

# NC2 $\alpha$ siRNA (h): sc-38091

## BACKGROUND

NC2 (negative cofactor 2) is a dimeric histone-fold complex that represses RNA polymerase II transcription through binding to TBP and inhibiting the transcription factors TFIIA and TFIIB. NC2 consists of two subunits, termed NC2 $\alpha$  and NC2 $\beta$ , and these subunits dimerize and bind to TBP-promoter complexes via histone fold domains of the H2A-H2B type. NC2 associates with promoters in a manner that correlates with transcriptional activity and with occupancy by basal transcription factors. NC2 binds directly to DNA, and the binding of NC2 to TBP-promoter complexes affects the conformation of DNA, and results in the inhibition of TFIIB.

## REFERENCES

- Goppelt, A. and Meisterernst, M. 1996. Characterization of the basal inhibitor of class II transcription NC2 from *Saccharomyces cerevisiae*. *Nucleic Acids Res.* 24: 4450-4455.
- Goppelt, A., et al. 1996. A mechanism for repression of class II gene transcription through specific binding of NC2 to TBP-promoter complexes via heterodimeric histone fold domains. *EMBO J.* 15: 3105-3116.
- Teichmann, M., et al. 1999. Human TATA-binding protein-related factor-2 (hTRF2) stably associates with hTFIIA in HeLa cells. *Proc. Natl. Acad. Sci. USA* 96: 13720-13725.
- Xie, J., et al. 2000. A single point mutation in TFIIA suppresses NC2 requirement *in vivo*. *EMBO J.* 19: 672-682.
- Geisberg, J.V., et al. 2001. Yeast NC2 associates with the RNA polymerase II preinitiation complex and selectively affects transcription *in vivo*. *Mol. Cell. Biol.* 21: 2736-2742.

## CHROMOSOMAL LOCATION

Genetic locus: DRAP1 (human) mapping to 11q13.1.

## PRODUCT

NC2 $\alpha$  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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NC2 $\alpha$  shRNA Plasmid (h): sc-38091-SH and NC2 $\alpha$  shRNA (h) Lentiviral Particles: sc-38091-V as alternate gene silencing products.

For independent verification of NC2 $\alpha$  (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-38091A, sc-38091B and sc-38091C.

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

## APPLICATIONS

NC2 $\alpha$  siRNA (h) is recommended for the inhibition of NC2 $\alpha$  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  $\mu$ M in 66  $\mu$ 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

NC2 $\alpha$  (H-3): sc-374336 is recommended as a control antibody for monitoring of NC2 $\alpha$  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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NC2 $\alpha$  gene expression knockdown using RT-PCR Primer: NC2 $\alpha$  (h)-PR: sc-38091-PR (20  $\mu$ l, 377 bp). 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.