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LAMP-2 Antibody

Catalog # ASC10364

Product Information

Application	WB, ICC, E
Primary Accession	P17047
Other Accession	NP_054701, 31543108
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	45681
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	LAMP-2 antibody can be used for the detection of LAMP-2 by Western blot at 1 - 2 □g/mL. Antibody can also be used for immunocytochemistry starting at 10 □g/mL.

Additional Information

Gene ID	16784
Other Names	LAMP-2 Antibody: Mac3, LGP-B, CD107b, Lamp-2, Lamp II, Lamp-2a, Lamp-2b, Lamp-2c, Lysosome-associated membrane glycoprotein 2, CD107 antigen-like family member B, LAMP-2, lysosomal-associated membrane protein 2
Target/Specificity	Lamp2;
Reconstitution & Storage	LAMP-2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	LAMP-2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	Lamp2
Synonyms	Lamp-2
Function	Lysosomal membrane glycoprotein which plays an important role in lysosome biogenesis, lysosomal pH regulation and autophagy (PubMed:10972293, PubMed:30718432). 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). 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:30718432). Functions by binding target proteins, such as GAPDH, GPX4, NLRP3 and MLLT11, and targeting them for lysosomal degradation (PubMed:30718432). 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 (By similarity). Plays a role in lysosomal protein degradation in response to starvation (PubMed:27628032). 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:10972293, PubMed:12221139). 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 (By similarity). Is not required for efficient MHC class II-mediated presentation of endogenous antigens (By similarity).
Cellular Location	Lysosome membrane; Single-pass type I membrane protein {ECO:0000255|PROSITE-ProRule:PRU00740}. Endosome membrane {ECO:0000250|UniProtKB:P13473}; Single-pass type I membrane protein {ECO:0000255|PROSITE-ProRule:PRU00740}. Cytoplasmic vesicle, autophagosome membrane. Cell membrane {ECO:0000250|UniProtKB:P13473}; Single-pass type I membrane protein {ECO:0000255|PROSITE-ProRule:PRU00740}. Note=This protein shuttles between lysosomes, endosomes, and the plasma membrane {ECO:0000250|UniProtKB:P13473}
Tissue Location	Detected in liver and kidney (at protein level). Detected in liver and kidney.

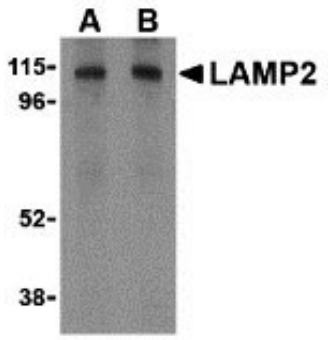
Background

LAMP-2 Antibody: Autophagy, the process of bulk degradation of cellular proteins through an autophagosomic-lysosomal pathway is important for normal growth control and may be defective in tumor cells. It is involved in the preservation of cellular nutrients under starvation conditions as well as the normal turnover of cytosolic components and is negatively regulated by TOR (Target of rapamycin). LAMP-2, a highly glycosylated protein associated with the lysosome, has recently been shown to be important in autophagy as mice deficient in this protein failed to convert autophagic vacuoles into vacuoles leading to impaired degradation of long-lived proteins. This correlates with the finding that human LAMP-2 deficiency causing Danon's disease is associated with the accumulation of autophagic material in striated myocytes. LAMP-2 exists in multiple isoforms.

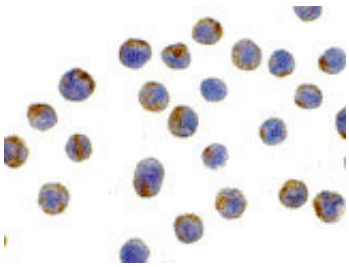
References

Gozuacik D and Kimchi A. Autophagy as a cell death and tumor suppressor mechanism. Oncogene. 2004; 23:2891-906.
Kisen GO, Tessitore L, Costelli P, et al. Reduced autophagic activity in primary rat hepatocellular carcinoma and ascites hepatoma cells. Carcinogenesis1993; 14:2501-5.
Kamada Y, Funakoshi T, Shintani T, et al. Tor-mediated induction of autophagy via Apg1 protein kinase complex. J. Cell. Biol.2000; 150:1507-13.
Granger BL, Green SA, Gabel CA, et al. Characterization and cloning of the lgp110, a lysosomal glycoprotein from mouse and rat cells. J. Biol. Chem.1990; 265:12036-43.

Images



Western blot analysis of LAMP-2 in HepG2 cell lysate with LAMP-2 antibody at (A) 1 and (B) 2 µg/mL.



Immunocytochemistry of LAMP-2 in HepG2 cells with LAMP-2 antibody at 10 µg/mL.

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