

Cdc123 siRNA (h): sc-90774

BACKGROUND

The eukaryotic cell division cycle consists of a number of gene-controlled sequences that involve cyclin dependent kinases (Cdks) and cell division control (Cdc) proteins. Cdc123 (cell division cycle protein 123), also known as D123, is a 336 amino acid cytoplasmic protein that is involved in cell cycle control. Widely expressed with high expression in thymus, spleen, ovary, testis, small intestine and leukocytes, Cdc123 functions to destabilize Chfr (checkpoint with forkhead and ring finger domain) proteins which, when accumulated, block the G to S phase transition. Cdc123 prevents the Chfr proteins from collecting in the cell, thereby allowing the cell to enter the S phase. Due to its role in cell cycle control, Cdc123 is thought to be a basal marker for luminal breast cancers.

REFERENCES

- Okuda, A., et al. 1996. An amino acid change in novel protein D123 is responsible for temperature-sensitive G₁-phase arrest in a mutant of rat fibroblast line 3Y1. *Exp. Cell Res.* 223: 242-249.
- Onisto, M., et al. 1998. Expression study on D123 gene product: evidence for high positivity in testis. *Exp. Cell Res.* 242: 451-459.
- Okuda, A., et al. 1999. Extensive degradation of mutant-type D123 protein is responsible for temperature-sensitive proliferation inhibition in 3Y1tsD123 cells. *Cell Struct. Funct.* 24: 443-449.
- Liu, L.X., et al. 2000. Mutation of a conserved residue (D123) required for oligomerization of human immunodeficiency virus type 1 Nef protein abolishes interaction with human thioesterase and results in impairment of Nef biological functions. *J. Virol.* 74: 5310-5319.
- Okuda, A., et al. 2001. Reversion of temperature-sensitive mutation by inhibition of proteasome-mediated degradation of mutated D123 protein. *Cell Struct. Funct.* 26: 205-214.
- Bieganski, P., et al. 2004. Cdc123 and checkpoint forkhead associated with RING proteins control the cell cycle by controlling elF2 γ abundance. *J. Biol. Chem.* 279: 44656-44666.

CHROMOSOMAL LOCATION

Genetic locus: CDC123 (human) mapping to 10p13.

PRODUCT

Cdc123 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Cdc123 shRNA Plasmid (h): sc-90774-SH and Cdc123 shRNA (h) Lentiviral Particles: sc-90774-V as alternate gene silencing products.

For independent verification of Cdc123 (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-90774A, sc-90774B and sc-90774C.

RESEARCH USE

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

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

APPLICATIONS

Cdc123 siRNA (h) is recommended for the inhibition of Cdc123 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 μ M in 66 μ 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

Cdc123 (A-2): sc-390989 is recommended as a control antibody for monitoring of Cdc123 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 κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 Cdc123 gene expression knockdown using RT-PCR Primer: Cdc123 (h)-PR: sc-90774-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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