SANTA CRUZ BIOTECHNOLOGY, INC.

MYLK2 (MY-21): sc-58803

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myosin, the major component of thick muscle filaments, is a long asymmetric molecule containing a globular head and a long tail. Activation of smooth and cardiac muscle primarily involves pathways which increase calcium and Myosin phosphorylation resulting in contraction. Myosin in vertebrate striated muscle is composed of two heavy chains and four light chains. There are two distinct types of light chains: the phosphorylatable, regulatory or MLC2 type; and the nonphosphorylatable, alkali or MLC1 and MLC3 types. Myosin light chain phosphatase acts to regulate muscle contraction by dephosphorylating activated Myosin light chain. The role of Myosin alkali light chains in vertebrate skeletal muscle is poorly understood, although alkali light chains in smooth muscle may be involved with the active site of Myosin. Several isoforms of Myosin alkali light chains have been identified; each is associated with different muscle types and is encoded by a family of Myosin light chain genes. Human Myosin light chain has application as a cardiac marker. The human MLC1 gene maps to the same region in which the IDH1 (isocitrate dehydrogenase) gene is located. The MLC1 locus is closely linked to IDH1 on chromosome 1 in mouse, thus indicating that this is a conserved linkage.

REFERENCES

1. Barton, P.J. and Buckingham, M.E. 1985. The myosin alkali light chain proteins and their genes. Biochem. J. 231: 249-261.
2. Seidel, U., et al. 1987. The complete nucleotide sequences of cDNA clones coding for human myosin light chains 1 and 3. Nucleic Acids Res. 15: 4989.
3. Cohen-Haguenauer, O., et al. 1988. Assignment of the human fast skeletal muscle myosin alkali light chains gene (MLC1F/MLC3F) to 2q 32.1-2qter. Hum. Genet. 78: 65-70.
4. Castaneda, F., et al. 1990. Perineal abscess after prostatic urethroplasty with balloon catheter: report of a case. Radiology 174: 49-50.
5. Katoh, H., et al. 1992. Development of an immunoradiometric assay kit for ventricular myosin light chain I with monoclonal antibodies. Clin. Chem. 38: 170-171.
6. Sanbe, A., et al. 1999. Abnormal cardiac structure and function in mice expressing nonphosphorylatable cardiac regulatory myosin light chain 2. J. Biol. Chem. 274: 21085-21094.
7. Davis, J.S., et al. 2001. The overall pattern of cardiac contraction depends on a spatial gradient of myosin regulatory light chain phosphorylation. Cell 107: 631-641.
8. Yamashita, H., et al. 2003. Myosin light chain isoforms modify force-generating ability of cardiac myosin by changing the kinetics of Actin-myosin interaction. Cardiovasc. Res. 60: 580-588.
9. Bicer, S. and Reiser, P.J. 2004. Myosin light chain 1 isoforms in slow fibers from global and orbital layers of canine rectus muscles. Invest. Ophthalmol. Vis. Sci. 45: 138-143.

CHROMOSOMAL LOCATION

Genetic locus: MYLK2 (human) mapping to 20q11.21.

SOURCE

MYLK2 (MY-21) is a mouse monoclonal antibody raised against lens membranes of chicken origin.

PRODUCT

Each vial contains 100 µl ascites containing IgM with < 0.1% sodium azide.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

APPLICATIONS

MYLK2 (MY-21) is recommended for detection of MYLK2 of human, avian, bovine and porcine origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:2000) and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:100-1:400).

Suitable for use as control antibody for MYLK2 siRNA (h): sc-72063, MYLK2 shRNA Plasmid (h): sc-72063-SH and MYLK2 shRNA (h) Lentiviral Particles: sc-72063-V.

Molecular Weight of MYLK2: 79 kDa.

SELECT PRODUCT CITATIONS

1. Fürst, R., et al. 2008. Atrial natriuretic peptide protects against histamine-induced endothelial barrier dysfunction *in vivo*. Mol. Pharmacol. 74: 1-8.
2. Barfod, E.T., et al. 2011. Myosin light chain kinase and Src control membrane dynamics in volume recovery from cell swelling. Mol. Biol. Cell 22: 634-650.

RESEARCH USE

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

PROTOCOLS

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