SANTA CRUZ BIOTECHNOLOGY, INC.

REM2 siRNA (h): sc-92154

BACKGROUND

REM2 (RAS (RAD and GEM)-like GTP binding 2) is a 340 amino acid cell membrane protein that functions as a GTPase and belongs to the RGK family as well as the small GTPase superfamily. A suppressor of the p53 pathway, REM2 also mediates the fibroblastic growth factor 2 (FGF-2) signaling pathway and is involved in maintaining the proliferation of human embryonic stem cells. Expressed in kidney and brain, REM2 is encoded by a gene that maps to human chromosome 14q11.2. Chromosome 14 encodes the presinilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD). The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder α1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction.

REFERENCES

1. Finlin, B.S., et al. 2000. Rem2, a new member of the Rem/Rad/Gem/Kir family of Ras-related GTPases. Biochem. J. 347: 223-231.
2. Avramopoulos, D., et al. 2005. Linkage to chromosome 14q in Alzheimer's disease (AD) patients without psychotic symptoms. Am. J. Med. Genet. B Neuropsychiatr. Genet. 132B: 9-13.
3. Finlin, B.S., et al. 2005. Regulation of L-type Ca^{2+} channel activity and Insulin secretion by the Rem2 GTPase. J. Biol. Chem. 280: 41864-41871.
4. Bierings, R., et al. 2008. An endothelial cell genetic screen identifies the GTPase Rem2 as a suppressor of p19ARF expression that promotes endothelial cell proliferation and angiogenesis. J. Biol. Chem. 283: 4408-4416.

CHROMOSOMAL LOCATION

Genetic locus: REM2 (human) mapping to 14q11.2.

PRODUCT

REM2 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 REM2 shRNA Plasmid (h): sc-92154-SH and REM2 shRNA (h) Lentiviral Particles: sc-92154-V as alternate gene silencing products.

For independent verification of REM2 (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-92154A, sc-92154B and sc-92154C.

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

REM2 siRNA (h) is recommended for the inhibition of REM2 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

REM2 (C-11): sc-514999 is recommended as a control antibody for monitoring of REM2 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 REM2 gene expression knockdown using RT-PCR Primer: REM2 (h)-PR: sc-92154-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. Chai, S., et al. 2018. Physiological genomics identifies genetic modifiers of long QT syndrome type 2 severity. J. Clin. Invest. 128: 1043-1056.

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.