SANTA CRUZ BIOTECHNOLOGY, INC.

PCDHA11 siRNA (h): sc-106368

BACKGROUND

Protocadherins are a large family of cadherin-like cell adhesion proteins that are involved in the establishment and maintenance of neuronal connections in the brain. There are three protocadherin (PCDH) gene clusters, designated α, β and γ, all of which contain multiple tandemly arranged genes. The protein products of PCDH-α genes interact with Integrin β1 to promote cell adhesion and form oligomers with PCDH-γ proteins at specific membrane sites. PCDHA11 (protocadherin α-11) is a 949 amino acid single-pass transmembrane protein that contains 6 cadherin domains and functions as a potential calcium-dependent cell-adhesion protein, possibly playing a role in the creation and maintenance of neuronal connections. There are two isoforms of PCDHA11 that are produced as a result of alternative splicing events.

REFERENCES

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2. Hirayama, T., et al. 2006. The role and expression of the protocadherin-α clusters in the CNS. Curr. Opin. Neurobiol. 16: 336-342.
3. Kaneko, R., et al. 2006. Allelic gene regulation of Pcdh-α and Pcdh-γ clusters involving both monoallelic and biallelic expression in single Purkinje cells. J. Biol. Chem. 281: 30551-30560.
4. Ribich, S., et al. 2006. Identification of long-range regulatory elements in the protocadherin-α gene cluster. Proc. Natl. Acad. Sci. USA 103: 19719-19724.
5. Bonn, S., et al. 2007. Combinatorial expression of α- and γ-protocadherins alters their presenilin-dependent processing. Mol. Cell. Biol. 27: 4121-4132.
6. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 606317. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Yagi, T. 2008. Clustered protocadherin family. Dev. Growth Differ. 50: S131-S140.
8. Kawaguchi, M., et al. 2008. Relationship between DNA methylation states and transcription of individual isoforms encoded by the protocadherin-α gene cluster. J. Biol. Chem. 283: 12064-12075.

CHROMOSOMAL LOCATION

Genetic locus: PCDHA11 (human) mapping to 5q31.3.

PRODUCT

PCDHA11 siRNA (h) 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 PCDHA11 shRNA Plasmid (h): sc-106368-SH and PCDHA11 shRNA (h) Lentiviral Particles: sc-106368-V as alternate gene silencing products.

For independent verification of PCDHA11 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-106368A, sc-106368B and sc-106368C.

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

PCDHA11 siRNA (h) is recommended for the inhibition of PCDHA11 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

PCDHA11 (A-4): sc-514668 is recommended as a control antibody for monitoring of PCDHA11 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 PCDHA11 gene expression knockdown using RT-PCR Primer: PCDHA11 (h)-PR: sc-106368-PR (20 µl). 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.