SANTA CRUZ BIOTECHNOLOGY, INC.

HP1γ (N-15): sc-10213

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Chromatin assembly factor-1 (CAF-1) is a multisubunit protein complex that comprises three polypeptide subunits known as p150, p60, and p48. CAF-1 is a nucleosome assembly factor that deposits newly synthesized and acetylated histones H3/H4 into nascent chromatin during DNA replication. The p150 subunit of CAF-1 also supports the maintenance of heterochromatin, which requires the synthesis of both new histones and heterochromatin proteins and their orderly assembly during DNA replication. Heterochromatin is characterized as densely coiled chromatin that generally replicates late during S phase, has a low gene density, and contains large blocks of repetitive DNA that is relatively inaccessible to DNA-modifying reagents. In late S phase, p150 directly associates with heterochromatin associated proteins 1 (HP1α, HP1β and HP1γ). As cells prepare for mitosis, CAF-1 p150 and some HP1 progressively dissociate from heterochromatin, coinciding with the phosphorylation of Histone H3. The HP1 proteins reassociate with chromatin at the end of mitosis, as Histone H3 is dephosphorylated.

REFERENCES

1. Smith, S. and Stillman, B. 1989. Purification and characterization of CAF-I, a human cell factor required for chromatin assembly during DNA replication *in vitro*. Cell 58: 15-25.
2. Kaufman, P.D., et al. 1995. The p150 and p60 subunits of chromatin assembly factor I: a molecular link between newly synthesized histones and DNA replication. Cell 81: 1105-1114.
3. Verreault, A., et al. 1996. Nucleo-some assembly by a complex of CAF-1 and acetylated histones H3/H4. Cell 87: 95-104.
4. Minc, E., et al. 1999. Localization and phosphorylation of HP1 proteins during the cell cycle in mammalian cells. Chromosoma 108: 220-234.
5. Taddei, A., et al. 1999. Duplication and maintenance of heterochromatin domains. J. Cell Biol. 147: 1153-1166.

CHROMOSOMAL LOCATION

Genetic locus: CBX3 (human) mapping to 7p15.2; Cbx3 (mouse) mapping to 6 B3.

SOURCE

HP1γ (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of HP1γ of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-10213 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

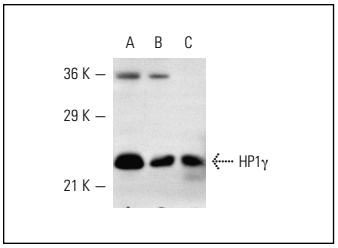
HP1γ (N-15) is recommended for detection of HP1γ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).).

Suitable for use as control antibody for HP1γ siRNA (h): sc-35589, HP1γ siRNA (m): sc-35590, HP1γ shRNA Plasmid (h): sc-35589-SH, HP1γ shRNA Plasmid (m): sc-35590-SH, HP1γ shRNA (h) Lentiviral Particles: sc-35589-V and HP1γ shRNA (m) Lentiviral Particles: sc-35590-V.

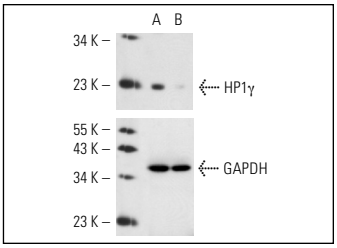
Molecular Weight of HP1γ: 23 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, K-562 nuclear extract: sc-2130 or NIH/3T3 nuclear extract: sc-2138.

DATA



HP1γ (N-15): sc-10213. Western blot analysis of HP1γ expression in HeLa (**A**), K-562 (**B**) and NIH/3T3 (**C**) nuclear extracts.



HP1γ siRNA (h): sc-35589. Western blot analysis of HP1γ expression in non-transfected control (**A**) and HP1γ siRNA transfected (**B**) HeLa cells. Blot probed with HP1γ (N-15): sc-10213. GAPDH (FL-335): sc-25778 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Kleene, R., et al. 2010. NCAM-induced neurite outgrowth depends on binding of calmodulin to NCAM and on nuclear import of NCAM and fak fragments. J. Neurosci. 30: 10784-10798.
2. Chuang, Y.S., et al. 2011. Promyelocytic leukemia protein in retinoic acid-induced chromatin remodeling of Oct4 gene promoter. Stem Cells 29: 660-669.

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.