SANTA CRUZ BIOTECHNOLOGY, INC.

KCTD11 siRNA (h): sc-93577

BACKGROUND

The BTB (broad-complex, tramtrack and bric a brac) domain, also known as the POZ (poxvirus and zinc finger) domain, is an N-terminal homodimerization domain that contains multiple copies of Kelch repeats and/or C_2H_2-type zinc fingers. Proteins that contain BTB domains are thought to be involved in transcriptional regulation via control of chromatin structure and function. KCTD11 (potassium channel tetramerisation domain containing 11), alternately known as BTB/POZ domain-containing protein KCTD11 or REN, is a 232 amino acid regulator of neuronal differentiation that induces growth arrest, apoptosis and the expression of p27, a cyclin-dependent kinase inhibitor. Expressed at highest levels in cerebellum, KCTD11 functions as an antagonist of the hedgehog pathway and activator of the caspase cascade. Haploinsufficiency of KCTD11 may be the cause of a malignant cerebellar embryonal tumor known as medulloblastoma (MDB).

REFERENCES

1. Rubin, J.B. and Rowitch, D.H. 2002. Medulloblastoma: a problem of developmental biology. Cancer Cell 2: 7-8.
2. Gallo, R., et al. 2002. REN: a novel, developmentally regulated gene that promotes neural cell differentiation. J. Cell Biol. 158: 731-740.
3. De Smaele, E., et al. 2004. Chromosome 17p deletion in human medulloblastoma: a missing checkpoint in the hedgehog pathway. Cell Cycle 3: 1263-1266.
4. Di Marcotullio, L., et al. 2004. REN(KCTD11) is a suppressor of hedgehog signaling and is deleted in human medulloblastoma. Proc. Natl. Acad. Sci. USA 101: 10833-10838.
5. Ferretti, E., et al. 2005. Hedgehog checkpoints in medulloblastoma: the chromosome 17p deletion paradigm. Trends Mol. Med. 11: 537-545.
6. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 609848. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: KCTD11 (human) mapping to 17p13.1.

PRODUCT

KCTD11 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 KCTD11 shRNA Plasmid (h): sc-93577-SH and KCTD11 shRNA (h) Lentiviral Particles: sc-93577-V as alternate gene silencing products.

For independent verification of KCTD11 (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-93577A, sc-93577B and sc-93577C.

PROTOCOLS

See our web site at 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 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

KCTD11 siRNA (h) is recommended for the inhibition of KCTD11 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KCTD11 gene expression knockdown using RT-PCR Primer: KCTD11 (h)-PR: sc-93577-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Yang, M., et al. 2021. KCTD11 inhibits progression of lung cancer by binding to β-catenin to regulate the activity of the Wnt and Hippo pathways. J. Cell. Mol. Med. 25: 9411-9426.

RESEARCH USE

For research use only, not for use in diagnostic procedures.