SANTA CRUZ BIOTECHNOLOGY, INC.

Myosin-neonatal (N1.551): sc-53097

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Actin is a highly conserved protein that is expressed in all eukaryotic cells. Actin filaments can form both stable and labile structures and are crucial components of microvilli and the contractile apparatus of muscle cells. Troponin facilitates interaction between Actin and Myosin by binding to Ca^{2+}. Troponin is made up of at least two subunits, which are divergent in cardiac muscle, fast skeletal muscle and slow skeletal muscle. Myosin is a hexamer of four light chains (MLC) and two heavy chains (MHC), each MHC are approximately 2,000 amino acids in length, containing an N-terminal domain and a C-terminal domain which takes on a coiled-coil morphology. Myosin forms bipolar filaments that interact with Actin filaments to generate the force for diverse cellular movements, including cytokinesis, phagocytosis and muscle contraction. This contraction is accompanied by ATP hydrolysis. There are many classes of myosins in vertebrates, including nonmuscle and unconventional Myosin classes. There are two types of immature muscle Myosins: neonatal Myosin and fetal Myosin. The neonatal form of Myosin contains only fast-type light chains (LC), LC1F and LC2F.

CHROMOSOMAL LOCATION

Genetic locus: MYH8 (human) mapping to 17p13.1; Myh8 (mouse) mapping to 11 B3.

SOURCE

Myosin-neonatal (N1.551) is a mouse monoclonal antibody raised against neonatal Myosins of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chian in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Myosin-neonatal (N1.551) is recommended for detection of neonatal Myosin of mouse, rat, human and rabbit 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Myosin-neonatal: 223 kDa.

Positive Controls: mouse embryonic heart tissue extract.

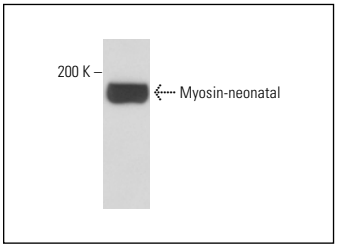
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

STORAGE

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

DATA



Myosin-neonatal (N1.551): sc-53097. Western blot analysis of Myosin-neonatal expression in mouse embryonic heart tissue extract.

SELECT PRODUCT CITATIONS

1. Touchberry, C.D., et al. 2012. Acute heat stress prior to downhill running may enhance skeletal muscle remodeling. Cell Stress Chaperones 17: 693-705.
2. Tonami, K., et al. 2013. Calpain-6 deficiency promotes skeletal muscle development and regeneration. PLoS Genet. 9: e1003668.
3. Mahdy, M.A.A., et al. 2017. Effects of transforming growth factor-β1 treatment on muscle regeneration and adipogenesis in glycerol-injured muscle. Anim. Sci. J. 88: 1811-1819.
4. Lima, A.R.R., et al. 2017. Effects of growth hormone on cardiac remodeling and soleus muscle in rats with aortic stenosis-induced heart failure. Oncotarget 8: 83009-83021.
5. McClure, M.J., et al. 2018. Decellularized muscle supports new muscle fibers and improves function following volumetric injury. Tissue Eng. Part A 24: 1228-1241.
6. Gomes, M.J., et al. 2020. Effects of aerobic and resistance exercise on cardiac remodelling and skeletal muscle oxidative stress of infarcted rats. J. Cell. Mol. Med. 24: 5352-5362.
7. McClure, M.J., et al. 2021. RNU (Foxn1^{RNU}-nude) rats demonstrate an improved ability to regenerate muscle in a volumetric muscle injury compared to sprague dawley rats. Bioengineering 8: 12.
8. Marie-Hélène, C., et al. 2022. Early movement restriction deteriorates motor function and soleus muscle physiology. Exp. Neurol. 347: 113886.
9. Sun, S., et al. 2025. Aminoguanidine hemisulfate improves mitochondrial autophagy, oxidative stress, and muscle force in Duchenne muscular dystrophy via the AKT/FOXO1 pathway in mdx mice. Skelet. Muscle 15: 2.

RESEARCH USE

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