

hnRNP Q siRNA (h): sc-72096

BACKGROUND

Pre-mRNA splicing is a critical step in the posttranscriptional regulation of gene expression. Heterogeneous nuclear ribonucleoprotein Q (hnRNP Q) is involved in RNA processing and is necessary for efficient pre-mRNA splicing. hnRNP is widely expressed and developmentally regulated. hnRNP Q interacts with survival motor neuron protein (SMN). Loss of function of SMN results in spinal muscular atrophy, a common neurodegenerative disease. The most common deletion in SMN genes disrupts the interaction between SMN and hnRNP Q. hnRNP Q is upregulated after midnight, and this upregulation correlates with an abrupt decline in AANAT, the key enzyme in melatonin synthesis. Rhythmic AANAT mRNA degradation mediated in part by hnRNP Q implicates this enzyme in the regulation of circadian oscillation.

REFERENCES

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2. Thebault, S., et al. 2000. Two-dimensional electrophoresis and mass spectrometry identification of proteins bound by a murine monoclonal anti-cardiolipin antibody: a powerful technique to characterize the cross-reactivity of a single autoantibody. *Electrophoresis* 21: 2531-2539.
3. Mourelatos, Z., et al. 2001. SMN interacts with a novel family of hnRNP and spliceosomal proteins. *EMBO J.* 20: 5443-5452.
4. Carty, S.M. and Greenleaf, A.L. 2002. Hyperphosphorylated C-terminal repeat domain-associating proteins in the nuclear proteome link transcription to DNA/chromatin modification and RNA processing. *Mol. Cell. Proteomics* 1: 598-610.
5. Rossoll, W., et al. 2002. Specific interaction of SMN, the spinal muscular atrophy determining gene product, with hnRNP-R and gry-RBP/hnRNP-Q: a role for SMN in RNA processing in motor axons? *Hum. Mol. Genet.* 11: 93-105.

CHROMOSOMAL LOCATION

Genetic locus: SYNCRIP (human) mapping to 6q14.3.

PRODUCT

hnRNP Q 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 hnRNP Q shRNA Plasmid (h): sc-72096-SH and hnRNP Q shRNA (h) Lentiviral Particles: sc-72096-V as alternate gene silencing products.

For independent verification of hnRNP Q (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-72096A, sc-72096B and sc-72096C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

hnRNP Q siRNA (h) is recommended for the inhibition of hnRNP Q 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

hnRNP Q (I8E4): sc-56703 is recommended as a control antibody for monitoring of hnRNP Q 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 hnRNP Q gene expression knockdown using RT-PCR Primer: hnRNP Q (h)-PR: sc-72096-PR (20 μ l). 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.