SANTA CRUZ BIOTECHNOLOGY, INC.

Ac-Histone H4 (Lys 12)-R: sc-8661-R

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.

REFERENCES

1. Doenecke, D., et al. 1988. The H1 and core histone subtypes: differential gene expression and varied primary structures. Adv. Enzyme Regul. 27: 107-120.
2. Lewin, B. 1990. GENES IV. Oxford: Oxford University Press, 411-412.

SOURCE

Ac-Histone H4 (Lys 12)-R is a rabbit polyclonal antibody raised against a short peptide containing acetylated Lys 12 of Histone H4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8661 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Ac-Histone H4 (Lys 12)-R is recommended for detection of Lys 12 acetylated histone H4 of broad species 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with non-acetylated Histone H4 or other lysine acetylation sites.

Molecular Weight of acetylated and non-acetylated Ac-Histone H4: 11 kDa.

Molecular Weight of hyper-acetylated Ac-Histone H4: 35 kDa.

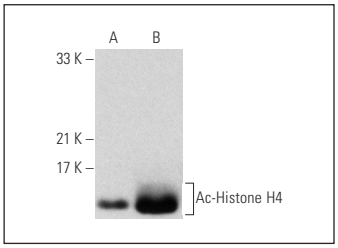
Positive Controls: SK-N-MC nuclear extract: sc-2154, IMR-32 nuclear extract: sc-2148 or HeLa nuclear extract: sc-2120.

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).

STORAGE

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

DATA



Ac-Histone H4 (Lys 12)-R: sc-8661-R. Western blot analysis of Ac-Histone H4 acetylation in untreated (**A**) and Trichostatin A (sc-3511) treated (**B**) NIH/3T3 whole cell lysates. Note upregulation of Ac-Histone H4 expression in lane **B**.

SELECT PRODUCT CITATIONS

1. Morotti, A., et al. 2006. Valproate enhances imatinib-induced growth arrest and apoptosis in chronic myeloid leukemia cells. Cancer 106: 1188-1196.
2. Zhang, Z. and Klatt, A. 2007. Negative elongation factor NELF represses human immunodeficiency virus transcription by pausing the RNA polymerase II complex. J. Biol. Chem. 282: 16981-16988.
3. Lin, W.N., et al. 2008. Lipopolysaccharide induces VCAM-1 expression and neutrophil adhesion to human tracheal smooth muscle cells: involvement of Src/EGFR/PI3-K/Akt pathway. Toxicol. Appl. Pharmacol. 228: 256-268.
4. Carlisi, D., et al. 2008. Histone deacetylase inhibitors induce in human hepatoma Hep G2 cells acetylation of p53 and histones in correlation with apoptotic effects. Int. J. Oncol. 32: 177-184.
5. Govindan, M.V. 2010. Recruitment of cAMP-response element-binding protein and histone deacetylase has opposite effects on glucocorticoid receptor gene transcription. J. Biol. Chem. 285: 4489-4510.
6. Tsai, S.Y., et al. 2012. Hepatocyte growth factor-induced BMP-2 expression is mediated by c-Met receptor, FAK, JNK, Runx2, and p300 pathways in human osteoblasts. Int. Immunopharmacol. 13: 156-162.
7. Honda, T., et al. 2013. Regulation of adipocyte differentiation of 3T3-L1 cells by PDZRN3. Am. J. Physiol., Cell Physiol. 304: C1091-C1097.

RESEARCH USE

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

MONOS Satisfaction Guaranteed

Try **Ac-Histone H4 (E-5): sc-377520** or **Ac-Histone H4 (F-3): sc-377521**, our highly recommended monoclonal alternatives to Ac-Histone H4 (Lys 12).