SANTA CRUZ BIOTECHNOLOGY, INC.

SAMD9 siRNA (h): sc-89746

BACKGROUND

SAMD9 (sterile α motif domain-containing protein 9), also known as C7orf5, DRIF1, KIAA2004, OEF1 or NFTC, is a 1,589 amino acid protein that localizes to the cytoplasm and contains one SAM (sterile α motif) domain. Expressed in a variety of tissues with particularly low levels in skeletal muscle, SAMD9 plays a role in extraosseous calcification (calcification outside of the bone), a process that is important in the pathogenesis of a wide range of diseases, including cancers and autoimmune disorders. Overexpression of SAMD9 is associated with reduced cell proliferation and motility, increased rates of apoptosis, and overall reduced tumor formation, all of which suggest that SAMD9 functions as a tumor suppressor. Conversely, defects in the gene encoding SAMD9 are the cause of normophosphatemic familial tumoral calcinosis (NFTC), a life-threatening disorder characterized by the formation of calcified tumors. Multiple isoforms of SAMD9 exist due to alternative splicing events.

REFERENCES

1. Smack, D., et al. 1996. Proposal for a pathogenesis-based classification of tumoral calcinosis. Int. J. Dermatol. 35: 265-271.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610456. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Topaz, O., et al. 2004. Mutations in GALNT3, encoding a protein involved in O-linked glycosylation, cause familial tumoral calcinosis. Nat. Genet. 36: 579-581.
4. Topaz, O., et al. 2006. A deleterious mutation in SAMD9 causes normophosphatemic familial tumoral calcinosis. Am. J. Hum. Genet. 79: 759-764.
5. Atzeni, F., et al. 2006. Calcium deposition and associated chronic diseases (atherosclerosis, diffuse idiopathic skeletal hyperostosis, and others). Rheum. Dis. Clin. North Am. 32: 413-426.
6. Li, C.F., et al. 2007. Human sterile α motif domain 9, a novel gene identified as down-regulated in aggressive fibromatosis, is absent in the mouse. BMC Genomics 8: 92.

CHROMOSOMAL LOCATION

Genetic locus: SAMD9 (human) mapping to 7q21.2.

PRODUCT

SAMD9 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 SAMD9 shRNA Plasmid (h): sc-89746-SH and SAMD9 shRNA (h) Lentiviral Particles: sc-89746-V as alternate gene silencing products.

For independent verification of SAMD9 (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-89746A, sc-89746B and sc-89746C.

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

SAMD9 siRNA (h) is recommended for the inhibition of SAMD9 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 SAMD9 gene expression knockdown using RT-PCR Primer: SAMD9 (h)-PR: sc-89746-PR (20 µl, 497 bp). 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 for detailed protocols and support products.