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Myosin light chain kinase Antibody

Rabbit mAb
Catalog # AP90454

Product Information

Application	WB, IHC, IF, FC, ICC, IHF
Primary Accession	Q15746
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Other Names	KMLS; KRP; MLCK; MYLK; myosin light chain kinase, smooth muscle and non-muscle isozymes; myosin light polypeptide kinase; telokin;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	210715

Additional Information

Dilution	WB 1:500~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200 FC 1:50
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human Myosin light chain kinase
Description	Regulates actin-myosin interaction through a non-kinase activity. Phosphorylates PTK2B/PYK2 and myosin light-chains. Involved in the inflammatory response (e.g. apoptosis, vascular permeability, leukocyte diapedesis), cell motility and morphology, airway hyperreactivity and other activities relevant to asthma. Required for tonic airway smooth muscle contraction that is necessary for physiological and asthmatic airway resistance.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	MYLK (HGNC:7590)
Synonyms	MLCK, MLCK1, MYLK1
Function	Calcium/calmodulin-dependent myosin light chain kinase implicated in smooth muscle contraction via phosphorylation of myosin light chains (MLC) (PubMed:11113114). Also regulates actin-myosin interaction through a non-kinase activity (PubMed:11113114). Phosphorylates PTK2B/PYK2 and myosin light-chains (PubMed:11113114, PubMed:18587400). Involved in the inflammatory response (e.g. apoptosis, vascular permeability, leukocyte diapedesis), cell motility and morphology, airway hyperreactivity and other activities relevant to asthma (PubMed:20139351). Required for tonic airway smooth muscle contraction that is necessary for physiological and asthmatic

airway resistance (By similarity). Necessary for gastrointestinal motility (By similarity). Implicated in the regulation of endothelial as well as vascular permeability, probably via the regulation of cytoskeletal rearrangements (By similarity). In the nervous system it has been shown to control the growth initiation of astrocytic processes in culture and to participate in transmitter release at synapses formed between cultured sympathetic ganglion cells (PubMed:20375339). Critical participant in signaling sequences that result in fibroblast apoptosis (PubMed:20453870). Plays a role in the regulation of epithelial cell survival (PubMed:16723733). Required for epithelial wound healing, especially during actomyosin ring contraction during purse-string wound closure (PubMed:15825080). Mediates RhoA-dependent membrane blebbing (PubMed:20181817). Triggers TRPC5 channel activity in a calcium-dependent signaling, by inducing its subcellular localization at the plasma membrane (PubMed:16284075). Promotes cell migration (including tumor cells) and tumor metastasis (PubMed:18710790, PubMed:19826488). PTK2B/PYK2 activation by phosphorylation mediates ITGB2 activation and is thus essential to trigger neutrophil transmigration during acute lung injury (ALI) (PubMed:18587400). May regulate optic nerve head astrocyte migration (PubMed:20375339). Probably involved in mitotic cytoskeletal regulation (PubMed:15020676). Regulates tight junction probably by modulating ZO-1 exchange in the perijunctional actomyosin ring (By similarity). Mediates burn-induced microvascular barrier injury; triggers endothelial contraction in the development of microvascular hyperpermeability by phosphorylating MLC (By similarity). Essential for intestinal barrier dysfunction (By similarity). Mediates Giardia spp.-mediated reduced epithelial barrier function during giardiasis intestinal infection via reorganization of cytoskeletal F- actin and tight junctional ZO-1 (By similarity). Necessary for hypotonicity-induced Ca(2+) entry and subsequent activation of volume- sensitive organic osmolyte/anion channels (VSOAC) in cervical cancer cells (PubMed:11976941). Responsible for high proliferative ability of breast cancer cells through anti-apoptosis (PubMed:20453870).

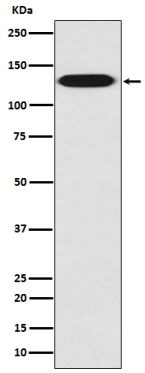
Cellular Location

Cytoplasm. Cell projection, lamellipodium. Cleavage furrow. Cytoplasm, cytoskeleton, stress fiber. Note=Localized to stress fibers during interphase and to the cleavage furrow during mitosis

Tissue Location

Smooth muscle and non-muscle isozymes are expressed in a wide variety of adult and fetal tissues and in cultured endothelium with qualitative expression appearing to be neither tissue- nor development-specific. Non-muscle isoform 2 is the dominant splice variant expressed in various tissues. Telokin has been found in a wide variety of adult and fetal tissues. Accumulates in well differentiated enterocytes of the intestinal epithelium in response to tumor necrosis factor (TNF).

Images



Western blot analysis of myosin light chain kinase expression in HUVEC cell lysate.

Image not found : 202311/AP90454-IHC.jpg

Immunohistochemical analysis of paraffin-embedded human colon, using Myosin light chain kinase Antibody.

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