SANTA CRUZ BIOTECHNOLOGY, INC.

MYH11 (N-16): sc-79079

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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, 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. Karsch-Mizrachi, I., et al. 1990. Generation of a full-length human perinatal Myosin heavy chain encoding cDNA. Gene 89: 289-294.
3. Bober, E., et al. 1990. Identification of three developmentally controlled isoforms of human Myosin heavy chains. Eur. J. Biochem. 189: 55-65.
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. Weiss, A. and Leinwand, L.A. 1996. The mammalian Myosin heavy chain gene family. Annu. Rev. Cell Dev. Biol. 12: 417-439.
8. Horowitz, A., et al. 1996. Mechanisms of smooth muscle contraction. Physiol. Rev. 76: 967-1003.
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: MYH11 (human) mapping to 16p13.11; Myh11 (mouse) mapping to 16 A1.

SOURCE

MYH11 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of myosin heavy chain 11 of human 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-79079 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MYH11 (N-16) is recommended for detection of Myosin heavy chain 11 of mouse, rat and human 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).

MYH11 (N-16) is also recommended for detection of myosin heavy chain 11 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for MYH11 siRNA (h): sc-76523, MYH11 siRNA (m): sc-76524, MYH11 shRNA Plasmid (h): sc-76523-SH, MYH11 shRNA Plasmid (m): sc-76524-SH, MYH11 shRNA (h) Lentiviral Particles: sc-76523-V and MYH11 shRNA (m) Lentiviral Particles: sc-76524-V.

Molecular Weight of MYH11: 200 kDa.

Positive Controls: A-10 cell lysate: sc-3806 or HISM cell lysate: sc-2229.

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.

SELECT PRODUCT CITATIONS

1. Ma, M., et al. 2010. Major histocompatibility complex-I expression on embryonic stem cell-derived vascular progenitor cells is critical for syngeneic transplant survival. Stem Cells 28: 1465-1475.
2. Vromman, A., et al. 2013. β-amyloid context intensifies vascular smooth muscle cells induced-inflammatory response and de-differentiation. Aging Cell. E-published.

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.