

Ac-Histone H3 (AH3-120): sc-56616

BACKGROUND

In eukaryotes, DNA is wrapped around histone octamers to form the basic unit of chromatin structure. The octamer is composed of Histones H2A, H2B, H3 and H4, and it associates with approximately 200 base pairs of DNA to form the nucleosome. The association of DNA with histones results in dense packing of chromatin, which restricts proteins involved in gene transcription from binding to DNA. p300 preferentially acetylates Histone H3 at lysines 14 and 18 and Histone H4 at lysines 5 and 8. PCAF in its native form, primarily acetylates Histone H3 at lysine 14 to a monoacetylated form, and less efficiently acetylates Histone H4 at lysine 8. Histone H4 may also be acetylated at lysines 12 and 16, and the involvement of acetylated H4 with Histones H2A, H2B and H3 suggests that acetylated histones may be involved in dynamic chromatin remodeling.

SOURCE

Ac-Histone H3 (AH3-120) is a mouse monoclonal antibody raised against an amino acid sequence containing acetylated Lys 9 of Histone H3 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Ac-Histone H3 (AH3-120) is recommended for detection of Ac-Histone H3 of mouse, rat, human, *Drosophila*, *Xenopus*, *C. elegans* and bovine 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Ac-Histone H3: 17 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

Santa Cruz Biotechnology offers several chemical inducers of acetylation, including: Apicidin (sc-202061), Panobinostat (sc-208148), Suberoylanilide Hydroxamic Acid (sc-220139), Oxamflatin (sc-205960), Ms-275 (sc-279455), M 344 (sc-203124), Scriptaid (sc-202807), Trapoxin A (sc-253730) and Trichostatin A (sc-3511).

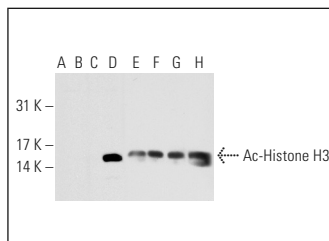
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

STORAGE

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

DATA



Western blot analysis of Histone H3 acetylation in untreated (A,E), Trichostatin A treated (B,F) calyculin A treated (C,G) and Trichostatin A and calyculin A treated (D,H) NIH/3T3 whole cell lysates. Antibodies tested include Ac-Histone H3 (AH3-120): sc-56616 (A,B,C,D) and Histone H3 (FL-136): sc-10809 (E,F,G,H).

SELECT PRODUCT CITATIONS

- Shepard, B.D., et al. 2010. Chronic ethanol consumption induces global hepatic protein hyperacetylation. *Alcohol. Clin. Exp. Res.* 34: 280-291.
- Lambertini, E., et al. 2012. Correlation between Slug transcription factor and miR-221 in MDA-MB-231 breast cancer cells. *BMC Cancer* 12: 445.
- Kitir, B., et al. 2017. Chemical editing of macrocyclic natural products and kinetic profiling reveal slow, tight-binding histone deacetylase inhibitors with picomolar affinities. *Biochemistry* 56: 5134-5146.
- Lu, D., et al. 2017. A vitamin D receptor agonist converts CD4⁺ T cells to Foxp3⁺ regulatory T cells in patients with ulcerative colitis. *Oncotarget* 8: 53552-53562.
- Girault, V., et al. 2017. Prenatal alcohol exposure impairs autophagy in neonatal brain cortical microvessels. *Cell Death Dis.* 8: e2610.
- Miao, B.P., et al. 2018. Histone acetyltransferase 1 up regulates Bcl2L12 expression in nasopharyngeal cancer cells. *Arch. Biochem. Biophys.* 646: 72-79.
- Cho, Y.S., et al. 2018. Regulation of Yki/Yap subcellular localization and Hpo signaling by a nuclear kinase PRP4K. *Nat. Commun.* 9: 1657.
- Kakad, P.P., et al. 2018. An ankyrin-binding motif regulates nuclear levels of L1-type neuroglial and expression of the oncogene Myc in *Drosophila* neurons. *J. Biol. Chem.* 293: 17442-17453.
- Chen, Y.S., et al. 2019. Ursodeoxycholic acid regulates hepatic energy homeostasis and white adipose tissue macrophages polarization in leptin-deficiency obese mice. *Cells* 8 pii: E253.

RESEARCH USE

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