

HP1 α (GA-62): sc-130446

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., et al. 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.

CHROMOSOMAL LOCATION

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

SOURCE

HP1 α (GA-62) is a mouse monoclonal antibody raised against full length recombinant HP1 α of human origin.

PRODUCT

Each vial contains 100 μ g IgG κ light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HP1 α (GA-62) is recommended for detection of HP1 α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 HP1 α siRNA (h): sc-37737, HP1 α siRNA (m): sc-37738, HP1 α shRNA Plasmid (h): sc-37737-SH, HP1 α shRNA Plasmid (m): sc-37738-SH, HP1 α shRNA (h) Lentiviral Particles: sc-37737-V and HP1 α shRNA (m) Lentiviral Particles: sc-37738-V.

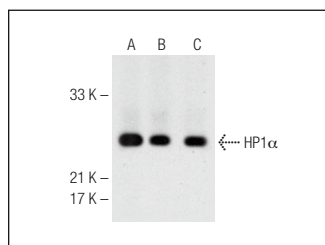
Molecular Weight of HP1 α : 22 kDa.

Positive Controls: MCF7 nuclear extract: sc-2149, Jurkat nuclear extract: sc-2132 or K-562 nuclear extract: sc-2130.

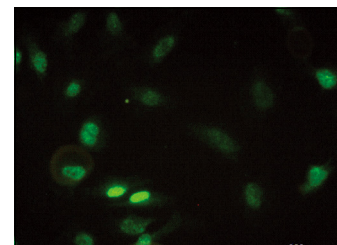
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



HP1 α (GA-62): sc-130446. Western blot analysis of HP1 α expression in K-562 (A), MCF7 (B) and Jurkat (C) nuclear extracts.



HP1 α (GA-62): sc-130446. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Ye, S., et al. 2019. SET domain-containing protein 4 epigenetically controls breast cancer stem cell quiescence. Cancer Res. 79: 4729-4743.
2. Bosso, G., et al. 2019. NBS1 interacts with HP1 to ensure genome integrity. Cell Death Dis. 10: 951.
3. Albanesi, J., et al. 2020. Transcriptional and metabolic dissection of ATRA-induced granulocytic differentiation in NB4 acute promyelocytic leukemia cells. Cells 9: 2423.
4. Ka, N.L., et al. 2021. IFI16 inhibits DNA repair that potentiates type-I interferon-induced antitumor effects in triple negative breast cancer. Cell Rep. 37: 110138.
5. Zhang, L., et al. 2022. 53BP1 regulates heterochromatin through liquid phase separation. Nat. Commun. 13: 360.

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 for detailed protocols and support products.