SANTA CRUZ BIOTECHNOLOGY, INC.

BTBD7 siRNA (h): sc-92326

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. BTBD7 (BTB/POZ domain-containing protein 7), also known as FUP1 (function unknown protein-1), is a 1,132 amino acid protein involved in tumor formation and stimulation of cell proliferation. BTBD7 contains two BTB (POZ) domains and is implicated in the formation of branched organs such as salivary glands and lung. Existing as five alternatively spliced isoforms, the gene encoding BTBD7 maps to human chromosome 14, which houses over 700 genes and comprises nearly 3.5% of the human genome. Chromosome 14 encodes the presinilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD).

REFERENCES

1. Pan, W., et al. 2001. FUP1, a gene associated with hepatocellular carcinoma, stimulates NIH/3T3 cell proliferation and tumor formation in nude mice. Biochem. Biophys. Res. Commun. 286: 1033-1038.
2. Pan, W., et al. 2001. Cloning and characterization of FUP1, a gene highly expressed in hepatocellular carcinoma. Sheng Wu Hua Xue Yu Sheng Wu Wu Li Xue Bao 33: 173-178.
3. Avramopoulos, D., et al. 2005. Linkage to chromosome 14q in Alzheimer's disease (AD) patients without psychotic symptoms. Am. J. Med. Genet. B Neuropsychiatr. Genet. 132B: 9-13.
4. Larner, A.J., et al. 2009. Genotype-phenotype relationships of presenilin-1 mutations in Alzheimer's disease: an update. J. Alzheimers Dis. 17: 259-265.
5. Topic, A., et al. 2009. α1-antitrypsin phenotypes in adult liver disease patients. Ups. J. Med. Sci. 114: 228-234.
6. Onodera, T., et al. 2010. BTBD7 regulates epithelial cell dynamics and branching morphogenesis. Science 329: 562-565.

CHROMOSOMAL LOCATION

Genetic locus: BTBD7 (human) mapping to 14q32.12.

PRODUCT

BTBD7 siRNA (h) is a pool of 2 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 BTBD7 shRNA Plasmid (h): sc-92326-SH and BTBD7 shRNA (h) Lentiviral Particles: sc-92326-V as alternate gene silencing products.

For independent verification of BTBD7 (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-92326A and sc-92326B.

RESEARCH USE

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

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

BTBD7 siRNA (h) is recommended for the inhibition of BTBD7 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 BTBD7 gene expression knockdown using RT-PCR Primer: BTBD7 (h)-PR: sc-92326-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. Fan, C., et al. 2014. BTBD7 contributes to reduced E-cadherin expression and predicts poor prognosis in non-small cell lung cancer. BMC Cancer 14: 704.
2. Fang, L.Z., et al. 2017. Silencing of BTBD7 inhibited epithelial-mesenchymal transition and chemoresistance in $CD133^+$ lung carcinoma A549 cells. Oncol. Res. 25: 819-829.
3. Liu, Y., et al. 2018. BTB/POZ domain-containing protein 7 is inversely associated with Fibronectin expression in salivary adenoid cystic carcinoma. Oral Surg. Oral Med. Oral Pathol. Oral Radiol. 125: 468-477.

PROTOCOLS

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