# PHC2 (Q-14): sc-160665



The Power to Question

## **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 monoubiquination 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  $\alpha$  motif) domain and one FCS-type zinc finger.

## **REFERENCES**

- 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.
- 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.
- 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.
- Tonkin, E., Hagan, D.M., Li, W. and Strachan, T. 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.
- 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.
- 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.
- 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.
- 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.
- 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 (human) mapping to 1p35.1; Phc2 (mouse) mapping to 4 D2.2.

## **SOURCE**

PHC2 (Q-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PHC2 of human origin.

## **PRODUCT**

Each vial contains 200  $\mu g$  lgG in 1.0 ml of PBS with <0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160665 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## **APPLICATIONS**

PHC2 (Q-14) is recommended for detection of PHC2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with PHC1 or PHC3.

PHC2 (Q-14) is also recommended for detection of PHC2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PHC2 siRNA (h): sc-88797, PHC2 siRNA (m): sc-152204, PHC2 shRNA Plasmid (h): sc-88797-SH, PHC2 shRNA Plasmid (m): sc-152204-SH, PHC2 shRNA (h) Lentiviral Particles: sc-88797-V and PHC2 shRNA (m) Lentiviral Particles: sc-152204-V.

Molecular Weight of PHC2: 90 kDa.

## **RECOMMENDED SECONDARY REAGENTS**

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

#### **STORAGE**

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## **RESEARCH USE**

For research use only, not for use in diagnostic procedures.

#### **PROTOCOLS**

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