SANTA CRUZ BIOTECHNOLOGY, INC.

Cdk2 siRNA (h): sc-29259

BACKGROUND

In vertebrates, as in yeast, multiple cyclins have been identified, including a total of eight such regulatory proteins in mammals. In contrast to the situation in yeast, the Cdc2 p34 kinase is not the only catalytic subunit identified in vertebrates that can interact with cyclins. While Cdc2 p34 is essential for the G_2 to M transition in vertebrate cells, a second Cdc2-related kinase has also been implicated in cell cycle control. This protein, designated cyclin-dependent kinase 2 (Cdk2) p33, also binds to cyclins and its kinase activity is temporally regulated during the cell cycle. Several additional Cdc2 p34-related cyclin dependent kinases have been identified. These include Cdk3-Cdk8, PCTAIRE-1–3 and KKIALRE.

CHROMOSOMAL LOCATION

Genetic locus: CDK2 (human) mapping to 12q13.2.

PRODUCT

Cdk2 siRNA (h) 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 Cdk2 shRNA Plasmid (h): sc-29259-SH and Cdk2 shRNA (h) Lentiviral Particles: sc-29259-V as alternate gene silencing 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

Cdk2 siRNA (h) is recommended for the inhibition of Cdk2 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 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.

PROTOCOLS

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

GENE EXPRESSION MONITORING

Cdk2 (D-12): sc-6248 is recommended as a control antibody for monitoring of Cdk2 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 Cdk2 gene expression knockdown using RT-PCR Primer: Cdk2 (h)-PR: sc-29259-PR (20 µl, 454 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chan, N. and Lim, T.M. 2015. Cytoplasmic nucleophosmin has elevated T199 phosphorylation upon which G_2/M phase progression is dependent. Sci. Rep. 5: 11777.
2. Kuo, C.Y., et al. 2016. RNF4 regulates DNA double-strand break repair in a cell cycle-dependent manner. Cell Cycle 15: 787-798.
3. Chen, X., et al. 2016. Nuclear phosphoproteomics analysis reveals that Cdk1/2 are involved in EGF-regulated constitutive pre-mRNA splicing in MDA-MB-468 cells. J. Proteomics 141: 77-84.
4. Rajput, S., et al. 2016. Inhibition of cyclin dependent kinase 9 by dinaciclib suppresses cyclin B1 expression and tumor growth in triple negative breast cancer. Oncotarget 7: 56864-56875.
5. An, H.J., et al. 2016. Novel miR-5582-5p functions as a tumor suppressor by inducing apoptosis and cell cycle arrest in cancer cells through direct targeting of GAB1, SHC1, and Cdk2. Biochim. Biophys. Acta 1862: 1926-1937.
6. De Meo, S., et al. 2020. SAMHD1 phosphorylation and cytoplasmic relocalization after human cytomegalovirus infection limits its antiviral activity. PLoS Pathog. 16: e1008855.
7. Li, X., et al. 2017. MiR-150 inhibits proliferation and tumorigenicity via retarding G_1/S phase transition in nasopharyngeal carcinoma. Int. J. Oncol. 50: 1097-1108.

RESEARCH USE

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