

MYLK4 (C-13): sc-168681

BACKGROUND

The Ca²⁺/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 (MYLKs). 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. MYLK4 (myosin light chain kinase family member 4), also known as sugen kinase 85 (SGK085), is a 388 amino acid protein that exists as 2 alternatively spliced isoforms. MYLK4 catalyzes the conversion of ATP to ADP and contains one protein kinase domain. The gene encoding MYLK4 maps to human chromosome 6p25.2 and mouse chromosome 13 A3.2.

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.
6. Lazar, V., et al. 1999. A single human myosin light chain kinase gene (MLCK; MYLK). *Genomics* 57: 256-267.
7. Watterson, D.M., et al. 2000. Analysis of the kinase-related protein gene found at human chromosome 3q21 in a multi-gene cluster: organization, expression, alternative splicing, and polymorphic marker. *J. Cell. Biochem.* 75: 481-491.
8. Walker, L.A., et al. 2001. Site-specific phosphorylation and point mutations of telokin modulate its Ca²⁺-desensitizing effect in smooth muscle. *J. Biol. Chem.* 276: 24519-24524.

CHROMOSOMAL LOCATION

Genetic locus: MYLK4 (human) mapping to 6p25.2; Mylk4 (mouse) mapping to 13 A3.2.

SOURCE

MYLK4 (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MYLK4 of human origin.

STORAGE

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

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-168681 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MYLK4 (C-13) is recommended for detection of MYLK4 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other MYLK family members.

MYLK4 (C-13) is also recommended for detection of MYLK4 in additional species, including equine, canine and avian.

Suitable for use as control antibody for MYLK4 siRNA (h): sc-95396, MYLK4 siRNA (r): sc-270336, MYLK4 shRNA Plasmid (h): sc-95396-SH, MYLK4 shRNA Plasmid (r): sc-270336-SH, MYLK4 shRNA (h) Lentiviral Particles: sc-95396-V and MYLK4 shRNA (r) Lentiviral Particles: sc-270336-V.

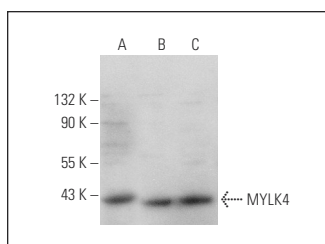
Molecular Weight of MYLK4: 45 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, NAMALWA cell lysate: sc-2234 or BJAB whole cell lysate: sc-2207.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



MYLK4 (C-13): sc-168681. Western blot analysis of MYLK4 expression in Raji (A), NAMALWA (B) and BJAB (C) whole cell lysates.

RESEARCH USE

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