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SANTA CRUZ BIOTECHNOLOGY, INC.

RCAN2 siRNA (m): sc-152768

BACKGROUND

RCAN2, also known as calcipressin-2 or thyroid hormone-responsive protein ZAKI-4, is a 197 amino acid protein that belongs to the RCAN family. RCAN2 is a known inhibitor of calcineurin-dependent transcriptional responses by binding to the catalytic domain of calcineurin A and could play a role during central nervous system development. It is suggested that RCAN2 is constitutively expressed in endothelial cells and acts similar to DSCR1 (Down syndrome candidate region 1) in inhibiting calcineurin activity and restraining VEGF-mediated angiogenesis. RCAN2 is expressed in fibroblasts, heart, brain, liver and skeletal muscle but not in placenta, lung, kidney and pancreas. Expression of RCAN2 is upregulated by physiologic concentrations of triiodothyroxine. The RCAN2 gene exists as two alternatively spliced isoforms, is conserved in chimpanzee, canine, bovine, mouse, rat, chicken, zebrafish, fruit fly and mosquito, and maps to human chromosome 6p21.1.

REFERENCES

1. Miyazaki, T., et al. 1996. Molecular cloning of a novel thyroid hormone-responsive gene, ZAKI-4, in human skin fibroblasts. J. Biol. Chem. 271: 14567-14571.
2. Strippoli, P., et al. 2000. A new gene family including DSCR1 (Down Syndrome Candidate Region 1) and ZAKI-4: characterization from yeast to human and identification of DSCR1-like 2, a novel human member (DSCR1L2). Genomics 64: 252-263.
3. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604876. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Cao, X., et al. 2002. Novel human ZAKI-4 isoforms: hormonal and tissue-specific regulation and function as calcineurin inhibitors. Biochem. J. 367: 459-466.
5. Qin, L., et al. 2006. Down syndrome candidate region 1 isoform 1 mediates angiogenesis through the calcineurin-NFAT pathway. Mol. Cancer Res. 4: 811-820.

CHROMOSOMAL LOCATION

Genetic locus: Rcan2 (mouse) mapping to 17 B3.

PRODUCT

RCAN2 siRNA (m) 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 RCAN2 shRNA Plasmid (m): sc-152768-SH and RCAN2 shRNA (m) Lentiviral Particles: sc-152768-V as alternate gene silencing products.

For independent verification of RCAN2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-152768A, sc-152768B and sc-152768C.

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

RCAN2 siRNA (m) is recommended for the inhibition of RCAN2 expression in mouse 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 RCAN2 gene expression knockdown using RT-PCR Primer: RCAN2 (m)-PR: sc-152768-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.