abcam

ab125006

Anti-LMAN1 antibody [EPR6979]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR6979
Purification technique	Affinity purification Protein A
Concentration	0.1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/500
Notes	Heat up to 98°C, below boiling, and then let cool for 10-20 min. **For unpurified use at 1/100 - 1/250.**

Species	Rat
Dilution info	1/500
Notes	Heat up to 98°C, below boiling, and then let cool for 10-20 min. **For unpurified use at 1/100 - 1/250.**

Species	Human
Dilution info	1/500
Notes	Heat up to 98°C, below boiling, and then let cool for 10-20 min. **For unpurified use at 1/100 - 1/250.**

ICC/IF

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.

Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information LMAN1

Function	Mannose-specific lectin. May recognize sugar residues of glycoproteins, glycolipids, or glycosylphosphatidyl inositol anchors and may be involved in the sorting or recycling of proteins, lipids, or both. The LMAN1-MCFD2 complex forms a specific cargo receptor for the ER-to-Golgi transport of selected proteins.

Storage

Shipped at conditions	Conditional Ambient
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

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	LMAN1 also known as ERGIC-53 or lectin mannose-binding 1 is a protein involved in the transport and quality control of glycoproteins. It has a mass of approximately 53 kDa. LMAN1 primarily expresses in the endoplasmic reticulum-Golgi intermediate compartment (ERGIC) and is important for efficient cargo sorting and proper folding. It functions by binding to specific carbohydrate moieties on glycoproteins aiding their transport between the ER and Golgi apparatus.
Biological function summary	LMAN1 functions significantly within a protein complex known as the LMAN1-MCFD2 complex. It serves an essential role as a cargo receptor for glycoproteins particularly those with particular mannose-rich domains influencing their secretion and stability. This protein complex is integral in maintaining protein homeostasis and cellular physiology by ensuring the correct sorting and transport of glycoproteins from the ER to the Golgi.
Pathways	LMAN1 significantly participates in the secretory pathway and quality control mechanisms in the cell. It interacts with proteins such as MCFD2 to mediate the transport of specific glycoproteins like α1-antitrypsin through the secretory pathway. This pathway is important for the secretion of a variety of proteins and disruptions can lead to disorders associated with improper protein folding and trafficking.
Associated diseases and disorders	Defects in LMAN1 can lead to bleeding disorders such as combined coagulation factor V and VIII deficiency. The protein's dysfunction impairs the transport of coagulation factors disrupting their secretion. Additionally proteins like MCFD2 work closely with LMAN1 in this context as mutations in either protein can cause a similar deficiency highlighting the significant role of LMAN1 in maintaining normal hemostatic processes.

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

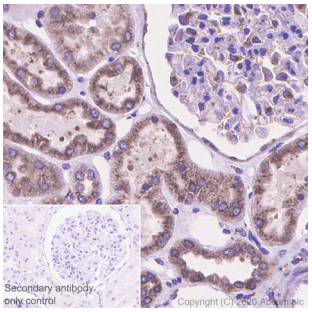
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

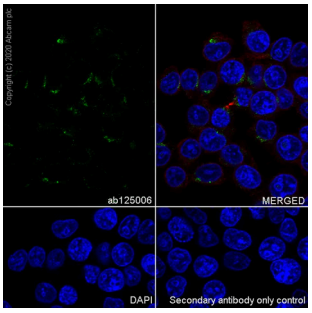
8 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LMAN1 antibody [EPR6979] (ab125006)

LMAN1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-LMAN1 antibody

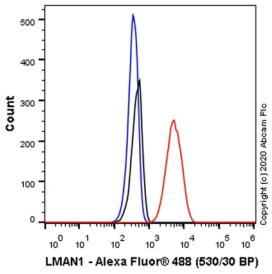
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human kidney tissue sections labeling LMAN1 with Purified ab125006 at 1/500 dilution (0.21 µg/mL). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunocytochemistry/ Immunofluorescence - Anti-LMAN1 antibody [EPR6979] (ab125006)

LMAN1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-LMAN1 antibody

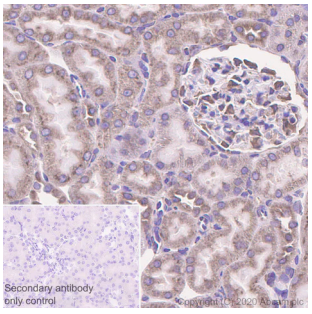
Immunocytochemistry analysis of 293T (Human embryonic kidney epithelial cell) cells labeling LMAN1 with Purified ab125006 at 1/50 dilution (2 µg/mL). Cells were fixed in 100% Methanol and permeabilized with None. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 dilution (2.5 µg/mL). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 dilution (2 µg/mL). DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Flow Cytometry (Intracellular) - Anti-LMAN1 antibody [EPR6979] (ab125006)

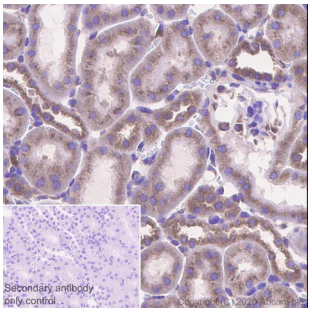
LMAN1 Flow Cytometry (Intracellular) staining using rabbit Anti-LMAN1 antibody

Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling LMAN1 with Purified ab125006 at 1/20 dilution (10 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LMAN1 antibody [EPR6979] (ab125006)

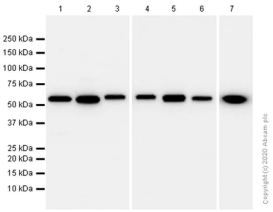
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat kidney tissue sections labeling LMAN1 with Purified ab125006 at 1/500 dilution (0.21 µg/mL). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LMAN1 antibody [EPR6979] (ab125006)

LMAN1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-LMAN1 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse kidney tissue sections labeling LMAN1 with Purified ab125006 at 1/500 dilution (0.21 µg/mL). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Western blot - Anti-LMAN1 antibody [EPR6979] (ab125006)

All lanes:
Western blot - Anti-LMAN1 antibody [EPR6979] (ab125006) at 1/1000 dilution

Lane 1:
Jurkat (Human T cell leukemia T lymphocyte) whole cell lysate at 20 µg

Lane 2:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
Mouse spleen lysate at 20 µg

Lane 4:
Mouse heart lysate at 20 µg

Lane 5:
Rat spleen lysate at 20 µg

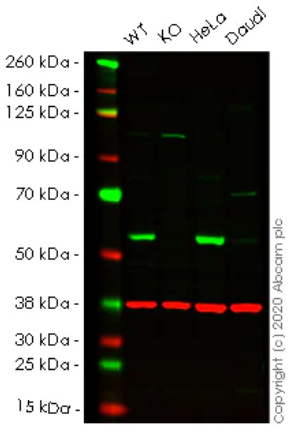
Lane 6:
Rat heart lysate at 20 µg

Lane 7:
HEK-293 (Human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 58 kDa



Western blot - Anti-LMAN1 antibody [EPR6979] (ab125006)

LMAN1 Western blot staining using rabbit Anti-LMAN1 antibody

Lanes 1-4: Merged signal (red and green). Green - ab125006 observed at 55 kDa. Red - loading control ab8245 observed at 37 kDa.
ab125006 Anti-LMAN1 antibody [EPR6979] was shown to specifically react with Protein ERGIC-53 in wild-type HEK-293T cells. Loss of signal was observed when knockout cell line ab266248 (knockout cell lysate ab257505) was used. Wild-type and Protein ERGIC-53 knockout samples were subjected to SDS-PAGE. ab125006 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°CC at 1 in 1000 Dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-LMAN1 antibody [EPR6979] (ab125006) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
Western blot - Human LMAN1 knockout HEK-293T cell lysate (ab257505) at 20 µg

Lane 3:
HeLa cell lysate at 20 µg

Lane 4:
Daudi cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 58 kDa

Observed band size: 55 kDa

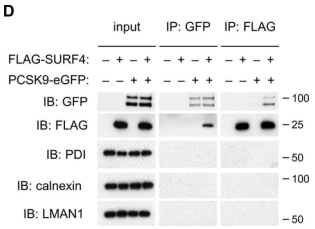


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Western blot - Anti-LMAN1 antibody [EPR6979] (ab125006)

LMAN1 western blot using anti-LMAN1 antibody [EPR6979] ab125006. Publication image and figure legend from Emmer, B., Hesketh, G. G., et al., 2018, Elife, PubMed 30251625.

ab125006 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab125006 please see the product overview.

SURF4 localizes to the early secretory pathway where it physically interacts with PCSK9.(A) Immunofluorescence of FLAG-SURF4 together with markers of the ER (calnexin), ERGIC (LMAN1), and Golgi (GM130). Scale bar = 10 µm. (B) Quantification of colocalization (n = 8 cells analyzed for each combination of antibody staining). (C) Spectral counts for SURF4 in streptavidin-purified eluates from cells expressing various BirA* fusion proteins. (D) Immunoprecipitations were performed using antibodies directed against FLAG or GFP from lysates of cells expressing FLAG-SURF4, PCSK9-eGFP, both, or neither. Error bars represent standard deviations.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.