SANTA CRUZ BIOTECHNOLOGY, INC.

PDE10A siRNA (m): sc-62762

BACKGROUND

PDE10A (phosphodiesterase 10A) is a striatum-enriched dual-substrate phosphodiesterase that participates in signal transduction by regulating the concentration of cyclic nucleotides. Localized to soluble cellular fractions within the cytoplasm, PDE10A can hydrolyze both cGMP and cAMP to the corresponding nucleoside 5' monophosphate, thereby eliminating cGMP- and cAMP-mediated intracellular signaling. Through its ability to hydrolyze cyclic nucleotides, PDE10A regulates the excitability of medium spiny neurons located in the striatum. PDE10A is expressed abundantly in the putamen and caudate nuclear regions of the testis and brain, with moderate expression ob-served in the pituitary gland, thalamus and cerebellum. PDE10A contains an N-terminal regulatory domain and a C-terminal catalytic domain which has two putative divalent metal binding sites. Two isoforms exist due to alternative splicing events.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610652. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Hu, H., et al. 2004. Mutant huntingtin affects the rate of transcription of striatum-specific isoforms of phosphodiesterase 10A. Eur. J. Neurosci. 20: 3351-3363.
3. Rodefer, J.S., et al. 2005. PDE10A inhibition reverses subchronic PCP-induced deficits in attentional set-shifting in rats. Eur. J. Neurosci. 21: 1070-1076.
4. Xie, Z., et al. 2006. Cellular and subcellular localization of PDE10A, a striatum-enriched phosphodiesterase. Neuroscience 139: 597-607.

CHROMOSOMAL LOCATION

Genetic locus: Pde10a (mouse) mapping to 17 A1.

PRODUCT

PDE10A siRNA (m) is a pool of 3 target-specific 20-25 nt siRNAs designed to knock down gene expression. Each vial contains 3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PDE10A shRNA Plasmid (m): sc-62762-SH and PDE10A shRNA (m) Lentiviral Particles: sc-62762-V as alternate gene silencing products.

For independent verification of PDE10A (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3 nmol of lyophilized siRNA. These include: sc-62762A, sc-62762B and sc-62762C.

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

PDE10A siRNA (m) is recommended for the inhibition of PDE10A 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

PDE10A (G-7): sc-515023 is recommended as a control antibody for monitoring of PDE10A 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 PDE10A gene expression knockdown using RT-PCR Primer: PDE10A (m)-PR: sc-62762-PR (20 µl, 419 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Guibinga, G.H., et al. 2013. HPRT-deficiency dysregulates cAMP-PKA signaling and phosphodiesterase 10A expression: mechanistic insight and potential target for Lesch-Nyhan disease? PLoS ONE 8: e63333.

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.