SANTA CRUZ BIOTECHNOLOGY, INC.

MYLK (H-195): sc-25428

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Ca^{2+}/calmodulin-dependent protein kinases (CaM kinases) are a structurally related subfamily of serine/threonine kinases that includes CaMKI, CaMKII, CaMKIV and myosin light chain kinases (MYLK, also designated MLCK). The MYLK kinases phosphorylate myosin regulatory light chains to catalyze myosin interaction with actin filaments resulting in contractile activity. Non-muscle, smooth muscle and skeletal/cardiac muscle MYLK isoforms exist. The MYLK gene (also designated MYLK1) encodes both smooth muscle and non-muscle isoforms as well as telokin, a small C-terminal isoform expressed only in smooth muscle with the capacity to stabilize unphosphorylated myosin filaments. Multiple transcript variants are described for the MYLK gene. Smooth-muscle and non-muscle MYLK isoforms are expressed in a wide variety of adult and fetal tissues. The skeletal/cardiac muscle isoforms of MYLK are encoded by a separate gene, MYLK2 (also designated skMLCK). MYLK appears to be a target for PAKs (p21-activated kinases). PAK1 interaction with MYLK results in a decrease in MYLK activity and myosin light chain phosphorylation.

REFERENCES

1. Roush, C.L., et al. 1988. Isolation of the cDNA encoding rat skeletal muscle Myosin light chain kinase. Sequence and tissue distribution. J. Biol. Chem. 263: 10510-10516.
2. Haribabu, B., et al. 1995. Human calcium-calmodulin dependent protein kinase I: cDNA cloning, domain structure and activation by phosphorylation at threonine-177 by calcium-calmodulin dependent protein kinase I kinase. EMBO J. 14: 3679-3686.
3. Potier, M.C., et al. 1995. The human myosin light chain kinase (MLCK) from hippocampus: cloning, sequencing, expression, and localization to 3qcen-q21. Genomics 29: 562-570.
4. Garcia, J.G., et al. 1997. Myosin light chain kinase in endothelium: molecular cloning and regulation. Am. J. Respir. Cell. Mol. Biol. 16: 489-494.
5. Sanders, L.C., et al. 1999. Inhibition of myosin light chain kinase by p21-activated kinase. Science 283: 2083-2085.

CHROMOSOMAL LOCATION

Genetic locus: MYLK (human) mapping to 3q21.1; Mylk (mouse) mapping to 16 B3.

SOURCE

MYLK (H-195) is a rabbit polyclonal antibody raised against amino acids 1720-1914 mapping at the C-terminus of MYLK of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

MYLK (H-195) is recommended for detection of all MYLK isoforms (including telokin, non-muscle, and smooth-muscle isoforms) of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with MYLK2.

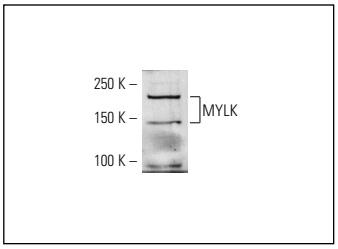
MYLK (H-195) is also recommended for detection of all MYLK isoforms (including telokin, non-muscle and smooth-muscle isoforms) in additional species, including equine and porcine.

Suitable for use as control antibody for MYLK siRNA (h): sc-35941, MYLK siRNA (m): sc-35942, MYLK shRNA Plasmid (h): sc-35941-SH, MYLK shRNA Plasmid (m): sc-35942-SH, MYLK shRNA (h) Lentiviral Particles: sc-35941-V and MYLK shRNA (m) Lentiviral Particles: sc-35942-V.

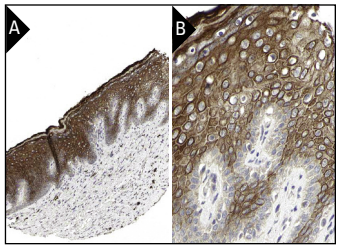
Molecular Weight of MYLK isoforms: 210/135 kDa.

Positive Controls: A-10 cell lysate: sc-3806 or BC_3H1 cell lysate: sc-2299.

DATA



MYLK (H-195): sc-25428. Western blot analysis of MYLK expression in BC_3H1 whole cell lysate.



MLCK (H-195): sc-25428. Immunoperoxidase staining of formalin fixed, paraffin-embedded human vulva/anal tissue showing cytoplasmic staining of surface epithelial cells at low (**A**) and high (**B**) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Butler, S.M., et al. 2011. Contributions of VEGF to age-dependent transmural gradients in contractile protein expression in ovine carotid arteries. Am. J. Physiol., Cell Physiol. 301: C653-C666.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.