

## PCDHB12 siRNA (h): sc-91945

### 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 gene clusters, designated  $\alpha$ ,  $\beta$  and  $\gamma$ , all of which contain multiple tandemly arranged genes. PCDHB12 (protocadherin  $\beta$ 12) is a 795 amino acid protein that is one of 16 proteins in the protocadherin  $\beta$  cluster. Unlike the  $\alpha$  and  $\gamma$  gene clusters whose genes are spliced to downstream constant region exons during transcription, members of the  $\beta$  cluster (such as PCDHB12) do not use constant-region exons to produce mRNAs. As a result, each protocadherin  $\beta$  gene encodes the transmembrane, extracellular and short cytoplasmic domains of the protein. Localized to the cell membrane, PCDHB12 is a single-pass type I membrane protein that contains six cadherin domains. PCDHB12 may participate in the establishment and maintenance of specific neuronal connections in the brain.

### 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., et al. 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., et al. 2001. The human and murine protocadherin- $\beta$  one-exon gene families show high evolutionary conservation, despite the difference in gene number. *FEBS Lett.* 495: 120-125.
6. Wu, Q., et al. 2001. Comparative DNA sequence analysis of mouse and human protocadherin gene clusters. *Genome Res.* 11: 389-404.

### CHROMOSOMAL LOCATION

Genetic locus: PCDHB12 (human) mapping to 5q31.3.

### PRODUCT

PCDHB12 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PCDHB12 shRNA Plasmid (h): sc-91945-SH and PCDHB12 shRNA (h) Lentiviral Particles: sc-91945-V as alternate gene silencing products.

For independent verification of PCDHB12 (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-91945A, sc-91945B and sc-91945C.

### PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

### APPLICATIONS

PCDHB12 siRNA (h) is recommended for the inhibition of PCDHB12 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  $\mu$ M in 66  $\mu$ 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 PCDHB12 gene expression knockdown using RT-PCR Primer: PCDHB12 (h)-PR: sc-91945-PR (20  $\mu$ 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.