

PCDHA13 siRNA (h): sc-106372

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 $\beta 1$ to promote cell adhesion and form oligomers with PCDH- γ proteins at specific membrane sites. PCDHA13 (Protocadherin α -13) is a 950 amino acid single-pass transmembrane protein that contains six 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 PCDHA13 that are produced as a result of alternative splicing events.

REFERENCES

1. Wu, Q. and Maniatis, T. 1999. A striking organization of a large family of human neural cadherin-like cell adhesion genes. *Cell* 97: 779-790.
2. Tasic, B., Nabholz, C.E., Baldwin, K.K., Kim, Y., Rueckert, E.H., Ribich, S.A., Cramer, P., Wu, Q., Axel, R. and Maniatis, T. 2002. Promoter choice determines splice site selection in protocadherin α and γ pre-mRNA splicing. *Mol. Cell* 10: 21-33.
3. Hirayama, T. and Yagi, T. 2006. The role and expression of the protocadherin- α clusters in the CNS. *Curr. Opin. Neurobiol.* 16: 336-342.
4. Kaneko, R., Kato, H., Kawamura, Y., Esumi, S., Hirayama, T., Hirabayashi, T. and Yagi, T. 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.
5. Ribich, S., Tasic, B. and Maniatis, T. 2006. Identification of long-range regulatory elements in the protocadherin- α gene cluster. *Proc. Natl. Acad. Sci. USA* 103: 19719-19724.
6. Bonn, S., Seeburg, P.H. and Schwarz, M.K. 2007. Combinatorial expression of α - and γ -protocadherins alters their presenilin-dependent processing. *Mol. Cell. Biol.* 27: 4121-4132.
7. Yagi, T. 2008. Clustered protocadherin family. *Dev. Growth Differ.* 1: S131-S140.
8. Kawaguchi, M., Toyama, T., Kaneko, R., Hirayama, T., Kawamura, Y. and Yagi, T. 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: PCDHA13 (human) mapping to 5q31.3.

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.

PRODUCT

PCDHA13 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PCDHA13 shRNA Plasmid (h): sc-106372-SH and PCDHA13 shRNA (h) Lentiviral Particles: sc-106372-V as alternate gene silencing products.

For independent verification of PCDHA13 (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-106372A, sc-106372B and sc-106372C.

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

PCDHA13 siRNA (h) is recommended for the inhibition of PCDHA13 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PCDHA13 gene expression knockdown using RT-PCR Primer: PCDHA13 (h)-PR: sc-106372-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.