SANTA CRUZ BIOTECHNOLOGY, INC.

SAMD4A siRNA (h): sc-92315

BACKGROUND

Sterile α motifs (SAMs) in proteins such as SAMD4A are part of an RNA-binding domain that functions as a posttranscriptional regulator by binding to an RNA sequence motif known as the Smaug recognition element, which was named after the *Drosophila* Smaug protein. SAMD4A (sterile α motif domain-containing protein 4A) is a 718 amino acid protein that contains one SAM (sterile α motif) domain and belongs to the SMAUG family. SAMD4A shuttles between the nucleus and the cytoplasm in a CRM1-dependent manner. Colocalizing throughout the cytoplasm in granules with polyadenylated RNAs, PABPC1 and STAU1, SAMD4A also frequently colocalizes in cytoplasmic stress granule-like foci with ELAVL1, TIA1 and TIAL1. Existing as three alternatively spliced isoforms, the SAMD4A gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken and zebrafish, and maps to human chromosome 14q22.2.

REFERENCES

1. Kikuno, R., et al. 1999. Prediction of the coding sequences of unidentified human genes. XIV. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 6: 197-205.
2. Heilig, R., et al. 2003. The DNA sequence and analysis of human chromosome 14. Nature 421: 601-607.
3. Baez, M.V., et al. 2005. Mammalian Smaug is a translational repressor that forms cytoplasmic foci similar to stress granules. J. Biol. Chem. 280: 43131-43140.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610747. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Hayashi, S., et al. 2008. Heterozygous deletion at 14q22.1-q22.3 including the BMP4 gene in a patient with psychomotor retardation, congenital corneal opacity and feet polysyndactyly. Am. J. Med. Genet. A 146A: 2905-2910.
6. Reich, H.N., et al. 2010. A molecular signature of proteinuria in glomerulonephritis. PLoS ONE 5: e13451.
7. Papantonis, A., et al. 2011. Fixing the model for transcription: the DNA moves, not the polymerase. Transcription 2: 41-44.

CHROMOSOMAL LOCATION

Genetic locus: SAMD4A (human) mapping to 14q22.2.

PRODUCT

SAMD4A 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 SAMD4A shRNA Plasmid (h): sc-92315-SH and SAMD4A shRNA (h) Lentiviral Particles: sc-92315-V as alternate gene silencing products.

For independent verification of SAMD4A (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-92315A, sc-92315B and sc-92315C.

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

SAMD4A siRNA (h) is recommended for the inhibition of SAMD4A 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 SAMD4A gene expression knockdown using RT-PCR Primer: SAMD4A (h)-PR: sc-92315-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Shi, W., et al. 2017. HNF-4α negatively regulates hepcidin expression through BMPR1A in Hep G2 cells. Biol. Trace Elem. Res. 176: 294-304.

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.