SANTA CRUZ BIOTECHNOLOGY, INC.

# Cdc25C siRNA (h): sc-35038

## BACKGROUND

Cell cycle events are regulated by the sequential activation and deactivation of cyclin-dependent kinases (Cdks), including Cdk2 and Cdc2. Cdk2 in complexes with cyclin E and cyclin A appears necessary for the onset and progression of DNA replication, while the Cdc2 kinase in complexes with cyclin A or cyclin B is required for the initiation of cell division. Wee 1 has been identified as a protein kinase that suppresses the entry into mitosis by mediating inhibiting tyrosine phosphorylation of Cdc2 p34. In contrast, members of the Cdc25 family of protein phosphatases function as mitotic activators by dephosphorylation of Cdc2 p34 on regulatory tyrosine and possibly threonine residues. The Cdc25 gene family consists of at least three members that share approximately 40% identity in their most conserved carboxy-terminal sequences.

## REFERENCES


1. Sadhu, K., et al. 1990. Human homolog of fission yeast Cdc25 mitotic inducer is predominantly expressed in $G_2$. Proc. Natl. Acad. Sci. USA 87: 5139-5143.
2. Gautier, J., et al. 1991. Cdc25 is a specific tyrosine phosphatase that directly activates $p34^{Cdc2}$. Cell 67: 197-211.
3. Galaktionov, K., et al. 1991. Specific activation of Cdc25 tyrosine phosphatases by B-type cyclins: evidence for multiple roles of mitotic cyclins. Cell 67: 1181-1194.
4. Igarashi, M., et al. 1991. Wee $1^+$-like gene in human cells. Nature 353: 80-83.
5. Girard, F., et al. 1992. Cdc25 is a nuclear protein expressed constitutively throughout the cell cycle in nontransformed mammalian cells. J. Cell Biol. 118: 785-794.
6. Parker, L.L., et al. 1992. Inactivation of the $p34^{Cdc2}$-cyclin B complex by the human Wee 1 tyrosine kinase. Science 257: 1955-1957.
7. Coleman, T.R., et al. 1993. Negative regulation of the Wee 1 protein kinase by direct action of the Nim1/Cdr1 mitotic inducer. Cell 72: 919-929.
8. Parker, L.L., et al. 1993. Phosphorylation and inactivation of the mitotic inhibitor Wee 1 by the Nim1/Cdr1 kinase. Nature 363: 736-738.


## CHROMOSOMAL LOCATION

Genetic locus: CDC25C (human) mapping to 5q31.2.

## PRODUCT

Cdc25C 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 Cdc25C shRNA Plasmid (h): sc-35038-SH and Cdc25C shRNA (h) Lentiviral Particles: sc-35038-V as alternate gene silencing products.

For independent verification of Cdc25C (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-35038A, sc-35038B and sc-35038C.

## 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

Cdc25C siRNA (h) is recommended for the inhibition of Cdc25C 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

Cdc25C (H-6): sc-13138 is recommended as a control antibody for monitoring of Cdc25C 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 Cdc25C gene expression knockdown using RT-PCR Primer: Cdc25C (h)-PR: sc-35038-PR (20 µl, 422 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


1. Al-Matouq, J., et al. 2019. Cdc25B and Cdc25C overexpression in non-melanoma skin cancer suppresses cell death. Mol. Carcinog. 58: 1691-1700.


## RESEARCH USE

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