SANTA CRUZ BIOTECHNOLOGY, INC.

TTDN1 siRNA (m): sc-76771

BACKGROUND

TTDN1 (TTD non-photosensitive 1 protein), also known as C7orf11, ABHS or ORF20, is a 179 amino acid protein that localizes to the nucleus and shares 92% amino acid identity with its mouse counterpart. Expressed at high levels in kidney and liver and present at lower levels in placenta, heart, skeletal muscle, pancreas, lung and brain tissue, TTDN1 is thought to be involved in the maintenance of cell cycle integrity, specifically playing a role in the regulation of mitosis and cytokinesis. Defects in the gene encoding TTDN1 are associated with trichothiodystrophy non-photosensitive type 1 (TTDN1), which is also known as Amish brittle hair brain syndrome (ABHS) and is an autosomal recessive disorder that is characterized by decreased male fertility, short stature and brittle hair.

REFERENCES

1. Jackson, C.E., et al. 1974. "Brittle" hair with short stature, intellectual impairment and decreased fertility: an autosomal recessive syndrome in an Amish kindred. Pediatrics 54: 201-207.
2. Rizzo, R., et al. 1992. Trichothiodystrophy: report of a new case with severe nervous system impairment. J. Child Neurol. 7: 300-303.
3. Nakabayashi, K., et al. 2002. Molecular genetic studies of human chromosome 7 in Russell-Silver syndrome. Genomics 79: 186-196.
4. Nakabayashi, K., et al. 2005. Identification of C7orf11 (TTDN1) gene mutations and genetic heterogeneity in nonphotosensitive trichothiodystrophy. Am. J. Hum. Genet. 76: 510-516.
5. Zhang, Y., et al. 2007. TTDN1 is a Plk1-interacting protein involved in maintenance of cell cycle integrity. Cell. Mol. Life Sci. 64: 632-640.
6. Botta, E., et al. 2007. Mutations in the C7orf11 (TTDN1) gene in six nonphotosensitive trichothiodystrophy patients: no obvious genotype-phenotype relationships. Hum. Mutat. 28: 92-96.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 609188. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Mplkip (mouse) mapping to 13 A2.

PRODUCT

TTDN1 siRNA (m) 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 TTDN1 shRNA Plasmid (m): sc-76771-SH and TTDN1 shRNA (m) Lentiviral Particles: sc-76771-V as alternate gene silencing products.

For independent verification of TTDN1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76771A, sc-76771B and sc-76771C.

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

TTDN1 siRNA (m) is recommended for the inhibition of TTDN1 expression in mouse 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

TTDN1 (F-8): sc-393079 is recommended as a control antibody for monitoring of TTDN1 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 TTDN1 gene expression knockdown using RT-PCR Primer: TTDN1 (m)-PR: sc-76771-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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