

LIMA1 Antibody

Catalog # ASC11877

Specification

LIMA1 Antibody - Product Information

Application Primary Accession Other Accession Reactivity Host Clonality Isotype Calculated MW

WB, IHC, IF <u>O9UHB6</u> <u>NP_001107018</u>, <u>165905589</u> Human Rabbit Polyclonal IgG Predicted: 50, 66, 84 kDa

Observed: 65 kDa KDa LIMA1 antibody can be used for detection of LIMA1 by Western blot at 0.5 - 1 µg/ml. Antibody can also be used for immunohistochemistry starting at 5 µg/mL. For immunofluorescence start at 20 µg/mL.

Application Notes

LIMA1 Antibody - Additional Information

Gene ID Target/Specificity 51474

LIMA1; LIMA1 antibody is human specific. At least four isoforms of LIMA1 are known to exist; this antibody will only detect the three largest isoforms.

Reconstitution & Storage

LIMA1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year.

Precautions

LIMA1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

LIMA1 Antibody - Protein Information

Name LIMA1 (<u>HGNC:24636</u>)

Function

Actin-binding protein involved in actin cytoskeleton regulation and dynamics. Increases the number and size of actin stress fibers and inhibits membrane ruffling. Inhibits actin filament depolymerization. Bundles actin filaments, delays filament nucleation and reduces formation of branched filaments (PubMed:12566430). Acts as a negative regulator of primary cilium formation (PubMed:32496561). Plays a role in cholesterol homeostasis. Influences plasma cholesterol levels through regulation of intestinal cholesterol absorption. May act as a scaffold protein by regulating NPC1L1 transportation, an essential protein for cholesterol absorption, to the plasma membrane by



recruiting MYO5B to NPC1L1, and thus facilitates cholesterol uptake (By similarity).

Cellular Location

Cytoplasm. Cell junction, focal adhesion. Cytoplasm, cytoskeleton. Cytoplasm, cytoskeleton, stress fiber. Cell membrane {ECO:0000250|UniProtKB:Q9ERG0}. Cell projection, ruffle. Note=Expressed in the brush border membrane of the small intestine and colocalizes with NPC1L1 and MYO5B (PubMed:29880681). Colocalizes with PXN at focal adhesions in mesangial cells (PubMed:24694988). Colocalizes with actin stress fibers in quiescent cells. PDGF stimulation induced disassembly of stress fibers and formation of peripheral and dorsal ruffles, where LIMA1 is relocalized (By similarity). {ECO:0000250|UniProtKB:Q9ERG0, ECO:0000269|PubMed:24694988, ECO:0000269|PubMed:29880681}

Tissue Location

Highly expressed in placenta, kidney, pancreas, prostate, ovary, spleen and heart. Also detected in lung, liver, brain, skeletal muscle, thymus, testis and intestine. Not detected in leukocytes. Isoform Beta expressed generally at very low levels Isoform Alpha abundant in epithelial cells from mammary gland, prostate and in normal oral keratinocytes. Low levels in aortic endothelial cells and dermal fibroblasts. Not detectable in myocardium

LIMA1 Antibody - Protocols

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

- <u>Western Blot</u>
- <u>Blocking Peptides</u>
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

LIMA1 Antibody - Images



Western blot analysis of LIMA1 in human colon tissue lysate with LIMA1 antibody at (A) 0.5 and (B) $1 \mu g/ml$.





Immunohistochemistry of LIMA1 in human colon tissue with LIMA1 antibody at 5 μ g/mL.



Immunofluorescence of LIMA1 in human colon tissue with LIMA1 antibody at 20 µg/mL.

LIMA1 Antibody - Background

The Lim domain and actin-binding protein 1 (LIMA1) is cytoskeleton-associated protein that inhibits actin filament depolymerization and cross-links filaments in bundles and is downregulated in some cancer cell lines (1,2). LIMA1 is also a key molecule linking the cadherin-catenin complex to the actin cytoskeleton (3). Recent studies have shown that EGF activates ERK1/2-dependent phosphorylation, ubiquitination and degradation of LIMA1, leading to increased invasiveness and metastasis of metastatic prostate cancer models (4).

LIMA1 Antibody - References

Maul RS and Chang DD. EPLIN, epithelial protein lost in neoplasm. Oncogene 1999; 18:7838-41. Maul RS, Song Y, Amann KJ, et al. EPLIN regulates actin dynamics by cross-linking and stabilizing filaments. J. Cell Biol. 2003; 160:399-407.

Abe K and Takeichi M. EPLIN mediates linkage of the cadherin catenin complex to F-actin and stabilizes the circumferential actin belt. Proc. Natl. Acad. Sci. USA 2008; 105:13-9.

Zhang S, Wang X, Iqval S, et al. Epidermal growth factor promotes protein degradation of epithelial protein lost in neoplasm (EPLIN), a putative metastasis suppressor, during epithelial-mesenchymal transition. J. Biol. Chem. 2013; 288:1469-79.