



Clock siRNA (chicken): sc-63267

BACKGROUND

Biological timepieces called circadian clocks are responsible for the regulation of hormonal rhythms, sleep cycles and other behaviors. The suprachiasmatic nucleus (SCN), which is located in the brain, was the first mammalian circadian clock to be discovered. Clock, a member of the basic-helix-loop-helix-PAS (bHLH-PAS) family of transcription factors, has also been identified as having circadian function. Mutations within the Clock gene have been shown to increase the length of the endogenous period and to cause a loss of rhythmicity of circadian oscillations. Clock contains a DNA-binding domain, a protein dimerization domain and a glutamine-rich C-terminal region, which indicates transactivation capabilities. It has been speculated that Clock may regulate circadian rhythmicity in combination with other proteins such as Per. Per is also a PAS-domain containing protein that exhibits circadian function. Highest expression of Clock is seen in the hypothalamus and the eye.

REFERENCES

1. Morell, V. 1995. A 24-hour circadian Clock is found in the mammalian retina. *Science* 272: 349.
2. Reppert, S.M., et al. 1997. Forward genetic approach strikes gold: cloning of a mammalian Clock gene. *Cell* 89: 487-490.
3. King, D.P., et al. 1997. Positional cloning of the mouse circadian Clock gene. *Cell* 89: 641-653.
4. Antoch, M.P., et al. 1997. Functional identification of the mouse circadian Clock gene by transgenic BAC rescue. *Cell* 89: 655-667.
5. King, D.P., et al. 1997. The mouse Clock mutation behaves as an antimorph and maps within the W19H deletion, distal of Kit. *Genetics* 146: 1049-1060.
6. Tei, H., et al. 1997. Circadian oscillation of a mammalian homolog of the *Drosophila* period gene. *Nature* 389: 512-516.

CHROMOSOMAL LOCATION

Genetic locus: Clock (chicken) mapping to 4.

PRODUCT

Clock siRNA (chicken) 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 Clock shRNA Plasmid (chicken): sc-63267-SH and Clock shRNA (chicken) Lentiviral Particles: sc-63267-V as alternate gene silencing products.

For independent verification of Clock (chicken) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-63267A, sc-63267B and sc-63267C.

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.

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

Clock siRNA (chicken) is recommended for the inhibition of Clock expression in chicken 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor gene expression knockdown using RT-PCR Primer: Clock (chicken)-PR: sc-63267-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.