

PHC2 siRNA (m): sc-152204

BACKGROUND

Polycomb group (PcG) proteins assemble into multimeric protein complexes, which are involved in maintaining the transcriptional repressive state of genes throughout development. PHC2 (polyhomeotic-like protein 2), also known as early development regulatory protein 2, is an 858 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. Phosphorylated upon DNA damage, PHC2 contains one SAM (sterile α motif) domain and one FCS-type zinc finger.

REFERENCES

1. Gunster, M.J., Satijn, D.P., Hamer, K.M., den Blaauwen, J.L., de Bruijn, D., Alkema, M.J., van Lohuizen, M., van Driel, R. and Otte, A.P. 1997. Identification and characterization of interactions between the vertebrate polycomb-group protein BMI1 and human homologs of polyhomeotic. *Mol. Cell. Biol.* 17: 2326-2335.
2. Satijn, D.P., Gunster, M.J., van der Vlag, J., Hamer, K.M., Schul, W., Alkema, M.J., Saurin, A.J., Freemont, P.S., van Driel, R. and Otte, A.P. 1997. RING1 is associated with the polycomb group protein complex and acts as a transcriptional repressor. *Mol. Cell. Biol.* 17: 4105-4113.
3. Gunther, M., Laithier, M. and Brison, O. 2000. A set of proteins interacting with transcription factor Sp1 identified in a two-hybrid screening. *Mol. Cell. Biochem.* 210: 131-142.
4. Tonkin, E., Hagan, D.M., Li, W. and Strachan, T. 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.
5. Levine, S.S., Weiss, A., Erdjument-Bromage, H., Shao, Z., Tempst, P. and Kingston, R.E. 2002. The core of the polycomb repressive complex is compositionally and functionally conserved in flies and humans. *Mol. Cell. Biol.* 22: 6070-6078.
6. Yannoni, Y.M., Gaestel, M. and Lin, L.L. 2004. p66^{ShcA} interacts with MAPKAP kinase 2 and regulates its activity. *FEBS Lett.* 564: 205-211.
7. Wang, H., Wang, L., Erdjument-Bromage, H., Vidal, M., Tempst, P., Jones, R.S. and Zhang, Y. 2004. Role of Histone H2A ubiquitination in Polycomb silencing. *Nature* 431: 873-878.
8. Voncken, J.W., Niessen, H., Neufeld, B., Rennefahrt, U., Dahlmans, V., Kubben, N., Holzer, B., Ludwig, S. and Rapp, U.R. 2005. MAPKAP kinase 3pK phosphorylates and regulates chromatin association of the polycomb group protein Bmi1. *J. Biol. Chem.* 280: 5178-5187.
9. Lim, J., Hao, T., Shaw, C., Patel, A.J., Szabó, G., Rual, J.F., Fisk, C.J., Li, N., Smolyar, A., Hill, D.E., Barabási, A.L., Vidal, M. and Zoghbi, H.Y. 2006. A protein-protein interaction network for human inherited ataxias and disorders of Purkinje cell degeneration. *Cell* 125: 801-814.

CHROMOSOMAL LOCATION

Genetic locus: Phc2 (mouse) mapping to 4 D2.2.

PRODUCT

PHC2 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 PHC2 shRNA Plasmid (m): sc-152204-SH and PHC2 shRNA (m) Lentiviral Particles: sc-152204-V as alternate gene silencing products.

For independent verification of PHC2 (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-152204A, sc-152204B and sc-152204C.

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

PHC2 siRNA (m) is recommended for the inhibition of PHC2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PHC2 gene expression knockdown using RT-PCR Primer: PHC2 (m)-PR: sc-152204-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.