SANTA CRUZ BIOTECHNOLOGY, INC.

# p-MYLK (Tyr 464)-R: sc-17182-R

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. Kitani, T., et al. 1994. cDNA cloning and expression of human calmodulin-dependent protein kinase IV. J. Biochem. 115: 637-640.
3. 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.
4. Tombes, R.M., et al. 1995. $G_1$ cell cycle arrest apoptosis are induced in NIH/3T3 cells by KN-93, an inhibitor of CaMK-II (the multifuncitonal $Ca^{2+}$/CaM kinase). Cell Growth Diff. 6: 1063-1070.
5. Hama, N., et al. 1995. Calcium/calmodulin-dependent protein kinase II down-regulates both calcineurin and protein kinase c-mediated pathways for cytokine gene transcription in human T cells. J. Exp. Med. 181: 1217-1222.
6. 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.
7. Birukov, K.G., et al. 2001. Differential regulation of alternatively spliced endothelial cell Myosin light chain kinase isoforms by p60Src. J. Biol. Chem. 276: 8567-8573.


## CHROMOSOMAL LOCATION

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

## STORAGE

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

## SOURCE

p-MYLK (Tyr 464)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Tyr 464 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.

Blocking peptide available for competition studies, sc-17182 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

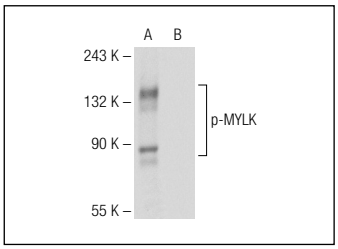
p-MYLK (Tyr 464)-R is recommended for detection of Tyr 464 phosphorylated MYLK of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Molecular Weight of p-MYLK: 210/135 kDa.

Positive Controls: smooth muscle + $Ca^{2+}$/calmodulin or MIA PaCa-2 cell lysate: sc-2285.

## DATA




p-MYLK (Tyr 464)-R: sc-17182-R. Western blot analysis of MYLK phosphorylation in untreated (**A**) and lambda protein phosphatase (sc-200312A) treated (**B**) MIA PaCa-2 whole cell lysates.

## 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.