SANTA CRUZ BIOTECHNOLOGY, INC.

Punc siRNA (h): sc-90198

BACKGROUND

Punc (putative neuronal cell adhesion molecule), also known as IGDCC3 (immunoglobulin superfamily DCC subclass member 3), is a 814 amino acid single-pass type I membrane protein that belongs to the immunoglobulin superfamily and the DCC family. The Punc protein exhibits a novel configuration of four Ig-like C2-type (immunoglobulin-like) domains and two fibronectin-type III repeats, and resembles proteins involved in axon guidance. Punc is highly expressed in the nervous system and limb buds of the developing mouse embryo, however, at midgestation expression levels of Punc decrease sharply. The Punc gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken and zebrafish, and maps to human chromosome 15q22.31. The Punc gene is located distal to the critical region for Stereocilin, also known as DFNB16 (deafness autosomal recessive type 16), which is a nonsyndromic recessive deafness locus that had been mapped to 15q22.31.

REFERENCES

1. Campbell, D.A., et al. 1997. A new locus for non-syndromal, autosomal recessive, sensorineural hearing loss (DFNB16) maps to human chromosome 15q21-q22. J. Med. Genet. 34: 1015-1017.
2. Salbaum, J.M. 1998. Punc, a novel mouse gene of the immunoglobulin superfamily, is expressed predominantly in the developing nervous system. Mech. Dev. 71: 201-204.
3. Villamar, M., et al. 1999. Deafness locus DFNB16 is located on chromosome 15q13-q21 within a 5-cM interval flanked by markers D15S994 and D15S132. Am. J. Hum. Genet. 64: 1238-1241.
4. Salbaum, J.M. 1999. Genomic structure and chromosomal localization of the mouse gene Punc. Mamm. Genome 10: 107-111.
5. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 604184. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Yang, W., et al. 2001. Impaired motor coordination in mice that lack punc. Mol. Cell. Biol. 21: 6031-6043.
7. Zody, M.C., et al. 2006. Analysis of the DNA sequence and duplication history of human chromosome 15. Nature 440: 671-675.

CHROMOSOMAL LOCATION

Genetic locus: IGDCC3 (human) mapping to 15q22.31.

PRODUCT

Punc 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 Punc shRNA Plasmid (h): sc-90198-SH and Punc shRNA (h) Lentiviral Particles: sc-90198-V as alternate gene silencing products.

For independent verification of Punc (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-90198A, sc-90198B and sc-90198C.

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

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

Punc (F-3): sc-514023 is recommended as a control antibody for monitoring of Punc 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 Punc gene expression knockdown using RT-PCR Primer: Punc (h)-PR: sc-90198-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.