SANTA CRUZ BIOTECHNOLOGY, INC.

CAMTA2 siRNA (m): sc-141998

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The Power to Question

BACKGROUND

CAMTA2 (calmodulin binding transcription activator 2), also known as KIAA0909, is a 1,202 amino acid protein that localizes to the nucleus and contains one IPT/TIG domain, one CG-1 domain, two IQ domains and three ANK repeats. Expressed in brain tissue, CAMTA2 is thought to interact with calmodulin (CaM) and may function as a transcriptional activator, possibly playing a role in tumor suppression. Multiple isoforms of CAMTA2 exist due to alternative splicing events. The gene encoding CAMTA2 maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

REFERENCES

1. Bouche, N., et al. 2002. A novel family of calmodulin-binding transcription activators in multicellular organisms. J. Biol. Chem. 277: 21851-21861.
2. 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.
3. Schwartz, R.J., et al. 2006. CAMTA in cardiac hypertrophy. Cell 125: 427-429.
4. Song, K., et al. 2006. The transcriptional coactivator CAMTA2 stimulates cardiac growth by opposing class II histone deacetylases. Cell 125: 453-466.
5. Liu, N., et al. 2006. Coactivator control of cardiovascular growth and remodeling. Curr. Opin. Cell Biol. 18: 715-722.
6. Finkler, A., et al. 2007. CAMTAs: calmodulin-binding transcription activators from plants to human. FEBS Lett. 581: 3893-3898.

CHROMOSOMAL LOCATION

Genetic locus: Camta2 (mouse) mapping to 11 B3.

PRODUCT

CAMTA2 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 CAMTA2 shRNA Plasmid (m): sc-141998-SH and CAMTA2 shRNA (m) Lentiviral Particles: sc-141998-V as alternate gene silencing products.

For independent verification of CAMTA2 (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-141998A, sc-141998B and sc-141998C.

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

CAMTA2 siRNA (m) is recommended for the inhibition of CAMTA2 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 CAMTA2 gene expression knockdown using RT-PCR Primer: CAMTA2 (m)-PR: sc-141998-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.