

hCAP-D3 siRNA (h): sc-96768

BACKGROUND

The condensin complex plays a role in the resolution and segregation of sister chromatids during mitosis and some aspects of mitotic chromosome assembly. Cdc2 phosphorylation of the complex leads to its activation and association with chromosome arms and condensation. Condensin complexes are heteropentamers comprised of two SMC (structural maintenance of chromosomes) subunits and three non-SMC subunits. The SMC family includes SMC1 (also known as SMC1 α and SCMB), which associates with SMC3 (also known as hCAP and Bamacan), SMC2 (also known as hCAP-E), which associates with SMC4 (also known as hCAP-C), and SMC5, which associates with SMC6. hCAP-D3 (non-SMC condensin II complex subunit D3), also known as NCAPD3 or KIAA0056, is a 1,498 amino acid nuclear protein that contains four HEAT repeats and is a member of the condensin-2 complex.

REFERENCES

1. Nomura, N., et al. 1994. Prediction of the coding sequences of unidentified human genes. II. The coding sequences of 40 new genes (KIAA0041-KIAA0080) deduced by analysis of cDNA clones from human cell line KG-1. *DNA Res.* 1: 223-229.
2. Steen, R.L., et al. 2000. A kinase-anchoring protein (AKAP)95 recruits human chromosome-associated protein (hCAP)-D2/Eg7 for chromosome condensation in mitotic extract. *J. Cell Biol.* 149: 531-536.
3. Kimura, K., et al. 2001. Chromosome condensation by a human condensin complex in *Xenopus* egg extracts. *J. Biol. Chem.* 276: 5417-5420.
4. Ball, A.R., et al. 2002. Identification of a chromosome-targeting domain in the human condensin subunit CNAP1/hCAP-D2/Eg7. *Mol. Cell. Biol.* 22: 5769-5781.
5. Watrin, E. and Legagneux, V. 2005. Contribution of hCAP-D2, a non-SMC subunit of condensin I, to chromosome and chromosomal protein dynamics during mitosis. *Mol. Cell. Biol.* 25: 740-750.
6. Lapointe, J., et al. 2008. hCAP-D3 expression marks a prostate cancer subtype with favorable clinical behavior and androgen signaling signature. *Am. J. Surg. Pathol.* 32: 205-209.

CHROMOSOMAL LOCATION

Genetic locus: NCAPD3 (human) mapping to 11q25.

PRODUCT

hCAP-D3 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-D3 shRNA Plasmid (h): sc-96768-SH and hCAP-D3 shRNA (h) Lentiviral Particles: sc-96768-V as alternate gene silencing products.

For independent verification of hCAP-D3 (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-96768A, sc-96768B and sc-96768C.

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-D3 siRNA (h) is recommended for the inhibition of hCAP-D3 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-D3 (2B5): sc-81597 is recommended as a control antibody for monitoring of hCAP-D3 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-D3 gene expression knockdown using RT-PCR Primer: hCAP-D3 (h)-PR: sc-96768-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.

PROTOCOLS

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