

RTEL1 siRNA (h): sc-76438

BACKGROUND

RTEL1 (regulator of telomere elongation helicase 1), also known as C20orf41, KIAA1088 or NHL, is a 1,400 amino acid nuclear protein that contains one helicase ATP-binding domain and belongs to the helicase family of DNA-binding proteins. In mice, RTEL1 is required for telomere elongation and is an important regulator of chromosome stability. Human RTEL1 is highly expressed in kidney and intestine and, existing as a functional ortholog of its mouse counterpart, is thought to act as an ATP-dependent helicase that may regulate chromosome function and genomic stability. The gene encoding RTEL1 maps to a gene-rich cluster on chromosome 20 that is thought to house a number of tumor-related genes, suggesting that RTEL1 may play a role in tumorigenesis. Multiple isoforms of RTEL1 exist due to alternative splicing events.

REFERENCES

1. Zhu, L., et al. 1998. Telomere length regulation in mice is linked to a novel chromosome locus. *Proc. Natl. Acad. Sci. USA* 95: 8648-8653.
2. Bai, C., et al. 2000. Overexpression of M68/DcR3 in human gastrointestinal tract tumors independent of gene amplification and its location in a four-gene cluster. *Proc. Natl. Acad. Sci. USA* 97: 1230-1235.
3. Ding, H., et al. 2004. Regulation of murine telomere length by RTEL: an essential gene encoding a helicase-like protein. *Cell* 117: 873-886.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 608833. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Villeneuve, A.M. 2008. Ensuring an exit strategy: RTEL1 restricts rogue recombination. *Cell* 135: 213-215.

CHROMOSOMAL LOCATION

Genetic locus: RTEL1 (human) mapping to 20q13.33.

PRODUCT

RTEL1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RTEL1 shRNA Plasmid (h): sc-76438-SH and RTEL1 shRNA (h) Lentiviral Particles: sc-76438-V as alternate gene silencing products.

For independent verification of RTEL1 (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-76438A, sc-76438B and sc-76438C.

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.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCL, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RTEL1 siRNA (h) is recommended for the inhibition of RTEL1 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 μ M in 66 μ l. 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

RTEL1 (H-5): sc-515427 is recommended as a control antibody for monitoring of RTEL1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 RTEL1 gene expression knockdown using RT-PCR Primer: RTEL1 (h)-PR: sc-76438-PR (20 μ l, 446 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.