

## RCAN3 siRNA (m): sc-72778

### BACKGROUND

RCAN3 (regulator of calcineurin 3), also known as Calcipressin-3, DSCR1L2 (Down syndrome candidate region 1-like protein 2) and MCIP3 (myocyte-enriched calcineurin-interacting protein 3), is a 241 amino acid protein that potentially is involved in central nervous system development. As its name suggests, RCAN3 binds to calcineurin. Overexpression of RCAN3 results in inhibition of calcineurin activity towards the nuclear factor of activated T-cells (NFAT) transcription factors and also downregulates NFAT-dependent cytokine gene expression in activated Jurkat T-cells. Though expressed ubiquitously at low levels, high expression of RCAN3 is found in kidney, heart, liver, peripheral blood lymphocytes and skeletal muscle. RCAN3 also interacts with cardiac troponin I, suggesting that it may play a role in cardiac contraction events. There are two isoforms of RCAN3 that are produced as a result of alternative splicing events.

### REFERENCES

1. Strippoli, P., et al. 2000. The murine DSCR1-like (Down syndrome candidate region 1) gene family: conserved syntenic with the human orthologous genes. *Gene* 257: 223-232.
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 DSCR 1-like 2, a novel human member (DSCR1L2). *Genomics* 64: 252-263.
3. Ermak, G., et al. 2006. RCAN1 (DSCR 1 or Adapt78) stimulates expression of GSK-3 $\beta$ . *FEBS J.* 273: 2100-2109.
4. Canaider, S., et al. 2006. Proteins encoded by human down syndrome critical region gene 1-like 2 (DSCR1L2) mRNA and by a novel DSCR 1L2 mRNA isoform interact with cardiac Troponin I (TNNI3). *Gene* 372: 128-136.
5. Abbasi, S., et al. 2006. Protein kinase-mediated regulation of calcineurin through the phosphorylation of modulatory calcineurin-interacting protein 1. *J. Biol. Chem.* 281: 7717-7726.
6. Zobel, C., et al. 2007. Mechanisms of Ca<sup>2+</sup>-dependent calcineurin activation in mechanical stretch-induced hypertrophy. *Cardiology* 107: 281-290.

### CHROMOSOMAL LOCATION

Genetic locus: Rcan3 (mouse) mapping to 4 D3.

### PRODUCT

RCAN3 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RCAN3 shRNA Plasmid (m): sc-72778-SH and RCAN3 shRNA (m) Lentiviral Particles: sc-72778-V as alternate gene silencing products.

For independent verification of RCAN3 (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-72778A, sc-72778B and sc-72778C.

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

### APPLICATIONS

RCAN3 siRNA (m) is recommended for the inhibition of RCAN3 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  $\mu$ M in 66  $\mu$ 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.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RCAN3 gene expression knockdown using RT-PCR Primer: RCAN3 (m)-PR: sc-72778-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.