SANTA CRUZ BIOTECHNOLOGY, INC.

PRC1 siRNA (m): sc-44346

BACKGROUND

Sequential activation and inactivation of Cdk/cyclin complexes regulates the cell cycle. PRC1 (for protein regulating cytokinesis 1) has been identified as a substrate for several Cdks, including Cdc2 and Cdk2. PRC1 binds to the mid-zone of mitotic spindles during anaphase and is localized to the cell midbody during cytokinesis. Depletion of PRC1 was shown to prevent cellular cleavage, but it had no effect on nuclear division, demonstrating the importance of PRC1 in mitosis.The yeast homolog of PRC1, Ase1, is essential for spindle assembly, elongation and disassembly during mitosis. Ase1 has been shown to undergo degradation mediated by the APC (anaphase-promoting complex) upon entry into G_1 phase.

REFERENCES

1. Sherr, C.J. 1994. G_1 phase progression: cycling on cue. Cell 79: 551-555.
2. Heichman, K.A., et al. 1994. Rules to replicate by. Cell 79: 557-562.
3. King, R.W., et al. 1994. Mitosis in transition. Cell 79: 563-571.
4. Pellman, D., et al. 1995. Two microtubule-associated proteins required for anaphase spindle movement in *Saccharomyces cerevisiae*. J. Cell Biol. 130: 1373-1385.
5. Juang, Y.L., et al. 1997. APC-mediated proteolysis of Ase1 and the morphogenesis of the mitotic spindle. Science 275: 1311-1314.
6. Jiang, W., et al. 1998. PRC1: a human mitotic spindle-associated CDK substrate protein required for cytokinesis. Mol. Cell 2: 877-885.
7. Mollinari, C., et al. 2002. PRC1 is a microtubule binding and bundling protein essential to maintain the mitotic spindle midzone. J. Cell Biol. 157: 1175-1186.
8. Vogel, T., et al. 2006. Differential expression of polycomb repression complex 1 (PRC1) members in the developing mouse brain reveals multiple complexes. Dev. Dyn. 235: 2574-2585.

CHROMOSOMAL LOCATION

Genetic locus: Prc1 (mouse) mapping to 7 D3.

PRODUCT

PRC1 siRNA (m) 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 PRC1 shRNA Plasmid (m): sc-44346-SH and PRC1 shRNA (m) Lentiviral Particles: sc-44346-V as alternate gene silencing products.

For independent verification of PRC1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-44346A, sc-44346B and sc-44346C.

PROTOCOLS

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

PRC1 siRNA (m) is recommended for the inhibition of PRC1 expression in mouse 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

PRC1 (C-1): sc-376983 is recommended as a control antibody for monitoring of PRC1 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 PRC1 gene expression knockdown using RT-PCR Primer: PRC1 (m)-PR: sc-44346-PR (20 µl). 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.