SANTA CRUZ BIOTECHNOLOGY, INC.

CdcA4 siRNA (m): sc-72842

BACKGROUND

The eukaryotic cell division cycle consists of a number of gene-controlled sequences that involve cyclin dependent kinases (Cdks) and cell division cycle (Cdc) proteins. CdcA4 (cell division cycle associated 4), also known as HEPP (hematopoietic progenitor protein), is a 241 amino acid protein that contains one SERTA domain and belongs to the E2F family of transcription factors. Localized to the nucleus, CdcA4 participates in the E2F/retinoblastoma pathway and regulates E2F-dependent transcriptional activation and cell proliferation. Additionally, CdcA4 is thought to be involved in spindle pole organization, possibly acting as a midzone factor involved in cytokinesis and chromosome segregation. CdcA4 can also regulate Jun oncogene expression, suggesting a role for CdcA4 in cellular transformation events that lead to tumor development. Multiple isoforms of CdcA4 exist due to alternative splicing events.

REFERENCES

1. Abdullah, J.M., et al. 2001. Cloning and characterization of Hepp, a novel gene expressed preferentially in hematopoietic progenitors and mature blood cells. Blood Cells Mol. Dis. 27: 667-676.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 612270. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Brandenberger, R., et al. 2004. Transcriptome characterization elucidates signaling networks that control human ES cell growth and differentiation. Nat. Biotechnol. 22: 707-716.
4. Bennetts, J.S., et al. 2006. Evolutionary conservation and murine embryonic expression of the gene encoding the SERTA domain-containing protein CDCA4 (HEPP). Gene 374: 153-165.
5. Hayashi, R., et al. 2006. CDCA4 is an E2F transcription factor family-induced nuclear factor that regulates E2F-dependent transcriptional activation and cell proliferation. J. Biol. Chem. 281: 35633-35648.
6. Tategu, M., et al. 2008. Transcriptional co-factor CDCA4 participates in the regulation of JUN oncogene expression. Biochimie 90: 1515-1522.
7. Wang, L., et al. 2008. The spindle function of CDCA4. Cell Motil. Cytoskeleton 65: 581-593.

CHROMOSOMAL LOCATION

Genetic locus: Cdca4 (mouse) mapping to 12 F1.

PRODUCT

CdcA4 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 CdcA4 shRNA Plasmid (m): sc-72842-SH and CdcA4 shRNA (m) Lentiviral Particles: sc-72842-V as alternate gene silencing products.

For independent verification of CdcA4 (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-72842A, sc-72842B and sc-72842C.

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

CdcA4 siRNA (m) is recommended for the inhibition of CdcA4 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

CdcA4 (E-6): sc-514280 is recommended as a control antibody for monitoring of CdcA4 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 CdcA4 gene expression knockdown using RT-PCR Primer: CdcA4 (m)-PR: sc-72842-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.

PROTOCOLS

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