

HP1 (E-13): sc-10215

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 (HP1 α , HP1 β and HP1 γ). 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., Kobayashi, R., Kessler, N. and Stillman, B. 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., Kaufman, P.D., Kobayashi, R. and Stillman, B. 1996. Nucleosome assembly by a complex of CAF-1 and acetylated histones H3/H4. Cell 87: 95-104.
4. Minc, E., Allory, Y., Worman, H.J., Courvalin, J.C. and Buendia, B. 1999. Localization and phosphorylation of HP1 proteins during the cell cycle in mammalian cells. Chromosoma 108: 220-234.
5. Taddei, A., Roche, D., Sibarita, J.B., Turner, B.M. and Almouzni, G. 1999. Duplication and maintenance of heterochromatin domains. J. Cell Biol. 147: 1153-1166.
6. Murzina, N., Verreault, A., Laue, E. and Stillman, B. 1999. Heterochromatin dynamics in mouse cells: interaction between chromatin assembly factor 1 and HP1 proteins. Mol. Cell 4: 529-540.
7. Koike, N., Maita, H., Taira, T., Ariga, H. and Iguchi-Ariga, S.M. 2000. Identification of heterochromatin protein 1 (HP1) as a phosphorylation target by Pim-1 kinase and the effect of phosphorylation on the transcriptional repression function of HP1(1). FEBS Lett. 467: 17-21.

CHROMOSOMAL LOCATION

Genetic locus: CBX5 (human) mapping to 12q13.13; Cbx5 (mouse) mapping to 15 F3.

SOURCE

HP1 (E-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of HP1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-10215 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HP1 (E-13) is recommended for detection of HP1 α , HP1 β and HP1 γ 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).

HP1 (E-13) is also recommended for detection of HP1 α , HP1 β and HP1 γ 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) 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. Chen, X., El Gazzar, M., Yoza, B.K. and McCall, C.E. 2009. The NF- κ B factor RelB and histone H3 lysine methyltransferase G9a directly interact to generate epigenetic silencing in endotoxin tolerance. J. Biol. Chem. 284: 27857-27865.

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.



Try **HP1 (E-6): sc-515341** or **HP1 γ (F-1): sc-398562**, our highly recommended monoclonal alternatives to HP1 (E-13).