

hCAP-H siRNA (h): sc-62445

BACKGROUND

hCAP-H, also known as NCAPH (non-SMC condensin I complex subunit H), BRRN, BRRN1 or CAPH, is a widely expressed 741 amino acid member of the CND2 (condensin subunit 2) family. Localized to the cytoplasm and the nucleus during interphase and to the nucleus during the rest of mitosis, hCAP-H is a regulatory subunit of the condensin complex, a multi-protein structure that converts interphase chromatin into condensed chromosomes. The condensin complex is thought to induce positive supercoils into relaxed DNA and may also convert nicked DNA into knotted forms that can properly condense. hCAP-H, as well as other subunits of the condensin complex, are subject to phosphorylation by Cdc2 (cell division cycle 2). This phosphorylation activates the condensin complex and is, therefore, required for chromosome condensation.

REFERENCES

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2. Bhat, M.A., Philp, A.V., Glover, D.M. and Bellen, H.J. 1996. Chromatid segregation at anaphase requires the barren product, a novel chromosome-associated protein that interacts with Topoisomerase II. *Cell* 87: 1103-1114.
3. Cabello, O.A., Baldini, A., Bhat, M., Bellen, H. and Belmont, J.W. 1997. Localization of BRRN1, the human homologue of *Drosophila* barr, to 2q11.2. *Genomics* 46: 311-313.
4. Kimura, K., Cuvier, O. and Hirano, T. 2001. Chromosome condensation by a human condensin complex in *Xenopus* egg extracts. *J. Biol. Chem.* 276: 5417-5420.
5. Cabello, O.A., Eliseeva, E., He, W.G., Youssoufian, H., Plon, S.E., Brinkley, B.R. and Belmont, J.W. 2001. Cell cycle-dependent expression and nuclear localization of hCAP-H. *Mol. Biol. Cell* 12: 3527-3537.
6. Aono, N., Sutani, T., Tomonaga, T., Mochida, S. and Yanagida, M. 2002. Cnd2 has dual roles in mitotic condensation and interphase. *Nature* 417: 197-202.

CHROMOSOMAL LOCATION

Genetic locus: NCAPH (human) mapping to 2q11.2.

PRODUCT

hCAP-H 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 hCAP-H shRNA Plasmid (h): sc-62445-SH and hCAP-H shRNA (h) Lentiviral Particles: sc-62445-V as alternate gene silencing products.

For independent verification of hCAP-H (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-62445A, sc-62445B and sc-62445C.

RESEARCH USE

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

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

hCAP-H siRNA (h) is recommended for the inhibition of hCAP-H 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

hCAP-H (H-6): sc-101013 is recommended as a control antibody for monitoring of hCAP-H 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 hCAP-H gene expression knockdown using RT-PCR Primer: hCAP-H (h)-PR: sc-62445-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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