

MYLK4 (G-13): sc-168682

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 two 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

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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. and Garcia, J.G. 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.
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CHROMOSOMAL LOCATION

Genetic locus: Mylk4 (mouse) mapping to 13 A3.2.

STORAGE

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

SOURCE

MYLK4 (G-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MYLK4 of mouse 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-168682 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MYLK4 (G-13) is recommended for detection of MYLK4 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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.

Molecular Weight of MYLK4: 45 kDa.

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) 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.

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.