



RBM14 siRNA (h): sc-96838

BACKGROUND

RBM14 (RNA-binding protein 14), also known as SIP, CoAA, PSP2, SYTIP1 or TMEM137, is a 669 amino acid protein that localizes to the nucleus and contains two RRM (RNA recognition motif) domains. Expressed ubiquitously with higher expression in heart, brain, liver, kidney, colon, lung and skeletal muscle, RBM14 exists as two alternatively spliced isoforms which exhibit different cellular functions. Isoform 1, designated CoAA, is thought to function as a nuclear receptor coactivator which interacts with MSG1 and PRIP and, via these interactions, may enhance transcription. Alternatively, isoform 2, known as CoAM, is thought to function as a transcriptional repressor which may modulate the transcriptional activities of coactivators, including CoAA. Via its ability to control transcription, RBM14 may be involved in the pathogenesis of several cancers, such as kidney cell carcinoma.

REFERENCES

1. Iwasaki, T., et al. 2001. Identification and characterization of RRM-containing coactivator activator (CoAA) as TRBP-interacting protein, and its splice variant as a coactivator modulator (CoAM). *J. Biol. Chem.* 276: 33375-33383.
2. Fox, A.H., et al. 2002. Paraspeckles: a novel nuclear domain. *Curr. Biol.* 12: 13-25.
3. Perani, M., et al. 2005. The proto-oncoprotein SYT interacts with SYT-interacting protein/co-activator activator (SIP/CoAA), a human nuclear receptor co-activator with similarity to EWS and TLS/FUS family of proteins. *J. Biol. Chem.* 280: 42863-42876.

CHROMOSOMAL LOCATION

Genetic locus: RBM14 (human) mapping to 11q13.2.

PRODUCT

RBM14 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RBM14 shRNA Plasmid (h): sc-96838-SH and RBM14 shRNA (h) Lentiviral Particles: sc-96838-V as alternate gene silencing products.

For independent verification of RBM14 (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-96838A, sc-96838B and sc-96838C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RBM14 siRNA (h) is recommended for the inhibition of RBM14 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 μ M in 66 μ l. 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

RBM14 (4E1): sc-517183 is recommended as a control antibody for monitoring of RBM14 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 RBM14 gene expression knockdown using RT-PCR Primer: RBM14 (h)-PR: sc-96838-PR (20 μ l, 512 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Budhiraja, S., et al. 2015. Mining the human complexome database identifies RBM14 as an XPO1-associated protein involved in HIV-1 Rev function. *J. Virol.* 89: 3557-67.
2. Jang, Y., et al. 2020. Intrinsically disordered protein RBM14 plays a role in generation of RNA:DNA hybrids at double-strand break sites. *Proc. Natl. Acad. Sci. USA* 117: 5329-5338.
3. Wang, Y., et al. 2023. The RNA-binding motif protein 14 regulates telomere integrity at the interface of TERRA and telomeric R-loops. *Nucleic Acids Res.* 51: 12242-12260.

RESEARCH USE

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