SANTA CRUZ BIOTECHNOLOGY, INC.

Cdk6 siRNA (h): sc-29264

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Another family of proteins, Cdk inhibitors, also plays a role in regulating the cell cycle by binding to cyclin-Cdk complexes and modulating their activity. Several Cdk proteins have been identified, including Cdk2-Cdk8, PCTAIRE-1–PCTAIRE-3, PITALRE and PITSLRE. Cdk6 is known to associate with cyclins D1, D2 and D3 and to be involved with the G_1/S transition of the cell cycle. Multiple inhibitors of Cdk6 have been identified, including p18 and p19. These inhibitors bind to both free and complexed Cdk6, and they inhibit the activity of the cyclin D-bound Cdk6.

CHROMOSOMAL LOCATION

Genetic locus: CDK6 (human) mapping to 7q21.2.

PRODUCT

Cdk6 siRNA (h) is a pool of 4 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 Cdk6 shRNA Plasmid (h): sc-29264-SH and Cdk6 shRNA (h) Lentiviral Particles: sc-29264-V as alternate gene silencing products.

For independent verification of Cdk6 (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-29264A, sc-29264B, sc-29264C and sc-29264D.

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

Cdk6 siRNA (h) is recommended for the inhibition of Cdk6 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.

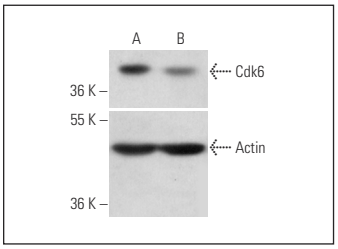
GENE EXPRESSION MONITORING

Cdk6 (B-10): sc-7961 is recommended as a control antibody for monitoring of Cdk6 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Cdk6 gene expression knockdown using RT-PCR Primer: Cdk6 (h)-PR: sc-29264-PR (20 µl, 503 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



Cdk6 siRNA (h): sc-29264. Western blot analysis of Cdk6 expression in non-transfected control (**A**) and Cdk6 siRNA transfected (**B**) HeLa cells. Blot probed with Cdk6 (C-21): sc-177. Actin (I-19): sc-1616 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Zhang, X., et al. 2009. A role for NANOG in G_1 to S transition in human embryonic stem cells through direct binding of CDK6 and CDC25A. J. Cell Biol. 184: 67-82.
2. Shi, L., et al. 2010. MiR-125b is critical for the suppression of human U251 glioma stem cell proliferation. Brain Res. 1312: 120-126.
3. Li, M., et al. 2012. Multiple CDK/CYCLIND genes are amplified in medulloblastoma and supratentorial primitive neuroectodermal brain tumor. Cancer Genet. 205: 220-231.
4. Halder, B., et al. 2012. Black tea polyphenols induce human leukemic cell cycle arrest by inhibiting Akt signaling: possible involvement of HSP 90, Wnt/β-catenin signaling and FOXO1. FEBS J. 279: 2876-2891.
5. Lulla, A.R., et al. 2017. miR-6883 family miRNAs target CDK4/6 to induce G_1 phase cell-cycle arrest in colon cancer cells. Cancer Res. 77: 6902-6913.
6. Bortolozzi, R., et al. 2018. Ribociclib, a Cdk4/Cdk6 kinase inhibitor, enhances glucocorticoid sensitivity in B-acute lymphoblastic leukemia (B-All). Biochem. Pharmacol. 153: 230-241.

RESEARCH USE

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