SANTA CRUZ BIOTECHNOLOGY, INC.

CINP siRNA (m): sc-142344

BACKGROUND

Cell cycle progression is controlled in part by a family of cyclin proteins and cyclin dependent kinases (Cdks). Cdk proteins work in concert with the cyclins to phosphorylate key substrates involved in each phase of cell cycle progression. Specifically, Cdk2 interacts with Cyclins A, B1, B3, D, or E to control cell cycle progression. The Cyclin-dependent kinase 2-interacting protein (CINP) interacts with components of the replication complex and Cdk2 and Cdc7, thereby providing a functional and physical link between Cdk2 and Cdc7 during firing of the origins of replication. However, CINP is phopshorylated by Cdc7, but not by Cdk2. CINP also interacts with ATR-interacting protein and regulates ATR-dependent signaling, resistance to replication stress and G_2 checkpoint integrity.

REFERENCES

1. Hengstschläger, M., et al. 1999. Cyclin-dependent kinases at the G_1-S transition of the mammalian cell cycle. Mutat. Res. 436: 1-9.
2. Woo, R.A., et al. 2003. Cyclin-dependent kinases and S phase control in mammalian cells. Cell Cycle 2: 316-324.
3. Grishina, I., et al. 2005. A novel Cdk2 interactor is phosphorylated by Cdc7 and associates with components of the replication complexes. Cell Cycle 4: 1120-1126.
4. Montagnoli, A., et al. 2006. Identification of Mcm2 phosphorylation sites by S-phase-regulating kinases. J. Biol. Chem. 281: 10281-10290.
5. Chuang, L.C., et al. 2009. Phosphorylation of Mcm2 by Cdc7 promotes pre-replication complex assembly during cell-cycle re-entry. Mol. Cell 35: 206-216.
6. Lovejoy, C.A., et al. 2009. Functional genomic screens identify CINP as a genome maintenance protein. Proc. Natl. Acad. Sci. USA 106: 19304-19309.
7. Warmerdam, D.O., et al. 2010. Differential dynamics of ATR-mediated checkpoint regulators. J. Nucleic Acids pii: 319142.

CHROMOSOMAL LOCATION

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

PRODUCT

CINP siRNA (m) is a target-specific 19-25 nt siRNA 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 CINP shRNA Plasmid (m): sc-142344-SH and CINP shRNA (m) Lentiviral Particles: sc-142344-V as alternate gene silencing products.

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.

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

CINP siRNA (m) is recommended for the inhibition of CINP 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 CINP gene expression knockdown using RT-PCR Primer: CINP (m)-PR: sc-142344-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.