SANTA CRUZ BIOTECHNOLOGY, INC.

MYH (TH81): sc-101334

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myosin is a highly conserved, ubiquitously expressed protein that interacts with Actin to generate the force for cellular movements. Conventional Myosins are hexameric proteins consisting of two heavy chain subunits, a pair of non-phosphorylatable light chain subunits and a pair of phosphorylatable light chain subunits. Three general classes of Myosin have been cloned: smooth muscle Myosins, striated muscle Myosins and non-muscle Myosins. Contractile activity in smooth muscle is regulated by the calcium/calmodulin-dependent phosphorylation of Myosin light chain (MLC) by Myosin light chain kinase. Myosin heavy chains, which are encoded by the MYH gene family, contain Actin-activated ATPase activity which generates the motor function of Myosin. Myosin heavy chains were initially isolated from a human fetal skeletal muscle and are the major determinant in the speed of contraction of skeletal muscle. Various isoforms of Myosin heavy chains are differentially expressed depending on the functional activity of the muscle.

REFERENCES

1. Nagai, R., et al. 1989. Vertebrate smooth muscle Myosin heavy chains (MHCs) exist as two isoforms with molecular masses of 204 and 200 kDa (MHC204 and MHC200) that are generated from a single gene by alternative splicing of mRNA. J. Biol. Chem. 264: 9734-9737.
2. Bober, E., et al. 1990. Identification of three developmentally controlled isoforms of human Myosin heavy chains. Eur. J. Biochem. 189: 55-65.
3. Karsch-Mizrachi, I., et al. 1990. Generation of a full-length human perinatal Myosin heavy-chain-encoding cDNA. Gene 89: 289-294.
4. Cheney, R.E., et al. 1993. Phylogenetic analysis of the Myosin superfamily. Cell Motil. Cytoskeleton 24: 215-223.
5. Jullian, E.H., et al. 1995. Characterization of a human perinatal Myosin heavy-chain transcript. Eur. J. Biochem. 230: 1001-1006.
6. Owens, G.K. 1995. Regulation of differentiation of vascular smooth muscle cells. Physiol. Rev. 75: 487-517.
7. Horowitz, A., et al. 1996. Mechanisms of smooth muscle contraction. Physiol. Rev. 76: 967-1003.
8. Weiss, A., et al. 1996. The mammalian Myosin heavy chain gene family. Annu. Rev. Cell Dev. Biol. 12: 417-439.
9. Lu, B.D., et al. 1999. Spatial and temporal changes in Myosin heavy chain gene expression in skeletal muscle development. Dev. Biol. 216: 312-326.

CHROMOSOMAL LOCATION

Genetic locus: MYH1 (human) mapping to 17p13.1.

SOURCE

MYH (TH81) is a mouse monoclonal antibody raised against MYH of rabbit origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MYH (TH81) is recommended for detection of cardiac Myosin heavy chain of human, rat and rabbit origin by 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); also recommended for detection of myosin light chain of rabbit origin.

Suitable for use as control antibody for MYH1 siRNA (h): sc-35929, MYH1 shRNA Plasmid (h): sc-35929-SH and MYH1 shRNA (h) Lentiviral Particles: sc-35929-V.

Molecular Weight of MYH: 200 kDa.

SELECT PRODUCT CITATIONS

1. Lee, T., et al. 2017. 2'-O-methyl RNA/ethylene-bridged nucleic acid chimera antisense oligonucleotides to induce dystrophin exon 45 skipping. Genes 8 pii: E67.
2. Mitry, M.A., et al. 2020. Accelerated cardiomyocyte senescence contributes to late-onset doxorubicin-induced cardiotoxicity. Am. J. Physiol., Cell Physiol. 318: C380-C391.

STORAGE

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

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.

CONJUGATES

See **MYH (B-5): sc-376157** for MYH antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.