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LIMA1 Antibody

Catalog # ASC11877

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q9UHB6
Other Accession	NP_001107018, 165905589
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	85226
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	LIMA1 antibody can be used for detection of LIMA1 by Western blot at 0.5 - 1 g/ml. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	51474
Other Names	LIM domain and actin-binding protein 1, Epithelial protein lost in neoplasm, LIMA1, EPLIN, SREBP3
Target/Specificity	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℃ for three months and -20℃, stable for up to one year.
Precautions	LIMA1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	LIMA1 (HGNC:24636)
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, PubMed:33999101). 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. Cell projection, lamellipodium. 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). Localized at the lamellipodia, just behind lamellipodia actin ruffles (PubMed:33999101) {ECO:0000250|UniProtKB:Q9ERG0, ECO:0000269|PubMed:24694988, ECO:0000269|PubMed:29880681, ECO:0000269|PubMed:33999101}
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

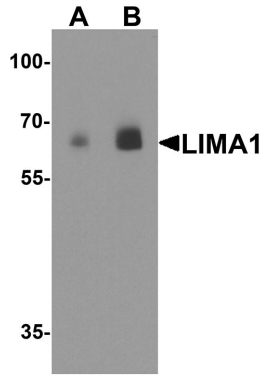
Background

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).

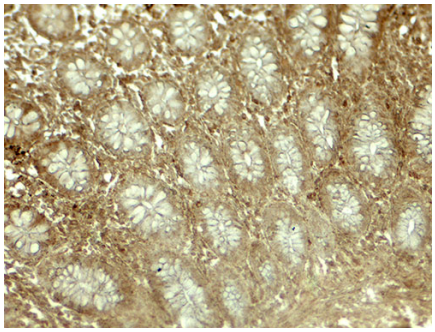
References

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.

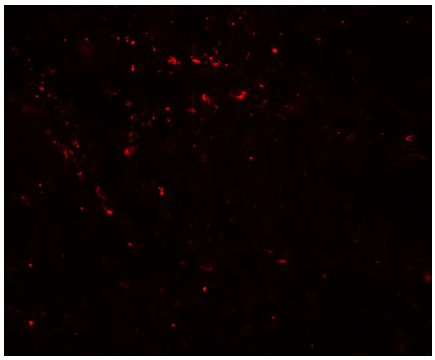
Images



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



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



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