SANTA CRUZ BIOTECHNOLOGY, INC.

CANT1 siRNA (h): sc-94075

BACKGROUND

CANT1 (calcium activated nucleotidase 1), also known as apyrase homolog, DBQD, SCAN1 (soluble calcium-activated nucleotidase 1) or SHAPY, is a 401 amino acid single-pass type II membrane protein of the endoplasmic reticulum and Golgi apparatus. A member of the apyrase family, CANT1 functions as a calcium-dependent nucleotidase that preferentially binds UDP. CANT1 is expressed at highest levels in testis, placenta, prostate and small intestine, and undergoes post-translational N-glycosylation and alternative splicing events to produce two isoforms. Homozygous mutation in the gene encoding CANT1 is the cause of Desbuquois dysplasia, an autosomal recessive chondrodysplasia in which extreme prenatal and postnatal growth retardation is observed.

REFERENCES

1. Faivre, L., et al. 2004. Clinical and genetic heterogeneity in Desbuquois dysplasia. Am. J. Med. Genet. A 128A: 29-32.
2. Yang, M., et al. 2004. Site-directed mutagenesis of human soluble calcium-activated nucleotidase 1 (hSCAN-1): identification of residues essential for enzyme activity and the Ca^{2+}-induced conformational change. Biochemistry 43: 9185-9194.
3. Yang, M., et al. 2008. Characterization and importance of the dimer interface of human calcium-activated nucleotidase. Biochemistry 47: 771-778.
4. Hermans, K.G., et al. 2008. Two unique novel prostate-specific and androgen-regulated fusion partners of ETV4 in prostate cancer. Cancer Res. 68: 3094-3098.
5. Yang, M., et al. 2008. Engineered human soluble calcium-activated nucleotidase inhibits coagulation *in vitro* and thrombosis *in vivo.* Thromb. Res. 122: 541-548.
6. Huber, C., et al. 2009. Identification of CANT1 mutations in Desbuquois dysplasia. Am. J. Hum. Genet. 85: 706-710.
7. Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 613165. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: CANT1 (human) mapping to 17q25.3.

PRODUCT

CANT1 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 CANT1 shRNA Plasmid (h): sc-94075-SH and CANT1 shRNA (h) Lentiviral Particles: sc-94075-V as alternate gene silencing products.

For independent verification of CANT1 (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-94075A, sc-94075B and sc-94075C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

CANT1 siRNA (h) is recommended for the inhibition of CANT1 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

CANT1 (C-3): sc-515574 is recommended as a control antibody for monitoring of CANT1 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 CANT1 gene expression knockdown using RT-PCR Primer: CANT1 (h)-PR: sc-94075-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.