

Anti-MYLK antibody



Description	Rabbit polyclonal to MYLK.
Model	STJ94307
Host	Rabbit
Reactivity	Human, Mouse, Rat
Applications	ELISA, WB
Immunogen	Synthesized peptide derived from human MYLK
Immunogen Region	1670-1750 aa, Internal
Gene ID	4638
Gene Symbol	MYLK
Dilution range	WB 1:500-1:2000ELISA 1:5000
Specificity	MYLK Polyclonal Antibody detects endogenous levels of MYLK protein.
Tissue Specificity	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).
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).

Protein Name	Myosin light chain kinase, smooth muscle MLCK smMLCK Kinase-related protein KRP Telokin Myosin light chain kinase, smooth muscle, deglutamylated form
Molecular Weight	200 kDa
Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:75900MIM:600922
Alternative Names	Myosin light chain kinase, smooth muscle MLCK smMLCK Kinase-related protein KRP Telokin Myosin light chain kinase, smooth muscle, deglutamylated form
Function	Calcium/calmodulin-dependent myosin light chain kinase implicated in smooth muscle contraction via phosphorylation of myosin light chains (MLC). Also 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. Necessary for gastrointestinal motility. Implicated in the regulation of endothelial as well as vascular permeability, probably via the regulation of cytoskeletal rearrangements. 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. Critical participant in signaling sequences that result in fibroblast apoptosis. Plays a role in the regulation of epithelial cell survival. Required for epithelial wound healing, especially during actomyosin ring contraction during purse-string wound closure. Mediates RhoA-dependent membrane blebbing. Triggers TRPC5 channel activity in a calcium-dependent signaling, by inducing its subcellular localization at the plasma membrane. Promotes cell migration (including tumor cells) and tumor metastasis. PTK2B/PYK2 activation by phosphorylation mediates ITGB2 activation and is thus essential to trigger neutrophil transmigration during acute lung injury (ALI). May regulate optic nerve head astrocyte migration. Probably involved in mitotic cytoskeletal regulation. Regulates tight junction probably by modulating ZO-1 exchange in the perijunctional actomyosin ring. Mediates burn-induced microvascular barrier injury; triggers endothelial contraction in the development of microvascular hyperpermeability by phosphorylating MLC. Essential for intestinal barrier dysfunction. Mediates Giardia spp.-mediated reduced epithelial barrier function during giardiasis intestinal infection via reorganization of cytoskeletal F-actin and tight junctional ZO-1. Necessary for hypotonicity-induced Ca(2+) entry and subsequent activation of volume-sensitive organic osmolyte/anion channels (VSOAC) in cervical cancer cells. Responsible for high proliferative ability of

breast cancer cells through anti-apoptosis.

Cellular Localization

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

**Post-translational
Modifications**

Can probably be down-regulated by phosphorylation. Tyrosine phosphorylation by ABL1 increases kinase activity, reverses MLCK-mediated inhibition of Arp2/3-mediated actin polymerization, and enhances CTTN-binding. Phosphorylation by SRC at Tyr-464 and Tyr-471 promotes CTTN binding. The C-terminus is deglutamylated by AGTPBP1/CCP1, AGBL1/CCP4 and AGBL4/CCP6, leading to the formation of Myosin light chain kinase, smooth muscle, deglutamylated form. The consequences of C-terminal deglutamylation are unknown . Acetylated at Lys-608 by NAA10/ARD1 via a calcium-dependent signaling; this acetylation represses kinase activity and reduces tumor cell migration.

St John's Laboratory Ltd

F +44 (0)207 681 2580

T +44 (0)208 223 3081

W <http://www.stjohnslabs.com/>

E info@stjohnslabs.com