SANTA CRUZ BIOTECHNOLOGY, INC.

CAMTA1 siRNA (h): sc-72783

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The Power to Question

BACKGROUND

The level of intracellular calcium is tightly regulated in all eukaryotic cells. A modest increase in this level can result in a myriad of physiological responses, most of which are mediated by calmodulin (CaM), the universal calcium sensor. CaM directly modulates the activity of protein kinases and phosphatases, ion channels and nitric oxide synthetases. CaM is generally involved in such diverse processes as cell proliferation, endocytosis, cellular adhesion, protein turnover and smooth muscle contraction. CAMTA1 (calmodulin binding transcription activator 1), also known as KIAA0833, is a 1,673 amino acid protein that localizes to both the nucleus and the cytoplasm and contains one IPT/TIG domain, one CG-1 DNA-binding domain, three ANK repeats and three IQ domains. Expressed in brain tissue, as well as in heart and kidney, CAMTA1 interacts with CaM and is thought to function as a transcriptional activator, effecting the transcription level of target genes and possibly regulating CaM activity. Additionally, CAMTA1 may play a role in tumor suppression and, when defective, is involved in oligodendroglioma and astrocytoma.

REFERENCES

1. Nakajima, D., et al. 2002. Construction of expression-ready cDNA clones for KIAA genes: manual curation of 330 KIAA cDNA clones. DNA Res. 9: 99-106.
2. Bouche, N., et al. 2002. A novel family of calmodulin-binding transcription activators in multicellular organisms. J. Biol. Chem. 277: 21851-21861.
3. Nakatani, K., et al. 2004. Cell cycle-dependent transcriptional regulation of calmodulin-binding transcription activator 1 in neuroblastoma cells. Int. J. Oncol. 24: 1407-1412.
4. Barbashina, V., et al. 2005. Allelic losses at 1p36 and 19q13 in gliomas: correlation with histologic classification, definition of a 150-kb minimal deleted region on 1p36, and evaluation of CAMTA1 as a candidate tumor suppressor gene. Clin. Cancer Res. 11: 1119-1128.
5. Song, K., et al. 2006. The transcriptional coactivator CAMTA2 stimulates cardiac growth by opposing class II histone deacetylases. Cell 125: 453-466.

CHROMOSOMAL LOCATION

Genetic locus: CAMTA1 (human) mapping to 1p36.31.

PRODUCT

CAMTA1 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 CAMTA1 shRNA Plasmid (h): sc-72783-SH and CAMTA1 shRNA (h) Lentiviral Particles: sc-72783-V as alternate gene silencing products.

For independent verification of CAMTA1 (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-72783A, sc-72783B and sc-72783C.

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

CAMTA1 siRNA (h) is recommended for the inhibition of CAMTA1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CAMTA1 gene expression knockdown using RT-PCR Primer: CAMTA1 (h)-PR: sc-72783-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.