SANTA CRUZ BIOTECHNOLOGY, INC.

HP1 (D-15): sc-10217

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, 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.
6. Murzina, N., et al. 1999. Heterochromatin dynamics in mouse cells: interaction between chromatin assembly factor 1 and HP1 proteins. Mol. Cell 4: 529-540.

SOURCE

HP1 (D-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of HP1 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-10217 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

HP1 (D-15) is recommended for detection of HP1α, HP1β and 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).

HP1 (D-15) is also recommended for detection of HP1α, HP1β and HP1γ in additional species, including equine, canine, bovine and porcine.

Molecular Weight of HP1: 25 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Young, A.P., et al. 2004. Differences in stability of repressor complexes at promoters underlie distinct roles for Rb family members. Oncogene 23: 814-823.
2. Park, S.W., et al. 2005. Retinoic acid-induced chromatin remodeling of mouse κ opioid receptor gene. J. Neurosci. 25: 3350-3357.
3. Kajiyama, Y., et al. 2006. Characterization of distant enhancers and promoters in the albumin-α-fetoprotein locus during active and silenced expression. J. Biol. Chem. 281: 30122-30131.
4. Martins, R.P., et al. 2007. Decondensing the protamine domain for transcription. Proc. Natl. Acad. Sci. USA 104: 8340-8345.

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.