

# Cdk3 siRNA (h): sc-37578

## 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 cell cycle by binding to cyclin-Cdk complexes and modulating their activity. Several Cdk proteins have been identified, including Cdk2-Cdk8, PCTAIRE-1-3, PITALRE and PITSIRE. Cdk3, like Cdk2, is known to be required for the G<sub>1</sub>-S transition. Proteins involved in cell cycle control have become the subject of increased interest with regard to their potential roles in tumorigenesis. Both Cdk3 and Cdk2 have been mapped to regions of a human chromosome that may be altered in a variety of tumors.

## REFERENCES

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- Bullrich, F., et al. 1995. Chromosomal mapping of members of the Cdc2 family of protein kinases, Cdk3, Cdk6, PISSLRE, and PITALRE, and a Cdk inhibitor, p27<sup>Kip1</sup>, to regions involved in human cancer. *Cancer Res.* 55: 1199-1205.
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- Hofmann, F., et al. 1996. Differential effects of Cdk2 and Cdk3 on the control of pRb and E2F function during G<sub>1</sub> exit. *Genes Dev.* 10: 851-861.
- Dirks, P.B., et al. 1997. Current concepts in neuro-oncology: the cell cycle—a review. *Neurosurgery* 40: 1000-1013.
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## CHROMOSOMAL LOCATION

Genetic locus: CDK3 (human) mapping to 17q25.1.

## PRODUCT

Cdk3 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Cdk3 shRNA Plasmid (h): sc-37578-SH and Cdk3 shRNA (h) Lentiviral Particles: sc-37578-V as alternate gene silencing products.

For independent verification of Cdk3 (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-37578A, sc-37578B and sc-37578C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Cdk3 siRNA (h) is recommended for the inhibition of Cdk3 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  $\mu$ M in 66  $\mu$ l. 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

Cdk3 (4B6): sc-81836 is recommended as a control antibody for monitoring of Cdk3 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Cdk3 gene expression knockdown using RT-PCR Primer: Cdk3 (h)-PR: sc-37578-PR (20  $\mu$ l, 577 bp). 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](http://www.scbt.com) for detailed protocols and support products.