SANTA CRUZ BIOTECHNOLOGY, INC.

MYH (Y-20): sc-12117

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.

CHROMOSOMAL LOCATION

Genetic locus: MYH1/MYH2/MYH8 (human) mapping to 17p13.1, Myh1/Myh2/Myh4/Myh8 (mouse) mapping to 11 B3.

SOURCE

MYH (Y-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of myosin heavy chain 8 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-12117 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MYH (Y-20) is recommended for detection of myosin heavy chain 1, 2 and 8 of human origin and myosin heavy chain 1, 2, 4 and 8 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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); may cross-react with myosin heavy chain 4, 6 and 7 of human origin and myosin heavy chain 6 and 7 of mouse and rat origin.

MYH (Y-20) is also recommended for detection of myosin heavy chain 1, 2 and 8 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of MYH: 200 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, A-10 cell lysate: sc-3806 or rat skeletal muscle extract: sc-364810.

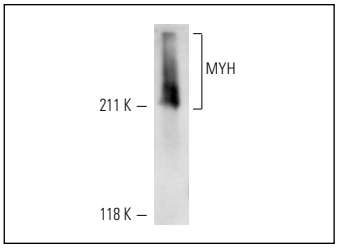
STORAGE

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

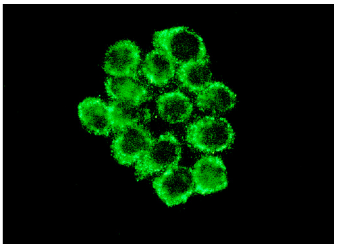
RESEARCH USE

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

DATA



MYH (Y-20): sc-12117. Western blot analysis of MYH expression in rat skeletal muscle tissue extract.



MYH (Y-20): sc-12117. Immunofluorescence staining of methanol-fixed RAW 264.7 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Zhang, S., et al. 2004. Enhanced cytoprotection and angiogenesis by bone marrow cell transplantation may contribute to improved ischemic myocardial function. Eur. J. Cardiothorac. Surg. 25: 188-195.
2. Hoerth, E., et al. 2004. Involvment of c-Abl in the radiation-induced inhibition of myoblast differentiation. Int. J. Radiat. Biol. 80: 729-736.
3. Mikula, M., et al. 2005. Increased mitochondrial gene expression during L6 cell myogenesis is accelerated by insulin. Int. J. Biochem. Cell Biol. 37: 1815-1828.
4. Wu, H., et al. 2007. SEMA4C participates in myogenic differentiation *in vivo* and *in vitro* through the p38 MAPK pathway. Eur. J. Cell Biol. 86: 331-344.
5. Rajagopalan, V., et al. 2008. Cardiac ErbB-1/ErbB-2 mutant expression in young adult mice leads to cardiac dysfunction. Am. J. Physiol. Heart Circ. Physiol. 295: H543-H554.
6. Kazama, T., et al. 2008. Mature adipocyte-derived dedifferentiated fat cells can transdifferentiate into skeletal myocytes *in vitro*. Biochem. Biophys. Res. Commun. 377: 780-785.
7. Robinson, M.M., et al. 2010. Acute β-adrenergic stimulation does not alter mitochondrial protein synthesis or markers of mitochondrial biogenesis in adult men. Am. J. Physiol. Regul. Integr. Comp. Physiol. 298: R25-R33.
8. Biswas, N., et al. 2010. Chromogranin/secretogranin proteins in murine heart: myocardial production of chromogranin A fragment catestatin (Chga(364-384)). Cell Tissue Res. 342: 353-361.