SANTA CRUZ BIOTECHNOLOGY, INC.

FTSJ1 siRNA (h): sc-90901

BACKGROUND

FTSJ1 (FtsJ homolog 1), also known as putative ribosomal RNA methyltransferase 1, rRNA (uridine-2'-O-)-methyltransferase, MRX44, JM23, SPB1, MRX9, TRM7 or CDLIV, is a 329 amino acid nucleolar protein belonging to the RlmE family and methyltransferase superfamily. Expressed in adult thalamus, hippocampus, amygdala, corpus callosum and caudate nucleus, as well as fetal kidney, lung, liver, brain and lung, FTSJ1 plays a role in rRNA modification and processing. FTSJ1 exists as multiple spliced isoforms which are encoded by a gene located on human chromosome Xp11.23. Notably, defects in the gene encoding FTSJ1 are the cause of mental retardation X-linked type 44 (MRX44) and nonsyndromic X-linked mental retardation (MRX9).

REFERENCES

1. Willems, P., et al. 1993. Localization of a gene responsible for nonspecific mental retardation (MRX9) to the pericentromeric region of the X chromosome. Genomics 18: 290-294.
2. Hamel, B.C., et al. 1999. Four families (MRX43, MRX44, MRX45, MRX52) with nonspecific X-linked mental retardation: clinical and psychometric data and results of linkage analysis. Am. J. Med. Genet. 85: 290-304.
3. Pintard, L., et al. 2000. Spb1p is a yeast nucleolar protein associated with Nop1p and Nop58p that is able to bind S-adenosyl-L-methionine *in vitro*. Mol. Cell. Biol. 20: 1370-1381.
4. Ropers, H.H., et al. 2003. Nonsyndromic X-linked mental retardation: where are the missing mutations? Trends Genet. 19: 316-320.
5. Freude, K., et al. 2004. Mutations in the FTSJ1 gene coding for a novel S-adenosylmethionine-binding protein cause nonsyndromic X-linked mental retardation. Am. J. Hum. Genet. 75: 305-309.
6. Ramser, J., et al. 2004. A splice site mutation in the methyltransferase gene FTSJ1 in Xp11.23 is associated with non-syndromic mental retardation in a large Belgian family (MRX9). J. Med. Genet. 41: 679-683.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 300499. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: FTSJ1 (human) mapping to Xp11.23.

PRODUCT

FTSJ1 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 FTSJ1 shRNA Plasmid (h): sc-90901-SH and FTSJ1 shRNA (h) Lentiviral Particles: sc-90901-V as alternate gene silencing products.

For independent verification of FTSJ1 (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-90901A, sc-90901B and sc-90901C.

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

FTSJ1 siRNA (h) is recommended for the inhibition of FTSJ1 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

FTSJ1 (B-2): sc-390355 is recommended as a control antibody for monitoring of FTSJ1 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 FTSJ1 gene expression knockdown using RT-PCR Primer: FTSJ1 (h)-PR: sc-90901-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.