SANTA CRUZ BIOTECHNOLOGY, INC.

MYH10 (3H2): sc-33729

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 by myosin light chain kinase. Myosin heavy chains are encoded by the MYH gene family and have Actin-activated ATPase activity which generates the motor function of myosin. Myosin heavy chains, which were initially isolated from a human fetal skeletal muscle, are the major determinant in the speed of contraction of skeletal muscle. Various isoforms of myosin heavy chain 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. Karsch-Mizrachi, I., et al. 1990. Generation of a full-length human perinatal myosin heavy chain encoding cDNA. Gene 89: 289-294.

CHROMOSOMAL LOCATION

Genetic locus: MYH10 (human) mapping to 17p13.1; Myh10 (mouse) mapping to 11 B3.

SOURCE

MYH10 (3H2) is a mouse monoclonal antibody raised against amino acids 1964-1976 of MYH10 of human origin.

PRODUCT

Each vial contains 100 µl ascites containing IgG_{2b} with < 0.1% sodium azide.

APPLICATIONS

MYH10 (3H2) is recommended for detection of myosin heavy chains encoded by MYH10 of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:100-1:5000).

Suitable for use as control antibody for MYH10 siRNA (h): sc-61122, MYH10 siRNA (m): sc-61123, MYH10 shRNA Plasmid (h): sc-61122-SH, MYH10 shRNA Plasmid (m): sc-61123-SH, MYH10 shRNA (h) Lentiviral Particles: sc-61122-V and MYH10 shRNA (m) Lentiviral Particles: sc-61123-V.

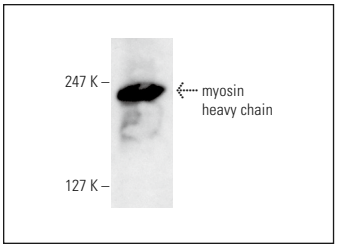
Molecular Weight of MYH10: 200 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or A-10 cell lysate: sc-3806.

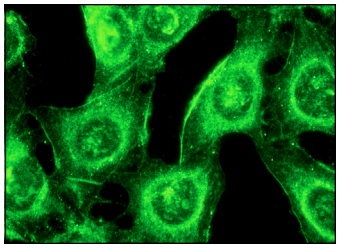
STORAGE

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.

DATA



MYH10 (3H2): sc-33729. Western blot analysis of myosin heavy chain expression in HeLa whole cell lysate.



MYH10 (3H2): sc-33729. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Wang, C., et al. 2008. Krüppel-like factor 4 is required for the expression of vascular smooth muscle cell differentiation marker genes induced by all-*trans* retinoic acid. J. Biochem. 144: 313-321.
2. Lacerda, C.M., et al. 2009. Differential protein expression between normal, early-stage, and late-stage myxomatous mitral valves from dogs. Proteomics Clin. Appl. 3: 1422-1429.
3. So, K.H., et al. 2011. Generation of functional cardiomyocytes from mouse induced pluripotent stem cells. Int. J. Cardiol. 153: 277-285.
4. Jia, J., et al. 2014. CLPTM1L promotes growth and enhances aneuploidy in pancreatic cancer cells. Cancer Res. 74: 2785-2795.
5. Yao, D., et al. 2018. O-Linked β-N-acetylglucosamine modification of A20 enhances the inhibition of NFκB (nuclear factor-κB) activation and elicits vascular protection after acute endoluminal arterial injury. Arterioscler. Thromb. Vasc. Biol. 38: 1309-1320.
6. Wei, S., et al. 2018. Novel zinc finger transcription factor ZFP580 facilitates all-*trans* retinoic acid -induced vascular smooth muscle cells differentiation by Rarα-mediated PI3K/Akt and ERK signaling. Cell. Physiol. Biochem. 50: 2390-2405.
7. Han, L., et al. 2023. Lipid droplet-associated lncRNA LIPTER preserves cardiac lipid metabolism. Nat. Cell Biol. 25: 1033-1046.

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.