SANTA CRUZ BIOTECHNOLOGY, INC.

# HP1 (E-6): sc-515341

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 (HP1), HP1$\alpha$, HP1$\beta$ and HP1$\gamma$. 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.

## SOURCE

HP1 (E-6) is a mouse monoclonal antibody raised against amino acids 1-191 representing full length HP1$\alpha$ 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.

HP1 (E-6) is available conjugated to agarose (sc-515341 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515341 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515341 PE), fluorescein (sc-515341 FITC), Alexa Fluor® 488 (sc-515341 AF488), Alexa Fluor® 546 (sc-515341 AF546), Alexa Fluor® 594 (sc-515341 AF594) or Alexa Fluor® 647 (sc-515341 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515341 AF680) or Alexa Fluor® 790 (sc-515341 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

HP1 (E-6) is recommended for detection of HP1$\alpha$, HP1$\beta$ and HP1$\gamma$ 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of HP1: 25 kDa.

Positive Controls: F9 cell lysate: sc-2245, MCF7 nuclear extract: sc-2149 or K-562 nuclear extract: sc-2130.

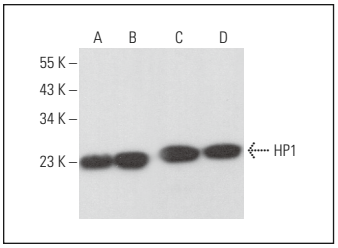
## STORAGE

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

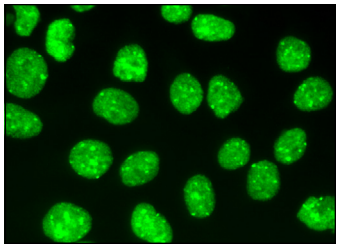
## RESEARCH USE

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

## DATA




HP1 (E-6): sc-515341. Western blot analysis of HP1 expression in MCF7 (**A**) and K-562 (**B**) nuclear extracts and F9 (**C**) and PC-12 (**D**) whole cell lysates.



HP1 (E-6): sc-515341. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization.

## SELECT PRODUCT CITATIONS


1. Yao, R.W., et al. 2019. Nascent pre-rRNA sorting via phase separation drives the assembly of dense fibrillar components in the human nucleolus. Mol. Cell 76: 767-783.e11.
2. Feng, H., et al. 2020. Orexin signaling modulates synchronized excitation in the sublaterodorsal tegmental nucleus to stabilize REM sleep. Nat. Commun. 11: 3661.
3. Zhu, B., et al. 2020. Cytomorphology, immunoprofile, and management of renal oncocytic neoplasms. Cancer Cytopathol. 128: 962-970.
4. Gao, N., et al. 2020. A role of Lamin A/C in preventing neuromuscular junction decline in mice. J. Neurosci. 40: 7203-7215.
5. Krieger, L.M., et al. 2021. Disruption of chromatin dynamics by hypotonic stress suppresses HR and shifts DSB processing to error-prone SSA. Int. J. Mol. Sci. 22: 10957.
6. Mei, L., et al. 2022. The consequences of differential origin licensing dynamics in distinct chromatin environments. Nucleic Acids Res. 50: 9601-9620.
7. Panatta, E., et al. 2022. Metabolic regulation by p53 prevents R-loop-associated genomic instability. Cell Rep. 41: 111568.
8. Christou-Kent, M., et al. 2023. CEBPA phase separation links transcriptional activity and 3D chromatin hubs. Cell Rep. 42: 112897.
9. Ramesh, V., et al. 2023. Propionate reinforces epithelial identity and reduces aggressiveness of lung carcinoma. EMBO Mol. Med. 15: e17836.


## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.