

MYH7 (K-13): sc-168678

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

- 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.
- Karsch-Mizrachi, I., et al. 1990. Generation of a full-length human perinatal Myosin heavy chain encoding cDNA. *Gene* 89: 289-294.
- Bober, E., et al. 1990. Identification of three developmentally controlled isoforms of human Myosin heavy chains. *Eur. J. Biochem.* 189: 55-65.
- Cheney, R.E., et al. 1993. Phylogenetic analysis of the Myosin superfamily. *Cell Motil. Cytoskeleton* 24: 215-223.
- Jullian, E.H., et al. 1995. Characterization of a human perinatal Myosin heavy chain transcript. *Eur. J. Biochem.* 230: 1001-1006.
- Owens, G.K. 1995. Regulation of differentiation of vascular smooth muscle cells. *Physiol. Rev.* 75: 487-517.
- Weiss, A., et al. 1996. The mammalian Myosin heavy chain gene family. *Annu. Rev. Cell Dev. Biol.* 12: 417-439.

CHROMOSOMAL LOCATION

Genetic locus: MYH7 (human) mapping to 14q11.2; Myh7 (mouse) mapping to 14 C3.

SOURCE

MYH7 (K-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MYH7 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-168678 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MYH7 (K-13) is recommended for detection of MYH7 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), 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); may cross-react with MYH3 of rat origin.

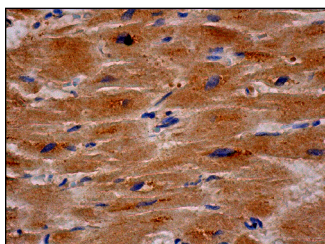
Suitable for use as control antibody for MYH7 siRNA (h): sc-106222, MYH7 siRNA (m): sc-149745, MYH7 shRNA Plasmid (h): sc-106222-SH, MYH7 shRNA Plasmid (m): sc-149745-SH, MYH7 shRNA (h) Lentiviral Particles: sc-106222-V and MYH7 shRNA (m) Lentiviral Particles: sc-149745-V.

Molecular Weight of MYH7: 223 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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



MYH7 (K-13): sc-168678. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

- Fang, J., et al. 2015. Antithetical regulation of α -myosin heavy chain between fetal and adult heart failure through shuttling of HDAC5 regulating YY-1 function. *Cardiovasc. Toxicol.* 15: 147-156.

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.