SANTA CRUZ BIOTECHNOLOGY, INC.

PHC3 siRNA (h): sc-77997

BACKGROUND

Polycomb group (PcG) proteins assemble into multimeric protein complexes, which are involved in maintaining the transcriptional repressive state of genes throughout development. PHC3 (polyhomeotic-like protein 3), also known as Early development regulatory protein 3, is a 983 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 mo-noubiquination 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. Loss of heterozygosity of the PHC3 gene was observed in human osteosarcoma tumors, suggesting that loss of PHC3 protein may contribute to tumorigenesis. There are six isoforms of PHC3 that are expressed as a result of alternative splicing events.

REFERENCES

1. Tonkin, E., et al. 2002. Identification and characterisation of novel mammalian homologues of *Drosophila* polyhomeoticpermits 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 G_0 and is lost in osteosarcoma tumors. Oncogene 26: 1714-1722.

CHROMOSOMAL LOCATION

Genetic locus: PHC3 (human) mapping to 3q26.2.

PRODUCT

PHC3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PHC3 shRNA Plasmid (h): sc-77997-SH and PHC3 shRNA (h) Lentiviral Particles: sc-77997-V as alternate gene silencing products.

For independent verification of PHC3 (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-77997A, sc-77997B and sc-77997C.

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

PHC3 siRNA (h) is recommended for the inhibition of PHC3 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PHC3 gene expression knockdown using RT-PCR Primer: PHC3 (h)-PR: sc-77997-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.

PROTOCOLS

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