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p55 CDC siRNA (h2): sc-156154

BACKGROUND

Cyclins, regulatory subunits which associate with kinases, control many of the important steps in cell cycle progression. The Cdc2 protein kinase (p34^{Cdc2}) exhibits protein kinase activity *in vitro* and exists in a complex with both cyclin B and a protein homologous to p13^{suc1}. Cdc2 kinase is the active subunit of the M phase promoting factor (MPF) and the M phase-specific Histone H1 kinase. The p34^{Cdc2}/cyclin B complex is required for the G₂ to M transition. An additional cell cycle-dependent protein kinase termed p55 CDC exhibits a high degree of homology with the *S. cerevisiae* proteins Cdc20 and Cdc4. The p55 CDC transcript is readily detectable in a variety of cultured cell lines in growth phase, but disappears when cell growth is chemically arrested. p55 CDC shows kinase activity towards α -casein and myelin basic protein.

REFERENCES

1. Brizuela, L., et al. 1987. p13^{suc1} acts in the fission yeast cell division cycle as a component of the p34^{Cdc2} protein kinase. *EMBO J.* 6: 3507-3514.
2. Dunphy, W.G., et al. 1988. The *Xenopus* Cdc2 protein is a component of MPF, a cytoplasmic regulator of mitosis. *Cell* 54: 423-431.
3. Arion, D., et al. 1988. Cdc2 is a component of the M phase-specific Histone H1 kinase: evidence for identity with MPF. *Cell* 55: 371-378.
4. Morla, A.O., et al. 1989. Reversible tyrosine phosphorylation of Cdc2: dephosphorylation accompanies activation during entry into mitosis. *Cell* 58: 193-203.

CHROMOSOMAL LOCATION

Genetic locus: CDC20 (human) mapping to 1p34.2.

PRODUCT

p55 CDC siRNA (h2) 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 p55 CDC shRNA Plasmid (h2): sc-156154-SH and p55 CDC shRNA (h2) Lentiviral Particles: sc-156154-V as alternate gene silencing products.

For independent verification of p55 CDC (h2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-156154A, sc-156154B and sc-156154C.

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

p55 CDC siRNA (h2) is recommended for the inhibition of p55 CDC expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29527 (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

p55 CDC (E-7): sc-13162 is recommended as a control antibody for monitoring of p55 CDC 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 p55 CDC gene expression knockdown using RT-PCR Primer: p55 CDC (h2)-PR: sc-156154-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Cheng, S., et al. 2019. Cdc20 associated with cancer metastasis and novel mushroom-derived Cdc20 inhibitors with antimetastatic activity. *Int. J. Oncol.* 54: 2250-2256.

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.