

Product Information

Anti-LAMP2

Produced in Rabbit, Affinity Isolated Antibody

Product Number **L 0668**

Product Description

Anti-LAMP2, is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acid residues 404-415 of mouse LAMP2 with N-terminal added cysteine, conjugated to KLH. The corresponding sequence is identical in rat and differs by two amino acids in human. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-LAMP2 recognizes mouse and rat LAMP2. Applications include immunoblotting (~110 kDa) and immunofluorescence. Detection of the LAMP2 band by immunoblotting is specifically inhibited by the immunizing peptide.

Lysosome-associated membrane protein 2 (LAMP2), also termed Igp110, is a heavily glycosylated lysosomal membrane protein of ~110 kDa. It consists of a 45 kDa core polypeptide with O-linked and 17 asparagine-linked oligosaccharide side chains in mouse cells. This heavy glycosylation of LAMP2 may be important to protect the lysosomal membrane from proteolytic enzymes within lysosomes.¹ LAMP2 protein contains a leader sequence, a large intraluminal portion consisting of 2 domains separated by a hinge region rich in proline and threonine, a 20-amino acid trans-membrane region, and a short cytoplasmic tail containing the lysosomal membrane targeting signal. Each domain of the intraluminal portion contains 4 cysteine residues that form 2 disulfide bonds.² It has been suggested that the cytoplasmic tail of LAMP2 serves as a receptor for the selective uptake of cytosolic proteins by lysosomes.^{3, 4}

LAMP2 is ubiquitously expressed and highly conserved. It localizes mainly to lysosomes although a small portion is detected on the cell surface.^{1, 4} LAMP2 is critical for autophagy. LAMP2-deficient mice show accumulation of autophagic vacuoles and cardiomyopathy. Inactivation of LAMP2 by RNA interference caused inhibition of fusion between autophagic vacuoles and lysosomes.⁵ LAMP2 deficiency in human causes Danon disease, which is associated with the accumulation of autophagic material and glycogen in skeletal and cardiac muscle cells.^{4, 6}

Anti-LAMP2 may be used as a lysosomal marker.

Reagent

The antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~1.0 mg/mL

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

By immunoblotting, a working antibody concentration of 2.5-5 µg/mL is recommended using a whole extract of rat NRK cells, applying a chemiluminescent detection reagent.

By indirect immunofluorescence, a working antibody concentration of 10-20 µg/mL is recommended using rat NRK and mouse NIH-3T3 cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Granger, B. L., et al., J. Biol. Chem., **265**, 12036-12043 (1990).
2. Fukuda, M., J. Biol. Chem., **266**, 21327-21330 (1991).

3. Cuervo, A. M. and Dice, J.F., Science, **273**, 501-503 (1996).
4. Tanaka, Y., et al., Nature, **406**, 902-906 (2000).

5. Gonzalez-Polo, R.A., et al., J Cell Sci., **118**, 3091-3102 (2005).
6. Nishino, I., et al., Nature, **406**, 906-910 (2000).

KAA/ST 10/05

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