

MYH1/2/4 (MY-32): sc-58797

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. Identification of two types of smooth muscle myosin heavy chain isoforms by cDNA cloning and immunoblot analysis. *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.
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- Jullian, E.H., et al. 1995. Characterization of a human perinatal myosin heavy-chain transcript. *Eur. J. Biochem.* 230: 1001-1006.
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- Horowitz, A., et al. 1996. Mechanisms of smooth muscle contraction. *Physiol. Rev.* 76: 967-1003.
- 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.

SOURCE

MYH1/2/4 (MY-32) is a mouse monoclonal antibody raised against muscle myosin of rabbit origin.

PRODUCT

Each vial contains 500 µl culture supernatant containing IgG₁ with 1% stabilizer protein and < 0.1% sodium azide.

PROTOCOLS

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

APPLICATIONS

MYH1/2/4 (MY-32) is recommended for detection of myosin heavy chains encoded by MYH1, 2 and 4 of mouse, rat, human, rabbit, bovine and feline origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:10-1:200); may cross-react with neonatal but not with embryonal cardiac myosin heavy chains. Non cross-reactive with non-muscle, and smooth muscle myosins.

Molecular Weight of MYH1/2/4: 200 kDa.

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

SELECT PRODUCT CITATIONS

- Sandonà, D., et al. 2012. Adaptation of mouse skeletal muscle to long-term microgravity in the MDS mission. *PLoS ONE* 7: e33232.
- Yang, Y.C., et al. 2013. Androgen receptor inclusions acquire GRP78/BiP to ameliorate androgen-induced protein misfolding stress in embryonic stem cells. *Cell Death Dis.* 4: e607.
- Luo, Y., et al. 2015. microRNA133a targets Foxl2 and promotes differentiation of C2C12 into myogenic progenitor cells. *DNA Cell Biol.* 34: 29-36.

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.

RESEARCH USE

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