

Anti-LAMP2

Catalog# SMC-141C/D

Size: 25/100µg

This product is for *in vitro* research use only and is not intended for use in humans or animals

Product	Rat Anti-Lysosome-Associated Membrane Protein 2
Clone	GL2A7
Immunogen	Purified preparation of mouse liver lysosomal membranes
Host and Subclass	Rat monoclonal, IgG ₁
Cited Applications	IP (1), ICC (1), IF
Specificity	Recommended for use in ICC> The antibody will label the presumptive lysosomes and late endosomes in cells that have been permeabilized with saponin
Species cross-reactivity	Mouse, Rabbit
Format	Protein G purified in PBS pH 7.4, 0.09% azide, in 50% glycerol
Concentration and working dilution	1.0mg/mL, suggested 1:500-1:1000 for ICC
Storage and stability	-20°C; 1 year+; shipped on cold packs or ambient

Scientific Background

Lysosome associated membrane proteins, or LAMP1 and LAMP2, are major constituents of the lysosomal membrane. The two have closely related structures, with 37% sequence homology (2). They are both transmembrane glycoproteins that are localized primarily in lysosomes and late endosomes. Newly synthesized molecules are mostly transported from the trans-Golgi network directly to endosomes and then to lysosomes. A second pathway involves the lamps being delivered from the Golgi to the cell surface, and then along the endocytic pathway to the lysosomes. A minor pathway involves transport via the plasma membrane (3).

LAMP2 has also been detected at the plasma membrane of cells, as well as in cells that secrete lysosomal hydrolases. A study in the developmental expresses patterns of membrane LAMP2 transcripts indicate a

possible involvement of this protein in cell-cell or cell-extracellular matrix interaction, and appear to reflect tissue and cell type specific roles of lysosomes during morphogenesis (4).

Upon stimulation, a rapid translocation of intracellular LAMPs to the cell membrane is dependent on a carboxyl-terminal tyrosine based motif (YXXI) (5). This stimulation has also been shown to have an associated release of histamine, leukotriene C 9§) and prostaglandin D 9@), which shows that LAMP1 and LAMP2 are activation markers for normal mast cells (5). They have also been linked to the inflammatory response in that they promote adhesion of human peripheral blood mononuclear cells (PBMC) to vascular endothelium, and therefore possibly the adhesion of PBMC to the site of inflammation (6). LAMP2 has also been shown to be critical for autophagy, in conversion of early autophagic vacuoles to vacuoles which rapidly degrade their content (7).

Selected References

1. Granger B.L., *et al.* (1990) *J. Biol. Chem.* 265: 12036-12043.
2. Furuta K., *et al.* (1999) *EMBO J.* 17(5):1304-14.
3. Rohrer J., *et al.* (1996) *J Cell Biol.* 132(4): 565-76.
4. Lichter-Konecki U., *et al* (1999) *Differentiation* 65(1): 43-58.
5. Grutzkau A., *et al.* (2004) *Cytometry A.* 61(1): 62-68.
6. Kannan K., *et al.* (1996) *Cell Immunol.* 171: 10-19.
7. Tanaka Y., *et al.* (2000) *Nature* 406: 902-906.

Certificate of Analysis

1.0 µg/ml of SMC-141 was sufficient for detection of LAMP2 in 20µg of rat liver microsomes by ECL immunoblot analysis using Goat anti-mouse IgG:HRP as the secondary antibody

Material Safety Data Sheet

Anti-LAMP2 (Monoclonal Antibody) SMC-141

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The below information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. StressMarq shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalogue for additional terms and conditions of sale.

Hazardous Ingredients

The physical, chemical and toxicological properties of these components have not been fully investigated. It is recommended that all laboratory personnel follow standard laboratory safety procedures when handling this product. Safety procedures should include wearing OSHA approved safety glasses, gloves and protective clothing. Direct physical contact with this product should be avoided.

<u>Known Hazardous Components</u>	<u>CAS Number</u>	<u>Percent</u>
Sodium Azide	26628-22-8	0.09

Physical Data

This product consists of rat immunoglobulin in PBS containing 0.09% azide in 50% glycerol shipped on gel packs. The physical properties of this product have not been investigated thoroughly.

Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

Toxicological Properties

May be harmful by inhalation, ingestion, or skin absorption. The toxicological properties of this product have not been investigated thoroughly. Exercise due caution.

Preventative Measures

Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.

Spill and Leak Procedures

Observe all federal, state and local environmental regulations.

- Wear protective equipment.
- Absorb on sand or vermiculite and place in closed containers for disposal.
- Dispose or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

First Aid Measures

- If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
- In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. If a rash or other irritation develops, call a physician.
- If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
- In case of eye contact, flush with copious amounts of water for at least 15 minutes while separating the eyelids with fingers. Call a physician.