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LAMP-2 Antibody (CT)

Rabbit Polyclonal Antibody

Catalog # ABV10817

Specification

LAMP-2 Antibody (CT) - Product Information

Application	**WB, ICC, E**
Primary Accession	P13473
Reactivity	**Human, Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG1**
Calculated MW	**44961**

LAMP-2 Antibody (CT) - Additional Information

Gene ID 3920

Positive Control	**Western Blot: HepG2 cell lysate** **Immunocytochemistry: HepG2 cells**
Application & Usage	**Western Blot: 1 - 2 µg/ml,** **Immunocytochemistry: 10 µg/ml, ELISA.** **However, the optimal conditions should be determined individually.**

Other Names
LAMP-2, Lysosome associated membrane protein 2

Target/Specificity
LAMP-2

Antibody Form
Liquid

Appearance
Colorless liquid

Formulation
100 µg (1 mg/ml) in 1X PBS containing 0.02% sodium azide.

Handling
The antibody solution should be gently mixed before use.

Reconstitution & Storage
-20 °C

Background Descriptions

Precautions
LAMP-2 Antibody (CT) is for research use only and not for use in diagnostic or therapeutic

procedures.

LAMP-2 Antibody (CT) - Protein Information

Name LAMP2

Function
Lysosomal membrane glycoprotein which plays an important role in lysosome biogenesis, lysosomal pH regulation and autophagy (PubMed:8662539, PubMed:11082038, PubMed:18644871, PubMed:24880125, PubMed:27628032, PubMed:36586411, 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). 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:8662539, PubMed:11082038, PubMed:18644871, PubMed:24880125, PubMed:27628032, PubMed:36586411). Functions by binding target proteins, such as GAPDH, NLRP3 and MLLT11, and targeting them for lysosomal degradation (PubMed:8662539, PubMed:11082038, PubMed:18644871, PubMed:24880125, PubMed:36586411). 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:20518820, PubMed:15894275). Is not required for efficient MHC class II-mediated presentation of endogenous antigens (PubMed:20518820).

Cellular Location

Lysosome membrane {ECO:0000255|PROSITE- ProRule:PRU00740, ECO:0000269|PubMed:11082038, ECO:0000269|PubMed:17897319, ECO:0000269|PubMed:18644871, ECO:0000269|PubMed:2912382}; Single-pass type I membrane protein {ECO:0000255|PROSITE-ProRule:PRU00740, ECO:0000269|PubMed:17897319} Endosome membrane; Single-pass type I membrane protein {ECO:0000255|PROSITE-ProRule:PRU00740, ECO:0000269|PubMed:17897319}. Cell membrane; Single-pass type I membrane protein {ECO:0000255|PROSITE-ProRule:PRU00740, ECO:0000269|PubMed:17897319}. Cytoplasmic vesicle, autophagosome membrane {ECO:0000250|UniProtKB:P17047}. Note=This protein shuttles between lysosomes, endosomes, and the plasma membrane

Tissue Location
Isoform LAMP-2A is highly expressed in placenta, lung and liver, less in kidney and pancreas, low in brain and skeletal muscle (PubMed:7488019, PubMed:26856698). Isoform LAMP-2B is detected in spleen, thymus, prostate, testis, small intestine, colon, skeletal muscle, brain, placenta, lung, kidney, ovary and pancreas and liver (PubMed:7488019, PubMed:26856698). Isoform LAMP-2C is detected in small intestine, colon, heart, brain, skeletal muscle, and at lower levels in kidney and placenta (PubMed:26856698).

LAMP-2 Antibody (CT) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

LAMP-2 Antibody (CT) - Images

LAMP-2 Antibody (CT) - Background

Autophagy, the process of bulk degradation of cellular proteins thro µgh 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.