SANTA CRUZ BIOTECHNOLOGY, INC.

HP1γ (F-1): sc-398562

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

SOURCE

HP1γ (F-1) is a mouse monoclonal antibody raised against amino acids 1-104 mapping at the N-terminus of HP1γ of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HP1γ (F-1) is available conjugated to agarose (sc-398562 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398562 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398562 PE), fluorescein (sc-398562 FITC), Alexa Fluor® 488 (sc-398562 AF488), Alexa Fluor® 546 (sc-398562 AF546), Alexa Fluor® 594 (sc-398562 AF594) or Alexa Fluor® 647 (sc-398562 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398562 AF680) or Alexa Fluor® 790 (sc-398562 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

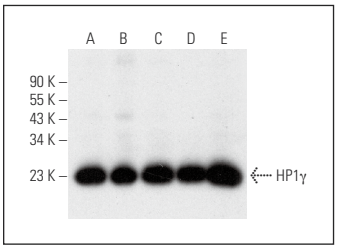
HP1γ (F-1) is recommended for detection of HP1γ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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.

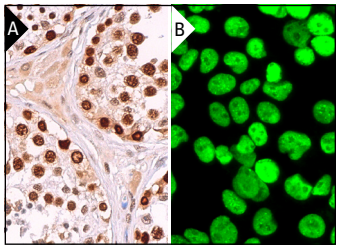
Molecular Weight of HP1γ: 23 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa nuclear extract: sc-2120 or HeLa whole cell lysate: sc-2200.

DATA



HP1γ (F-1): sc-398562. Western blot analysis of HP1γ expression in HeLa (**A**) and K-562 (**B**) nuclear extracts and K-562 (**C**), HeLa (**D**) and MCF7 (**E**) whole cell lysates.



HP1γ (F-1): sc-398562. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of cells in seminiferous ducts (**A**). Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (**B**).

SELECT PRODUCT CITATIONS

1. Wu, Y., et al. 2019. ASF1a inhibition induces p53-dependent growth arrest and senescence of cancer cells. Cell Death Dis. 10: 76.
2. Waybright, J.M., et al. 2021. A peptidomimetic ligand targeting the chromodomain of MPP8 reveals HRP2's association with the HUSH complex. ACS Chem. Biol. 16: 1721-1736.
3. Westervelt, N., et al. 2021. Deletion of the XIST promoter from the human inactive X chromosome compromises polycomb heterochromatin maintenance. Chromosoma 130: 177-197.
4. Zhang, L., et al. 2022. 53BP1 regulates heterochromatin through liquid phase separation. Nat. Commun. 13: 360.
5. Kiseleva, A.A., et al. 2023. PRR14 organizes H3K9me3-modified heterochromatin at the nuclear lamina. Nucleus 14: 2165602.

RESEARCH USE

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