SANTA CRUZ BIOTECHNOLOGY, INC.

HP1β (4D7B8): sc-517288

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.
3. Verreault, A., et al. 1996. Nucleosome 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.

CHROMOSOMAL LOCATION

Genetic locus: CBX1 (human) mapping to 17q21.32; Cbx1 (mouse) mapping to 11 D.

SOURCE

HP1β (4D7B8) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 1-185 representing full length HP1β of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HP1β (4D7B8) is available conjugated to agarose (sc-517288 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-517288 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-517288 PE), fluorescein (sc-517288 FITC), Alexa Fluor® 488 (sc-517288 AF488), Alexa Fluor® 546 (sc-517288 AF546), Alexa Fluor® 594 (sc-517288 AF594) or Alexa Fluor® 647 (sc-517288 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-517288 AF680) or Alexa Fluor® 790 (sc-517288 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

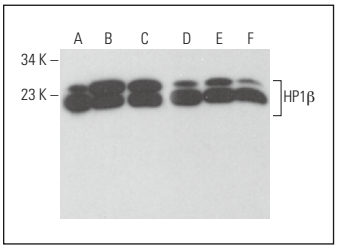
HP1β (4D7B8) is recommended for detection of HP1β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HP1β siRNA (h): sc-35587, HP1β siRNA (m): sc-35588, HP1β shRNA Plasmid (h): sc-35587-SH, HP1β shRNA Plasmid (m): sc-35588-SH, HP1β shRNA (h) Lentiviral Particles: sc-35587-V and HP1β shRNA (m) Lentiviral Particles: sc-35588-V.

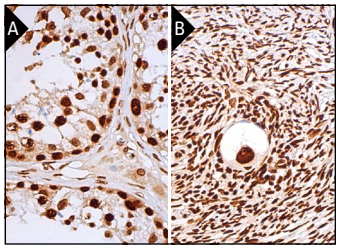
Molecular Weight of HP1β: 25 kDa.

Positive Controls: A-431 nuclear extract: sc-2122, IMR-32 cell lysate: sc-2409 or PC-12 cell lysate: sc-2250.

DATA



HP1β (4D7B8): sc-517288. Western blot analysis of HP1β expression in A-431 nuclear extract (**A**) and IMR-32 (**B**), Caco-2 (**C**), KNRK (**D**), PC-12 (**E**) and A-10 (**F**) whole cell lysates.



HP1β (4D7B8): sc-517288. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of cells in seminiferous ducts and Leydig cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing nuclear staining of follicle cells, ovarian stroma cells and oocytes (**B**).

SELECT PRODUCT CITATIONS

1. 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.
2. Seefried, F., et al. 2022. Nuclear AREG affects a low-proliferative phenotype and contributes to drug resistance of melanoma. Int. J. Cancer 151: 2244-2264.

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.