SANTA CRUZ BIOTECHNOLOGY, INC.

REXO2 siRNA (h): sc-96458

BACKGROUND

Proper DNA and RNA metabolism requires nucleases which function in DNA replication, recombination and repair, as well as in RNA processing and degradation events. REXO2 (RNA exonuclease 2), also called RFN or SFN, is the human homolog of the *E. coli* exoribonuclease ORN. Functioning as a 3'-to-5' exoribonuclease, REXO2 degrades single-stranded RNA or DNA and, based on its similarity with ORN, may be involved in cellular responses to DNA-damaging agents. Additionally, REXO2 is implicated in cellular nucleotide recycling and can use manganese as a cofactor. Two isoforms of REXO2 exist due to alternative splicing events. Isoform 1 is localized to the mitochondria, while isoform 2 is localized to the nucleus.

REFERENCES

1. Nguyen, L.H., et al. 2000. The human homolog of *Escherichia coli* ORN degrades small single-stranded RNA and DNA oligomers. J. Biol. Chem. 275: 25900-25906.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607149. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Zhang, X.X., et al. 2004. Functional and phylogenetic analysis of a plant-inducible oligoribonuclease (ORN) gene from an indigenous *Pseudomonas plasmid*. Microbiology 150: 2889-2898.
4. Ito, S., et al. 2004. Involvement of human small fragment nuclease in the resistance of human cells to UV-C-induced cell death. Photochem. Photobiol. 80: 281-285.
5. Young Park, A., et al. 2008. Hydrolysis of the 5'-p-nitrophenyl ester of TMP by oligoribonucleases (ORN) from *Escherichia coli*, *Mycobacterium smegmatis*, and human. Protein Expr. Purif. 57: 180-187.

CHROMOSOMAL LOCATION

Genetic locus: REXO2 (human) mapping to 11q23.2.

PRODUCT

REXO2 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 REXO2 shRNA Plasmid (h): sc-96458-SH and REXO2 shRNA (h) Lentiviral Particles: sc-96458-V as alternate gene silencing products.

For independent verification of REXO2 (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-96458A, sc-96458B and sc-96458C.

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 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

REXO2 siRNA (h) is recommended for the inhibition of REXO2 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

REXO2 (H-7): sc-166726 is recommended as a control antibody for monitoring of REXO2 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 REXO2 gene expression knockdown using RT-PCR Primer: REXO2 (h)-PR: sc-96458-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.