SANTA CRUZ BIOTECHNOLOGY, INC.

Nocturnin siRNA (m): sc-62698

BACKGROUND

Nocturnin, also known as CCRN4L or NOC, is a 431 amino acid circadian deadenylase protein that is expressed in a broad range of tissues with greatest abundance in the liver, kidney and testis. Nocturnin plays a role in circadian regulation as well as diet-induced obesity. The mRNA abundance of Nocturnin exhibits circadian rhythmicity, peaking after dusk in photoreceptors, spleen, heart, kidney and liver. Nocturnin is thought to be responisble for turning off genes that are involved in circadian regulation. In *Xenopus* retinal photoreceptor cells, the rhythmic regulation of Nocturnin is thought to be controlled by phosphorylated CREB. Mice lacking Nocturnin remain lean on high fat diets with a reduction in visceral fat, which suggests that this protein may also be responsible for lipid metabolism and fat storage.

REFERENCES

1. Green, C.B. and Besharse, J.C. 1996. Identification of a novel vertebrate circadian clock-regulated gene encoding the protein Nocturnin. Proc. Natl. Acad. Sci. USA 93: 14884-14888.
2. Liu, X. and Green, C.B. 2001. A novel promoter element, photoreceptor conserved element II, directs photoreceptor-specific expression of Nocturnin in *Xenopus laevis*. J. Biol. Chem. 276: 15146-15154.
3. Liu, X. and Green, C.B. 2002. Circadian regulation of Nocturnin transcription by phosphorylated CREB in *Xenopus* retinal photoreceptor cells. Mol. Cell. Biol. 22: 7501-7511.
4. Baggs, J.E. and Green, C.B. 2003. Nocturnin, a deadenylase in *Xenopus laevis* retina: a mechanism for posttranscriptional control of circadian-related mRNA. Curr. Biol. 13: 189-198.
5. Oishi, K., et al. 2003. Genome-wide expression analysis of mouse liver reveals clock-regulated circadian output genes. J. Biol. Chem. 278: 41519-41527.

CHROMOSOMAL LOCATION

Genetic locus: Ccrn4l (mouse) mapping to 3 C.

PRODUCT

Nocturnin 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 Nocturnin shRNA Plasmid (m): sc-62698-SH and Nocturnin shRNA (m) Lentiviral Particles: sc-62698-V as alternate gene silencing products.

For independent verification of Nocturnin (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-62698A, sc-62698B and sc-62698C.

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 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

Nocturnin siRNA (m) is recommended for the inhibition of Nocturnin 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.

GENE EXPRESSION MONITORING

Nocturnin (F-4): sc-376584 is recommended as a control antibody for monitoring of Nocturnin 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Nocturnin gene expression knockdown using RT-PCR Primer: Nocturnin (m)-PR: sc-62698-PR (20 µl). 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.