SANTA CRUZ BIOTECHNOLOGY, INC.

Ac-Histone H4 [Ser 1/Lys 5/Lys 8/Lys 12] (G-2): sc-393472

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

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 [Ser 1/Lys 5/Lys 8/Lys 12] (G-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 3-22 acetylated Serine 1 and Lysine 5, 8 and 12 of Histone H4 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.

Blocking peptide available for competition studies, sc-393472 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Ac-Histone H4 [Ser 1/Lys 5/Lys 8/Lys 12] (G-2) is recommended for detection of Serine 1, Lysine 5, Lysine 8 and Lysine 12 acetylated Histone H4 of broad species 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).

Ac-Histone H4 [Ser 1/Lys 5/Lys 8/Lys 12] (G-2) is also recommended for detection of Serine 1, Lysine 5, Lysine 8 and Lysine 12 acetylated Histone H4 in additional species, including equine, canine, bovine, porcine and avian.

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

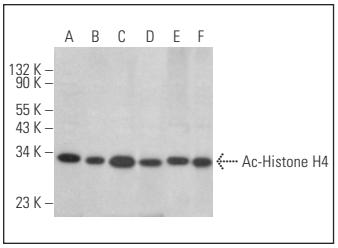
Molecular Weight of hyper-acetylated Ac-Histone H4: 35 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or Jurkat whole cell lysate: sc-2204.

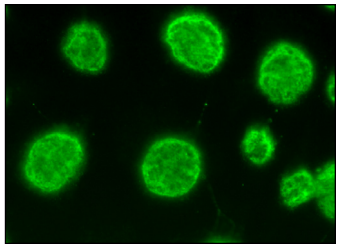
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Ac-Histone H4 [Ser 1/Lys 5/Lys 8/Lys 12] (G-2): sc-393472. Western blot analysis of Ac-Histone H4 expression in HeLa (**A**), A549 (**B**), A-431 (**C**) and Jurkat (**D**) whole cell lysates and IMR-32 (**E**) and K-562 (**F**) nuclear extracts.



Ac-Histone H4 (Ser 1/Lys 5/Lys 8/Lys 12) (G-2): sc-393472. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Yeheskely-Hayon, D., et al. 2013. The roles of the catalytic and noncatalytic activities of Rpd3L and Rpd3S in the regulation of gene transcription in yeast. PLoS ONE 8: e85088.
2. Yakhine-Diop, S.M.S., et al. 2018. Acetylome in human fibroblasts from Parkinson's disease patients. Front. Cell. Neurosci. 12: 97.
3. Yakhine-Diop, S.M.S., et al. 2019. Impaired mitophagy and protein acetylation levels in fibroblasts from Parkinson's disease patients. Mol. Neurobiol. 56: 2466-2481.

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.

PROTOCOLS

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