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