SANTA CRUZ BIOTECHNOLOGY, INC.

MYPT2 siRNA (m): sc-62654

BACKGROUND

Protein phosphatase 1 regulatory subunit 12B (MYPT2) is a cytoplasmic protein found along actomyosin filaments and stress fibers within the cell skeleton. MYPT2 helps regulate the activity of myosin phosphatases and enhances the sensitivity of the the contractile apparatus to Ca^{+}. As part of the PP1 (protein phosphatase 1) complex, MYPT2 is responsible for binding the complex to myosin filaments. Cardiac myosin is the primary substrate targeted by the MYPT2 apoenzyme and its cofactor, however, it has also been identified along the A-band and Z-line of sarcomeres indicating it likely operates on multiple substrates.

REFERENCES

1. Fujioka, M., et al. 1998. A new isoform of human myosin phosphatase targeting/regulatory subunit (MYPT2): cDNA cloning, tissue expression, and chromosomal mapping. Genomics 49: 59-68.
2. Damer, C.K., et al. 1998. Rapid identification of protein phosphatase 1-binding proteins by mixed peptide sequencing and data base searching. Characterization of a novel holoenzymic form of protein phosphatase 1. J. Biol. Chem. 273: 24396-24405.
3. Moorhead, G., et al. 1998. The major myosin phosphatase in skeletal muscle is a complex between the b-isoform of protein phosphatase 1 and the MYPT2 gene product. FEBS Lett. 438: 141-144.
4. Bannert, N., et al. 2003. PDZ Domain-mediated interaction of interleukin-16 precursor proteins with myosin phosphatase targeting subunits. J. Biol. Chem. 278: 42190-42199.
5. Wu, Y., et al. 2003. Myosin phosphatase and myosin phosphorylation in differentiating C2C12 cells. J. Muscle Res. Cell Motil. 24: 499-511.
6. Ito, M., et al. 2004. Myosin phospha-tase: structure, regulation and function. Mol. Cell. Biochem. 259: 197-209.
7. Lontay, B., et al. 2004. Localization of myosin phosphatase target subunit 1 in rat brain and in primary cultures of neuronal cells. J. Comp. Neurol. 478: 72-87.

CHROMOSOMAL LOCATION

Genetic locus: Ppp1r12b (mouse) mapping to 1 E4.

PRODUCT

MYPT2 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MYPT2 shRNA Plasmid (m): sc-62654-SH and MYPT2 shRNA (m) Lentiviral Particles: sc-62654-V as alternate gene silencing products.

For independent verification of MYPT2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62654A, sc-62654B and sc-62654C.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MYPT2 siRNA (m) is recommended for the inhibition of MYPT2 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MYPT2 gene expression knockdown using RT-PCR Primer: MYPT2 (m)-PR: sc-62654-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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