SANTA CRUZ BIOTECHNOLOGY, INC.

Cdk11 siRNA (h): sc-72844

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The Power to Question

BACKGROUND

Cell cycle progression is controlled, in part, by a family of cyclin-dependent kinases (Cdks) that work to phosphorylate key substrates involved in each phase of cell cycle progression. Cdks are the catalytic subunits of serine/threonine protein kinases, a large family of proteins that act as regulators of the eukaryotic cell cycle. Cdk11 (cyclin-dependent kinase 11), also known as CDC2L6 (cell division cycle 2-like 6 (CDK8-like)), is a 502 amino acid protein that contains one protein kinase domain and functions to catalyze the ATP-dependent transfer of phospho residues to target substrates. Additionally, Cdk11 exists as a component of the mediator coactivator complex, suggesting a role in transcriptional activation. Multiple isoforms of Cdk11 exist due to alternative splicing events. The gene encoding Cdk11 maps to human chromosome 6q21, which contains 170 million base pairs and comprises nearly 6% of the human genome.

REFERENCES

1. Sato, S., et al. 2004. A set of consensus mammalian mediator subunits identified by multidimensional protein identification technology. Mol. Cell 14: 685-691.
2. Yun, X., et al. 2007. CDK11^{p58} protein kinase activity is associated with Bcl-2 down-regulation in pro-apoptosis pathway. Mol. Cell. Biochem. 304: 213-218.
3. Tsutsui, T., et al. 2008. Human mediator kinase subunit Cdk11 plays a negative role in viral activator VP16-dependent transcriptional regulation. Genes Cells 13: 817-826.

CHROMOSOMAL LOCATION

Genetic locus: CDK19 (human) mapping to 6q21.

PRODUCT

Cdk11 siRNA (h) 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 Cdk11 shRNA Plasmid (h): sc-72844-SH and Cdk11 shRNA (h) Lentiviral Particles: sc-72844-V as alternate gene silencing products.

For independent verification of Cdk11 (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-72844A, sc-72844B and sc-72844C.

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

Cdk11 siRNA (h) is recommended for the inhibition of Cdk11 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

Cdk11 (8B6): sc-517026 is recommended as a control antibody for monitoring of Cdk11 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 Cdk11 gene expression knockdown using RT-PCR Primer: Cdk11 (h)-PR: sc-72844-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Brägelmann, J., et al. 2017. Pan-cancer analysis of the mediator complex transcriptome identifies CDK19 and Cdk8 as therapeutic targets in advanced prostate cancer. Clin. Cancer Res. 23: 1829-1840.
2. Cary, D.C., et al. 2019. HIV transcription is independent of mediator kinases. AIDS Res. Hum. Retroviruses. E-published.

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.