SANTA CRUZ BIOTECHNOLOGY, INC.

p-MYL9 (Thr 18)-R: sc-19848-R

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. Myosin light chain 9, which is encoded by MYL9, is one of the numerous regulatory myosin light chains. Regulatory myosin light chains, also known as MLCs, regulate contraction in smooth muscle and non-muscle cells via phosphorylation by myosin light chain kinase (MLCK). Phosphorylation of regulatory myosin light chains is catalyzed by MLCK in the presence of calcium and calmodulin and it increases the Actin-activated myosin ATPase activity, thereby regulating the contractile activity. Myosin light chain is also located in striated skeletal muscle, where its function remains undefined.

REFERENCES

1. Yamakita, Y., et al. 1994. *In vivo* phosphorylation of regulatory light chain of Myosin II during mitosis of cultured cells. J. Cell Biol. 124: 129-137.
2. Amano, M., et al. 1996. Phosphorylation and activation of Myosin by Rho-associated kinase (Rho-kinase). J. Biol. Chem. 271: 20246-20249.
3. Seto, M., et al. 1996. Myosin light chain dephosphorylation is enhanced by growth promotion of cultured smooth muscle cells. Pflugers Arch. 432: 7-13.
4. Kawano, Y., et al. 1999. Phosphorylation of Myosin-binding subunit (MBS) of Myosin phosphatase by Rho-kinase *in vivo*. J. Cell Biol. 147: 1023-1038.
5. Seto, M., et al. 1999. The molecular mechanism of vasospasm and the attenuation by fasudil. Nippon Yakurigaku Zasshi 114: 66-70.
6. Shimokawa, H., et al. 1999. Rho-kinase-mediated pathway induces enhanced Myosin light chain phosphorylations in a swine model of coronary artery spasm. Cardiovasc. Res. 43: 1029-1039.

SOURCE

p-MYL9 (Thr 18)-R is a polyclonal affinity purified rabbit antibody raised against a short amino acid sequence containing Thr 18 phosphorylated MYL9 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-19848 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

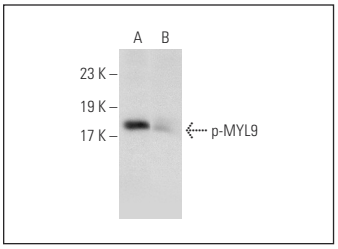
p-MYL9 (Thr 18)-R is recommended for detection of Thr 18 phosphorylated MYL9, nonsarcomeric and smooth muscle isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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); also recommended for detection of correspondingly phosphorylated MRLC2 and MRCL3 of human origin and Mylc2b of mouse and rat origin.

p-MYL9 (Thr 18)-R is also recommended for detection of correspondingly phosphorylated MYL9, nonsarcomeric and smooth muscle isoforms in additional species, including equine, porcine and avian.

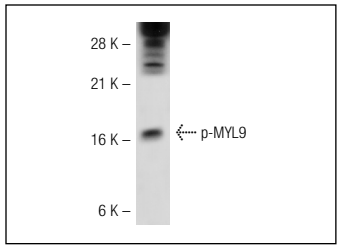
Molecular Weight of p-MYL9: 18-20 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206.

DATA



p-MYL9 (Thr 18)-R: sc-19848-R. Western blot analysis of MYL9 phosphorylation in untreated (**A**) and lambda protein phosphatase treated (**B**) C2C12 whole cell lysates.



p-MYL9 (Thr 18): sc-19848-R. Western blot analysis of MYL9 phosphorylation in MCF7 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Karteris, E., et al. 2004. Urocortin II is expressed in human pregnant myometrial cells and regulates myosin light chain phosphorylation: potential role of the type-2 corticotropin-releasing hormone receptor in the control of myometrial contractility. Endocrinology 145: 890-900.
2. Jiang, X., et al. 2010. HGAL, a germinal center specific protein, decreases lymphoma cell motility by modulation of the RhoA signaling pathway. Blood 116: 5217-5227.
3. de La Serre, C.B., et al. 2010. Propensity to high-fat diet-induced obesity in rats is associated with changes in the gut microbiota and gut inflammation. Am. J. Physiol. Gastrointest. Liver Physiol. 299: G440-G448.

PROTOCOLS

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