SANTA CRUZ BIOTECHNOLOGY, INC.

CdcA1 siRNA (m): sc-72840

BACKGROUND

Kinetochores play an essential role in chromosome segregation by forming dynamic connections with spindle microtubules. Cell division associated 1 (CdcA1) is a member of the evolutionarily conserved centromere protein complex along with kinetochore associated 2 (KNTC2), and these two proteins are involved in the regulation of cell-cycle progression. The novel human cell cycle genes CdcA1 through CdcA8 are co-expressed with the well-known cell cycle genes including Cdc2, Cdc7, Cdc23, cyclin, and MCAK. Both CdcA1 and KNTC2 are implicated in non-small cell lung carcinomas (NSCLC), and selective suppression of CdcA1 or KNTC2 activity and/or inhibition of the CdcA1-KNTC2 complex formation may be a promising therapeutic target for treatment of lung cancers.

REFERENCES

1. Nabetani, A., et al. 2001. A conserved protein, Nuf2, is implicated in connecting the centromere to the spindle during chromosome segregation: a link between the kinetochore function and the spindle checkpoint. Chromosoma 110: 322-334.
2. Walker, M.G. 2002. Drug target discovery by gene expression analysis: cell cycle genes. Curr. Cancer Drug Targets 1: 73-83.
3. DeLuca, J.G., et al. 2003. Nuf2 and Hec1 are required for retention of the checkpoint proteins Mad1 and Mad2 to kinetochores. Curr. Biol. 13: 2103-2109.
4. Hori, T., et al. 2003. Dynamic centromere and is essential for mitotic progression in vertebrate cells. J. Cell Sci. 116: 3347-62.
5. Meraldi, P., et al. 2004. Timing and checkpoints in the regulation of mitotic progression. Dev. Cell 7: 45-60.
6. Stucke, V.M., et al. 2004. Kinetochore localization and microtubule interaction of the human spindle checkpoint kinase Mps1. Chromosoma 113: 1-15.
7. Tien, A.C., et al. 2004. Identification of the substrates and interaction protein from a protein-protein interaction model. Mol. Cell. Proteomics 3: 93-104.

CHROMOSOMAL LOCATION

Genetic locus: Nuf2 (mouse) mapping to 1 H2.3.

PRODUCT

CdcA1 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 CdcA1 shRNA Plasmid (m): sc-72840-SH and CdcA1 shRNA (m) Lentiviral Particles: sc-72840-V as alternate gene silencing products.

For independent verification of CdcA1 (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-72840A, sc-72840B and sc-72840C.

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

CdcA1 siRNA (m) is recommended for the inhibition of CdcA1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CdcA1 gene expression knockdown using RT-PCR Primer: CdcA1 (m)-PR: sc-72840-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.