

# Ac-Histone H2B (E-6): sc-515937

## 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. Histones H2A and H2B are acetylated in bulk chromatin by p300 and form acetylated H2A.H2B heterodimers. Nucleosomal particles containing acetylated H2A.H2B dimers protect 145 base pairs of DNA against micrococcal nuclease digestion. When DNA associates with intact core histone octamers that contain acetylated H2A.H2B dimers, the inhibition of transcriptional initiation significantly decreases, indicating that acetylation of their lysine residues may mediate transcription.

## REFERENCES

1. Doenecke, D., Tönjes, R. and Kress, H. 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.
3. Puerta, C., Hernández, F., López-Alarcón, L. and Palacián, E. 1995. Acetylation of Histone H2A.H2B dimers facilitates transcription. *Biochem. Biophys. Res. Commun.* 210: 409-416.
4. Wolffe, A.P. 1997. Histone H1. *Int. J. Biochem. Cell Biol.* 29: 1463-1466.
5. Schiltz, R.L., Mizzen, C.A., Vassilev, A., Cook, R.G., Allis, C.D. and Nakatani, Y. 1999. Overlapping but distinct patterns of histone acetylation by the human coactivators p300 and PCAF within nucleosomal substrates. *J. Biol. Chem.* 274: 1189-1192.

## SOURCE

Ac-Histone H2B (E-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1-28 of acetylated Lys 5, Lys 12 and Lys 20 of Histone H2B of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ac-Histone H2B (E-6) is available conjugated to agarose (sc-515937 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515937 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515937 PE), fluorescein (sc-515937 FITC), Alexa Fluor® 488 (sc-515937 AF488), Alexa Fluor® 546 (sc-515937 AF546), Alexa Fluor® 594 (sc-515937 AF594) or Alexa Fluor® 647 (sc-515937 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515937 AF680) or Alexa Fluor® 790 (sc-515937 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## APPLICATIONS

Ac-Histone H2B (E-6) is recommended for detection of Histone H2B acetylated at Lys 5, Lys 12, Lys 15 and Lys 20 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).

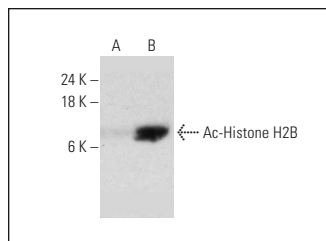
Molecular Weight of Ac-Histone H2B: 13 kDa.

Positive Controls: NIH/3T3 + Trichostatin A whole cell lysate or NIH/3T3 whole cell lysate: sc-2210.

## 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 H2B (E-6): sc-515937. Western blot analysis of Ac-Histone H2B expression in NIH/3T3 (A) and NIH/3T3 + Trichostatin A (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Ma, S., Liu, T., Xu, L., Wang, Y., Zhou, J., Huang, T., Li, P., Liu, H., Zhang, Y., Zhou, X., Cui, Y., Zang, X., Wang, Y. and Guan, F. 2019. Histone deacetylases inhibitor MS-275 suppresses human esophageal squamous cell carcinoma cell growth and progression via the PI3K/Akt/mTOR pathway. *J. Cell. Physiol.* 234: 22400-22410.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.