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PHC1 siRNA (m): sc-152203

BACKGROUND

Polycomb group (PcG) proteins assemble into multimeric protein complexes, which are involved in maintaining the transcriptional repressive state of genes throughout development. PHC1 (polyhomeotic homolog 1), also known as EDR1, HPH1 or RAE28, is a 1,004 amino acid nuclear protein that is a component of the PcG multiprotein PRC1 complex. Specifically, the PcG PRC1 complex modifies histones, remodels chromatin and mediates monoubiquitination of Histone H2A. Other constituent proteins involved in the PcG PRC1 complex are Mel-18, Bmi-1, M33, MPc2, MPc3, RING1, Ring1b, as well as several others. Existing as a homodimer, PHC1 contains one FCS-type zinc finger and a SAM (sterile alpha motif) domain. PHC1 is encoded by a gene located on human chromosome 12p13.31, which encodes over 1,100 genes and comprises approximately 4.5% of the human genome.

REFERENCES

1. Tonkin, E., et al. 2002. Identification and characterisation of novel mammalian homologues of *Drosophila* polyhomeotic permits new insights into relationships between members of the polyhomeotic family. *Hum. Genet.* 111: 435-442.
2. Levine, S.S., et al. 2002. The core of the polycomb repressive complex is compositionally and functionally conserved in flies and humans. *Mol. Cell. Biol.* 22: 6070-6078.
3. Otte, A.P. and Kwaks, T.H. 2003. Gene repression by Polycomb group protein complexes: a distinct complex for every occasion? *Curr. Opin. Genet. Dev.* 13: 448-454.
4. Isono, K., et al. 2005. Mammalian polyhomeotic homologues Phc2 and Phc1 act in synergy to mediate polycomb repression of Hox genes. *Mol. Cell. Biol.* 25: 6694-6706.
5. 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.
6. Deshpande, A.M., et al. 2007. PHC3, a component of the hPRC-H complex, associates with E2F6 during G₀ and is lost in osteosarcoma tumors. *Oncogene* 26: 1714-1722.

CHROMOSOMAL LOCATION

Genetic locus: Phc1 (mouse) mapping to 6 F1.

PRODUCT

PHC1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PHC1 shRNA Plasmid (m): sc-152203-SH and PHC1 shRNA (m) Lentiviral Particles: sc-152203-V as alternate gene silencing products.

For independent verification of PHC1 (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-152203A, sc-152203B and sc-152203C.

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

PHC1 siRNA (m) is recommended for the inhibition of PHC1 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 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

PHC1 (D-10): sc-390880 is recommended as a control antibody for monitoring of PHC1 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 PHC1 gene expression knockdown using RT-PCR Primer: PHC1 (m)-PR: sc-152203-PR (20 μ l). 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.

PROTOCOLS

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