SANTA CRUZ BIOTECHNOLOGY, INC.

MTRF1 siRNA (h): sc-106261

BACKGROUND

MTRF1 (mitochondrial translational release factor 1), also known as RF1 or MRF1, is a 445 amino acid protein that localizes to the mitochondrion and belongs to the prokaryotic/mitochondrial release factor family of chain-terminating proteins. Functioning in a similar manner to related yeast and bacterial proteins, MTRF1 acts as a peptide chain release factor that directs translational termination, specifically in response to the stop codons AGG and AGA. The gene encoding MTRF1 maps to human chromosome 13, which houses over 400 genes, such as BRCA2 and RB1, and comprises nearly 4% of the human genome. Trisomy 13, also known as Patau syndrome, is deadly and the few who survive past one year suffer from permanent neurologic defects, difficulty eating and vulnerability to serious respiratory infections.

REFERENCES

1. Zhang, Y. and Spremulli, L.L. 1998. Identification and cloning of human mitochondrial translational release factor 1 and the ribosome recycling factor. Biochim. Biophys. Acta 1443: 245-250.
2. Hansen, L.L., et al. 2000. Assignment of the human mitochondrial translational release factor 1 (MTRF1) to chromosome 13q14.1→q14.3 and of the human mitochondrial ribosome recycling factor (MRRF) to chromosome 9q32→q34.1 with radiation hybrid mapping. Cytogenet. Cell Genet. 88: 91-92.
3. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 604601. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Lekomtsev, S.A. 2007. Non-standard genetic codes and translation termination. Mol. Biol. 41: 964-972.

CHROMOSOMAL LOCATION

Genetic locus: MTRF1 (human) mapping to 13q14.11.

PRODUCT

MTRF1 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 MTRF1 shRNA Plasmid (h): sc-106261-SH and MTRF1 shRNA (h) Lentiviral Particles: sc-106261-V as alternate gene silencing products.

For independent verification of MTRF1 (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-106261A, sc-106261B and sc-106261C.

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

MTRF1 siRNA (h) is recommended for the inhibition of MTRF1 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 MTRF1 gene expression knockdown using RT-PCR Primer: MTRF1 (h)-PR: sc-106261-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.