SANTA CRUZ BIOTECHNOLOGY, INC.

MYL5 (SB-19): sc-100952

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myosin interacts with Actin to generate the force for diverse cellular movements, including cytokinesis, phagocytosis and muscle contraction. Myosin is a hexamer of two heavy chains (MHC) and four light chains (MLC), two of which are nonphosphorylatable alkali light chains and the other two are phosphorylatable regulatory light chains. Myosin regulatory light chain 5, also known as Myosin LC2, is encoded by the MYL5 gene and expressed in fetal muscle as well as adult retina, cerebellum and basal ganglia. Removal of light chains from Myosin reduces the velocity of Actin filaments. Reconstitution of Myosin with regulatory light chain 5 or alkali light chain increases filament velocity to intermediate rates, and readdition of both classes of light chains fully restores the original sliding velocity.

REFERENCES

1. Kuo, T.H. and Banerjee, S.K. 1983. Effects of removal of light chain 2 on the ATPase activities of cardiac Myosin from normal and thyrotoxic rabbits. Biochim. Biophys. Acta 707: 199-205.
2. Lowey, S., Waller, G.S. and Trybus, K.M. 1993. Skeletal muscle Myosin light chains are essential for physiological speeds of shortening. Nature 365: 454-456.
3. Collins, C., Schappert, K. and Hayden, M.R. 1993. The genomic organization of a novel regulatory Myosin light chain gene (MYL5) that maps to chromosome 4p16.3 and shows different patterns of expression between primates. Hum. Mol. Genet. 1: 727-733.
4. Roulet, A., Burgat, J.M. and Cardinaud, R. 1993. The proteolytic susceptibility of specific sites in Myosin light chains is modulated by the filament conformation. Eur. J. Biochem. 216: 89-101.
5. Holt, J.C., Caulfield, J.B., Norton, P., Chantler, P.D., Slayter, H.S. and Margossian, S.S. 1995. Human cardiac Myosin light chains: sequence comparisons between myosin LC1 and LC2 from normal and idiopathic dilated cardiomyopathic hearts. Mol. Cell. Biochem. 145: 89-96.
6. Stepkowski, D., Szczesna, D., Babiychuk, E.B., Borovikov, Y.S. and Kakol, I. 1995. Significance of the N-terminal fragment of Myosin regulatory light chain for Myosin-Actin interaction. Biochem. Mol. Biol. Int. 35: 677-684.
7. Khalina, IaN., Udal'tsov, S.N. and Podlubnaia, Z.A. 2002. Changes in composition of cardiac myosin light chains in dilated cardiomyopathy: effect on functional properties. Biofizika 47: 361-366.

CHROMOSOMAL LOCATION

Genetic locus: MYL5 (human) mapping to 4p16.3.

SOURCE

MYL5 (SB-19) is a mouse monoclonal antibody raised against recombinant MYL5 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MYL5 (SB-19) is recommended for detection of MYL5 of human 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MYL5 siRNA (h): sc-61126, MYL5 shRNA Plasmid (h): sc-61126-SH and MYL5 shRNA (h) Lentiviral Particles: sc-61126-V.

Molecular Weight of MYL5: 18 kDa.

Positive Controls: Y79 cell lysate: sc-2240.

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 A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

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.

PROTOCOLS

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