SANTA CRUZ BIOTECHNOLOGY, INC.

PHI-1 siRNA (h): sc-96843

BACKGROUND

PHI-1, also known as PPP1R14B (protein phosphatase 1, regulatory (inhibitor) subunit 14B), PLCB3N (phospholipase C-β-3 neighbouring gene protein), PNG or SOM172, is a 147 amino acid coiled-coil protein that belongs to the PP1 inhibitor family. Ubiquitously expressed at low levels, PHI-1 localizes to cytoplasm and functions as an inhibitor of PP1. PHI-1 blocks myosin light chain dephosphorylation and interacts with MYPT1, an important regulator of cell migration, adhesion and retraction that may function as a tumor suppressor by regulating Rho-dependent amoeboid cell behavior in metastasis. Phosphorylated primarily on threonine 57 and an unknown serine by PKC, PHI-1 exhibits a 50-fold increase in inhibitory activity during phosphorylation. The gene that encodes PHI-1 maps to human chromosome 11q13.1.

REFERENCES

1. Lagercrantz, J., et al. 1996. Sequence and expression of the mouse homologue to human phospholipase C β3 neighboring gene. Biochem. Biophys. Res. Commun. 223: 335-340.
2. Lagercrantz, J., et al. 1996. Isolation and characterization of a novel gene close to the human phosphoinositide-specific phospholipase C β 3 gene on chromosomal region 11q13. Genomics 31: 380-384.
3. Ceulemans, H., et al. 2002. Regulator-driven functional diversification of protein phosphatase-1 in eukaryotic evolution. Bioessays 24: 371-381.
4. Cerutti, J.M., et al. 2004. A preoperative diagnostic test that distinguishes benign from malignant thyroid carcinoma based on gene expression. J. Clin. Invest. 113: 1234-1242.
5. Liu, Q.R., et al. 2005. Families of protein phosphatase 1 modulators activated by protein kinases a and C: focus on brain. Prog. Nucleic Acid Res. Mol. Biol. 79: 371-404.
6. Weiser, D.C., et al. 2009. Rho-regulated myosin phosphatase establishes the level of protrusive activity required for cell movements during zebrafish gastrulation. Development 136: 2375-2384.
7. Drgonova, J., et al. 2010. Effect of KEPI (Ppp1r14c) deletion on morphine analgesia and tolerance in mice of different genetic backgrounds: when a knockout is near a relevant quantitative trait locus. Neuroscience 165: 882-895.

CHROMOSOMAL LOCATION

Genetic locus: PPP1R14B (human) mapping to 11q13.1.

PRODUCT

PHI-1 siRNA (h) is a target-specific 19-25 nt siRNA 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 PHI-1 shRNA Plasmid (h): sc-96843-SH and PHI-1 shRNA (h) Lentiviral Particles: sc-96843-V as alternate gene silencing products.

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

PHI-1 siRNA (h) is recommended for the inhibition of PHI-1 expression in human 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.

GENE EXPRESSION MONITORING

PHI-1 (D-8): sc-514759 is recommended as a control antibody for monitoring of PHI-1 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-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) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 PHI-1 gene expression knockdown using RT-PCR Primer: PHI-1 (h)-PR: sc-96843-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.