SANTA CRUZ BIOTECHNOLOGY, INC.

Trmt2b siRNA (m): sc-108959

BACKGROUND

Trmt2b (tRNA (uracil-5-)-methyltransferase homolog) is a 504 amino acid member of the RNA M5U methyltransferase family. Trmt2b is believed to be an S-adenosyl-L-methionine-dependent methyltransferase that catalyzes the formation of 5-methyl-uridine at position 54 (M-5-U54) in all tRNA. Trmt2b may also have a role in tRNA stabilization or maturation. The gene that encodes Trmt2b is located on the human X chromosome which consists of about 153 million base pairs and nearly 1,000 genes. The combination of an X and Y chromosome lead to normal male development while two copies of X lead to normal female development. There are a number of conditions related to an unusual number and combination of sex chromosomes being inherited, including Turner's syndrome, Klinefelter's syndrome and Triple X syndrome. Color blindness, hemophilia, and Duchenne muscular dystrophy are well known X chromosome-linked conditions which affect males more frequently as males carry a single X chromosome.

REFERENCES

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2. Gu, X., et al. 1996. Interaction of tRNA (uracil-5-)-methyltransferase with NO2Ura-tRNA. Nucleic Acids Res. 24: 1059-1064.
3. Anantharaman, V., et al. 2001. TRAM, a predicted RNA-binding domain, common to tRNA uracil methylation and adenine thiolation enzymes. FEMS Microbiol. Lett. 197: 215-221.
4. Johansson, M.J. and Byström, A.S. 2002. Dual function of the tRNA(m(5) U54)methyltransferase in tRNA maturation. RNA 8: 324-335.
5. Choudhury, S.A., et al. 2007. Functional and genetic analysis of the *Saccharomyces cerevisiae* RNC1/TRM2: evidences for its involvement in DNA double-strand break repair. Mol. Cell. Biochem. 300: 215-226.
6. Choudhury, S.A., et al. 2007. Synergistic effect of TRM2/RNC1 and EXO1 in DNA double-strand break repair in *Saccharomyces cerevisiae*. Mol. Cell. Biochem. 304: 127-134.

CHROMOSOMAL LOCATION

Genetic locus: Trmt2b (mouse) mapping to X E3.

PRODUCT

Trmt2b 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 Trmt2b shRNA Plasmid (m): sc-108959-SH and Trmt2b shRNA (m) Lentiviral Particles: sc-108959-V as alternate gene silencing products.

For independent verification of Trmt2b (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-108959A, sc-108959B and sc-108959C.

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

Trmt2b siRNA (m) is recommended for the inhibition of Trmt2b 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Trmt2b gene expression knockdown using RT-PCR Primer: Trmt2b (m)-PR: sc-108959-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. Hsueh, Y.J., et al. 2023. Transcription factor ATF3 participates in δNp63-mediated proliferation of corneal epithelial cells. J. Pers. Med. 13: 700.

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.