SANTA CRUZ BIOTECHNOLOGY, INC.

RNase T2 siRNA (h): sc-95611

BACKGROUND

Ribonucleases are ubiquitous enzymes involved in RNA metabolism and are classified in several families on the basis of their structural, catalytic and biological properties. RNase T2 (Ribonuclease T2), also known as RNASE6PL, is a 256 amino acid secreted glycoprotein that belongs to the highly conserved family of cytoplasmic RNases. Existing as two isoforms due to alternative splicing events, RNase T2 acts as a class II tumor suppressor. Ubiquitously expressed, RNase T2 is suggested to play an important role in regulating tumourigenesis and metastatization. Mutations in the gene encoding RNase T2 leads to cystic leukoencephalopathy, an autosomal recessive disorder with an indistinguishable clinical and neuroradiological phenotype. RNASET2 deficiency may interfere with brain development and myelination through angiogenesis or RNA metabolism.

REFERENCES

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2. Lin, H. and Morin, P.J. 2001. A novel homozygous deletion at chromosomal band 6q27 in an ovarian cancer cell line delineates the position of a putative tumor suppressor gene. Cancer Lett. 173: 63-70.
3. Acquati, F., et al. 2001. Cloning and characterization of a senescence inducing and class II tumor suppressor gene in ovarian carcinoma at chromosome region 6q27. Oncogene 20: 980-988.
4. Acquati, F., et al. 2005. Tumor and metastasis suppression by the human RNASET2 gene. Int. J. Oncol. 26: 1159-1168.
5. Campomenosi, P., et al. 2006. Characterization of RNASET2, the first human member of the Rh/T2/S family of glycoproteins. Arch. Biochem. Biophys. 449: 17-26.
6. Smirnoff, P., et al. 2006. A recombinant human RNASET2 glycoprotein with antitumorigenic and antiangiogenic characteristics: expression, purification, and characterization. Cancer 107: 2760-2769.
7. Monti, L., et al. 2008. RNASET2 as a tumor antagonizing gene in a melanoma cancer model. Oncol. Res. 17: 69-74.

CHROMOSOMAL LOCATION

Genetic locus: RNASET2 (human) mapping to 6q27.

PRODUCT

RNase T2 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 RNase T2 shRNA Plasmid (h): sc-95611-SH and RNase T2 shRNA (h) Lentiviral Particles: sc-95611-V as alternate gene silencing products.

For independent verification of RNase T2 (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-95611A, sc-95611B and sc-95611C.

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

RNase T2 siRNA (h) is recommended for the inhibition of RNase T2 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

RNase T2 (E-5): sc-393729 is recommended as a control antibody for monitoring of RNase T2 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 RNase T2 gene expression knockdown using RT-PCR Primer: RNase T2 (h)-PR: sc-95611-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.