SANTA CRUZ BIOTECHNOLOGY, INC.

TTC3 siRNA (h): sc-61732

BACKGROUND

Down syndrome is characterized by an extra copy of chromosome 21. The Down syndrome critical region (DSCR) maps specifically to chromosome 21q22.2 and includes several genes, which are likely associated with the pathogenesis of Down syndrome. Tetratricopeptide repeat domain 3 (TTC3), also refered to as DCRR1, is a 1,941 amino acid member of the DSCR family that contains three tetratricopeptide repeat (TPR) motifs, an N-terminal domain that is similar to many protein phosphatases, a transmembrane domain, and a C-terminal region that resembles Myosin heavy chains or proteins involved with cytoskeleton dynamics, including CENP-E. TTC3 is expressed in several tissues, including spleen, thymus, prostate and ovary, but not in placenta, lung or liver. Overexpression of TTC3 may be the cause of many various morphologic anomalies that occur in Down syndrome.

REFERENCES

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2. Eki, T., et al. 1997. Cloning and characterization of novel gene, DCRR1, expressed from Down's syndrome critical region of human chromosome 21q22.2. DNA Seq. 7: 153-164.
3. Tsukahara, F., et al. 1997. Identification and cloning of a novel cDNA belonging to tetratricopeptide repeat gene family from Down syndrome critical region 21q22.2. J. Biochem. 120: 820-827.
4. Tsukahara, F., et al. 1998. Molecular characterization of the mouse MTPRD gene, a homologue of human TPRD: unique gene expression suggesting its critical role in the pathophysiology of Down syndrome. J. Biochem. 123: 1055-1063.
5. Dahmane, N., et al. 1998. Transcriptional map of the 2.5-Mb CBR-ERG region of chromosome 21 involved in Down syndrome. Genomics 48: 12-23.
6. Taipale, M., et al. 2003. A candidate gene for developmental dyslexia encodes a nuclear tetratricopeptide repeat domain protein dynamically regulated in brain. Proc. Natl. Acad. Sci. USA 100: 11553-11558.
7. Main, E.R., et al. 2005. Local and long-range stability in tandemly arrayed tetratricopeptide repeats. Proc. Natl. Acad. Sci. USA 102: 5721-5726.

CHROMOSOMAL LOCATION

Genetic locus: TTC3 (human) mapping to 21q22.13.

PRODUCT

TTC3 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 TTC3 shRNA Plasmid (h): sc-61732-SH and TTC3 shRNA (h) Lentiviral Particles: sc-61732-V as alternate gene silencing products.

For independent verification of TTC3 (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-61732A, sc-61732B and sc-61732C.

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

TTC3 siRNA (h) is recommended for the inhibition of TTC3 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 TTC3 gene expression knockdown using RT-PCR Primer: TTC3 (h)-PR: sc-61732-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.