SANTA CRUZ BIOTECHNOLOGY, INC.

MYL9/MYL12A/B (E-4): sc-28329

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 regulatory light chains, including MYL12A (also known as MRLC3 or MLCB), MYL12B (also known as MRLC2) and MYL9 (also known as LC20, MLC2, MRLC1 or MYRL2), regulate contraction in smooth muscle and non-muscle cells via phosphorylation by Myosin light chain kinase (MLCK). Phosphorylation of Myosin regulatory light chains, catalyzed by MLCK in the presence of calcium and calmodulin, 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.

SOURCE

MYL9/MYL12A/B (E-4) is a mouse monoclonal antibody raised against amino acids 1-172 representing full length MYL12A of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MYL9/MYL12A/B (E-4) is available conjugated to agarose (sc-28329 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28329 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28329 PE), fluorescein (sc-28329 FITC), Alexa Fluor® 488 (sc-28329 AF488), Alexa Fluor® 546 (sc-28329 AF546), Alexa Fluor® 594 (sc-28329 AF594) or Alexa Fluor® 647 (sc-28329 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28329 AF680) or Alexa Fluor® 790 (sc-28329 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

MYL9/MYL12A/B (E-4) is recommended for detection of the myosin regulatory light chains encoded by MYL9, MYL12A and MYL12B, and LOC391722 of human origin; Mylc2b, Myl9 and Myl12a of mouse origin; and Mrlcb and Myl9 of rat origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of MYL9/MRLC2/MRCL3: 20 kDa.

Positive Controls: COLO 205 whole cell lysate: sc-364177, BC_3H1 cell lysate: sc-2299 or A-10 cell lysate: sc-3806.

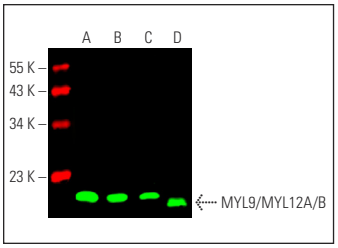
STORAGE

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

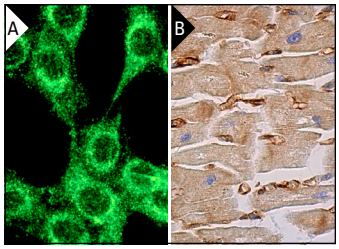
RESEARCH USE

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

DATA



MYL9/MYL12A/B (E-4) Alexa Fluor® 680: sc-28329 AF680. Direct near-infrared western blot analysis of MYL9/MYL12A/B expression in Sol8 (**A**), A-10 (**B**), BC_3H1 (**C**) and COLO 205 (**D**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 790: sc-516731.



MYL9/MYL12A/B (E-4): sc-28329. Immunofluorescence staining of methanol-fixed Sol8 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes and endothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Riondino, S., et al. 2005. Collagen-induced platelet shape change is not affected by positive feedback pathway inhibitors and cAMP-elevating agents. J. Biol. Chem. 280: 6504-6510.
2. Niego, B., et al. 2017. Selective inhibition of brain endothelial Rho-kinase-2 provides optimal protection of an *in vitro* blood-brain barrier from tissue-type plasminogen activator and plasmin. PLoS ONE 12: e0177332.
3. Dash, B., et al. 2018. Nonmuscle Myosin II isoforms interact with sodium channel α subunits. Mol. Pain 14: 1744806918788638.
4. Dusart, P., et al. 2019. A systems-based map of human brain cell-type enriched genes and malignancy-associated endothelial changes. Cell Rep. 29: 1690-1706.e4.
5. Hamao, K., et al. 2020. ZIP kinase phosphorylated and activated by Rho kinase/ROCK contributes to cytokinesis in mammalian cultured cells. Exp. Cell Res. 386: 111707.
6. Unbekandt, M., et al. 2020. The CDC42 effector protein MRCKβ autophosphorylates on Threonine 1108. Small GTPases 11: 451-460.
7. Chiang, Y.F., et al. 2020. The inhibitory effect of extra virgin olive oil and its active compound oleocanthal on prostaglandin-induced uterine hypercontraction and pain-*ex vivo* and *in vivo* study. Nutrients 12: 3012.
8. Maiques, O., et al. 2021. A preclinical pipeline to evaluate migrastatics as therapeutic agents in metastatic melanoma. Br. J. Cancer 125: 699-713.
9. Cao, C., et al. 2021. ITPRIP promotes glioma progression by linking MYL9 to DAPK1 inhibition. Cell. Signal. 85: 110062.

PROTOCOLS

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