

Profilin-2 siRNA (m): sc-152477

BACKGROUND

Profilins (Profilin-1, Profilin-2 and Profilin-3) act as nucleotide exchange factors that use ATP to charge Actin, a process that regulates Actin polymerization by subsequently sequestering the Actin monomer. Profilin-2, also known as PFN2 or PFL, is a 140 amino acid protein that is ubiquitously expressed with highest expression in kidney, brain and skeletal muscle. Like other members of the Profilin family, Profilin-2 functions as an Actin monomer-binding protein that influences the structure of the cytoskeleton by regulating Actin polymerization in response to extracellular signals. High levels of Profilin-2 inhibit Actin polymerization, while lower levels enhance Actin polymerization, suggesting that the expression of Profilin-2 is regulated by the need for polymerization within the cell. Two isoforms of Profilin-2 exist due to alternative splicing events.

REFERENCES

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- Nodelman, I.M., et al. 1999. X-ray structure determination of human Profilin II: a comparative structural analysis of human profilins. *J. Mol. Biol.* 29: 1271-1285.
- Harbeck, B., et al. 2000. Phosphorylation of the vasodilator-stimulated phosphoprotein regulates its interaction with actin. *J. Biol. Chem.* 275: 30817-30825.
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- Da Silva, J.S., et al. 2003. RhoA/ROCK regulation of neuriteogenesis via profilin II α -mediated control of actin stability. *J. Cell Biol.* 162: 1267-1279.

CHROMOSOMAL LOCATION

Genetic locus: Pfn2 (mouse) mapping to 3 D.

PRODUCT

Profilin-2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Profilin-2 shRNA Plasmid (m): sc-152477-SH and Profilin-2 shRNA (m) Lentiviral Particles: sc-152477-V as alternate gene silencing products.

For independent verification of Profilin-2 (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-152477A, sc-152477B and sc-152477C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Profilin-2 siRNA (m) is recommended for the inhibition of Profilin-2 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 μ M in 66 μ l. 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.

GENE EXPRESSION MONITORING

Profilin-2 (4K-6): sc-100955 is recommended as a control antibody for monitoring of Profilin-2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Profilin-2 gene expression knockdown using RT-PCR Primer: Profilin-2 (m)-PR: sc-152477-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.