SANTA CRUZ BIOTECHNOLOGY, INC.

PDE1B siRNA (m): sc-60089

BACKGROUND

cAMP-hydrolyzing cyclic nucleotide phosphodiesterase (PDE) catalyzes hydrolysis of the cyclic nucleotides cAMP and cGMP to the corresponding nucleoside 5'-monophosphates. PDEs are key enzymes in signaling pathways that influence smooth muscle tone regulation. PDE1 family members are calmodulin-dependent (CaM-PDEs) proteins that undergo stimulation through a calcium-calmodulin complex. Human PDE1B (PDE1B1) protein is present in neuronal cells of the cerebellum, hippocampus, caudate and lymphoblastoid lines, such as RPMI-8392 cells. PDE1B may participate in learning, memory and regulation of phosphorylation of DARPP-32 in dopaminergic neurons. A splice variant known as PDE1B2 encodes a 516 amino acid protein and diverges from PDE1B1 by the replacement of the first 38 residues with an alternative 18 residues. The human PDE1B gene maps to chromosome 12q13.2, contains 13 exons and encodes a 536 amino acid protein.

REFERENCES

1. Jiang, X., et al. 1996. Inhibition of calmodulin-dependent phosphodiesterase induces apoptosis in human leukemic cells. Proc. Nat. Acad. Sci. 93: 11236-11241.
2. Yu, J., et al. 1997. Identification and characterisation of a human calmodulin-stimulated phosphodiesterase PDE1B1. Cell. Signal 9: 519-529.
3. Reed, T.M., et al. 1998. Genomic structure and chromosome location of the murine PDE1B phosphodiesterase gene. Mamm. Genome 9: 571-576.
4. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 171891. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Kuthe, A., et al. 2001. Expression of different phosphodiesterase genes in human cavernous smooth muscle. J. Urol. 165: 280-283.
6. Fidock, M., et al. 2002. Isolation and differential tissue distribution of two human cDNAs encoding PDE1 splice variants. Cell. Signal. 14: 53-60.
7. LocusLink Report (LocusID: 5153). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Pde1b (mouse) mapping to 15 F3.

PRODUCT

PDE1B 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 PDE1B shRNA Plasmid (m): sc-60089-SH and PDE1B shRNA (m) Lentiviral Particles: sc-60089-V as alternate gene silencing products.

For independent verification of PDE1B (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-60089A, sc-60089B and sc-60089C.

PROTOCOLS

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

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

PDE1B siRNA (m) is recommended for the inhibition of PDE1B 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.

GENE EXPRESSION MONITORING

PDE1B (G-5): sc-393112 is recommended as a control antibody for monitoring of PDE1B 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 PDE1B gene expression knockdown using RT-PCR Primer: PDE1B (m)-PR: sc-60089-PR (20 µl, 458 bp). 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.