

PCDHB13 siRNA (h): sc-91996

BACKGROUND

PCDHB13 (protocadherin β -13) is a 798 amino acid type I membrane protein that contains six cadherin domains. As a potential calcium-dependent cell-adhesion protein, PCDHB13 may be involved in the establishment and maintenance of specific neuronal connections in the brain. The gene that encodes PCDHB13 maps to human chromosome 5q31, and is a member of the protocadherin β gene cluster. This gene cluster is one of three related gene clusters tandemly linked on chromosome 5. It demonstrates an unusual genomic organization similar to that of B-cell and T-cell receptor gene clusters. Containing 16 genes and 3 pseudogenes, the β gene cluster encodes 6 extracellular cadherin domains and a cytoplasmic tail that deviates from others in the cadherin superfamily. The extracellular domains interact in a homophilic manner to specify differential cell-cell connections.

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. Yagi, T. and Takeichi, M. 2000. Cadherin superfamily genes: functions, genomic organization, and neurologic diversity. *Genes Dev.* 14: 1169-1180.
3. Nollet, F., Kools, P. and van Roy, F. 2000. Phylogenetic analysis of the cadherin superfamily allows identification of six major subfamilies besides several solitary members. *J. Mol. Biol.* 299: 551-572.
4. Wu, Q. and Maniatis, T. 2000. Large exons encoding multiple ectodomains are a characteristic feature of protocadherin genes. *Proc. Natl. Acad. Sci. USA* 97: 3124-3129.
5. Vanhalst, K., Kools, P., Vanden Eynde, E. and van Roy, F. 2001. The human and murine protocadherin- β one-exon gene families show high evolutionary conservation, despite the difference in gene number. *FEBS Lett.* 495: 120-125.
6. Wu, Q., Zhang, T., Cheng, J.F., Kim, Y., Grimwood, J., Schmutz, J., Dickson, M., Noonan, J.P., Zhang, M.Q., Myers, R.M. and Maniatis, T. 2001. Comparative DNA sequence analysis of mouse and human protocadherin gene clusters. *Genome Res.* 11: 389-404.
7. Online Mendelian Inheritance in Man, OMIM[™]. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 606337. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Frank, M. and Kemler, R. 2002. Protocadherins. *Curr. Opin. Cell Biol.* 14: 557-562.
9. Miki, R., Hattori, K., Taguchi, Y., Tada, M.N., Isosaka, T., Hidaka, Y., Hirabayashi, T., Hashimoto, R., Fukuzako, H. and Yagi, T. 2005. Identification and characterization of coding single-nucleotide polymorphisms within human protocadherin- α and - β gene clusters. *Gene* 349: 1-14.

CHROMOSOMAL LOCATION

Genetic locus: PCDHB13 (human) mapping to 5q31.3.

PROTOCOLS

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

PRODUCT

PCDHB13 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 PCDHB13 shRNA Plasmid (h): sc-91996-SH and PCDHB13 shRNA (h) Lentiviral Particles: sc-91996-V as alternate gene silencing products.

For independent verification of PCDHB13 (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-91996A, sc-91996B and sc-91996C.

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

PCDHB13 siRNA (h) is recommended for the inhibition of PCDHB13 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 PCDHB13 gene expression knockdown using RT-PCR Primer: PCDHB13 (h)-PR: sc-91996-PR (20 μ l). 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.