SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc25A siRNA (h): sc-29254

BACKGROUND

The Cdc2/cyclin B enzyme, involved in regulation of mitosis in eukaryotic cells, is subject to multiple levels of control. Among these, the regulation of the catalytic subunit by Tyrosine phosphorylation is the best understood. Tyrosine phosphorylation inhibits the Cdc2/cyclin B complex, while Tyrosine dephosphorylation, which occurs at the onset of mitosis, directly activates the pre-MPH complex. The Cdc25 gene serves as a rate-limiting mitotic activator, apparently due to its action as the Cdc2 Tyrosine phosphatase. In the absence of Cdc25, Cdc2 accumulates in a Tyrosine phosphorylated state. In addition, Cdc25 proteins from a variety of species have been shown to share a low degree of sequence similarity with other Tyrosine phosphatases. The Cdc25 gene family consists of at least three members that share approximately 40% identity in their most conserved carboxy-terminal sequences.

CHROMOSOMAL LOCATION

Genetic locus: CDC25A (human) mapping to 3p21.31.

PRODUCT

Cdc25A 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 Cdc25A shRNA Plasmid (h): sc-29254-SH and Cdc25A shRNA (h) Lentiviral Particles: sc-29254-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

Cdc25A siRNA (h) is recommended for the inhibition of Cdc25A 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.

RESEARCH USE

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

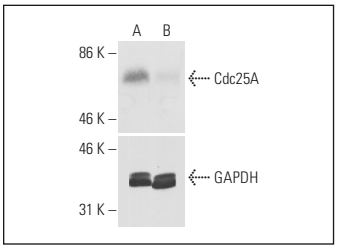
GENE EXPRESSION MONITORING

Cdc25A (F-6): sc-7389 is recommended as a control antibody for monitoring of Cdc25A 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 Cdc25A gene expression knockdown using RT-PCR Primer: Cdc25A (h)-PR: sc-29254-PR (20 µl, 326 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



Cdc25A siRNA (h): sc-29254. Western blot analysis of Cdc25A expression in non-transfected control (**A**) and Cdc25A siRNA transfected (**B**) HeLa cells. Blot probed with Cdc25A (F-6): sc-7389. GAPDH (V-18): sc-20357 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Stolfi, C., et al. 2008. Mesalazine negatively regulates Cdc25A protein expression and promotes accumulation of colon cancer cells in S phase. Carcinogenesis 29: 1258-1266.
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. Maiti, G.P., et al. 2013. Overexpression of EGFR in head and neck squamous cell carcinoma is associated with inactivation of SH3GL2 and Cdc25A genes. PLoS ONE 8: e63440.
4. King, C., et al. 2015. LY2606368 causes replication catastrophe and antitumor effects through CHK1-dependent mechanisms. Mol. Cancer Ther. 14: 2004-2013.
5. Liu, X., et al. 2017. The E3 ubiquitin ligase APC/CCdh1 degrades MCPH1 after MCPH1-βTrCP2-Cdc25A-mediated mitotic entry to ensure neurogenesis. EMBO J. 36: 3666-3681.
6. Sun, Y., et al. 2019. CDC25A facilitates chemo-resistance in ovarian cancer multicellular spheroids by promoting E-cadherin expression and arresting cell cycles. J. Cancer 10: 2874-2884.

PROTOCOLS

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