

HDAC4/5/7 (H-273): sc-11421

BACKGROUND

In the intact cell, DNA closely associates with histones and other nuclear proteins to form chromatin. The remodeling of chromatin is believed to be a critical component of transcriptional regulation and a major source of this remodeling is brought about by the acetylation of nucleosomal histones. Acetylation of lysine residues in the amino terminal tail domain of histone results in an allosteric change in the nucleosomal conformation and an increased accessibility to transcription factors by DNA. Conversely, the deacetylation of histones is associated with transcriptional silencing. Several mammalian proteins have been identified as nuclear histone acetylases, including GCN5, PCAF (p300/CBP-associated factor), p300/CBP, HAT1 and the TFIID subunit TAF II p250. Mammalian HDAC7 is a histone deacetylase that interacts with the adaptor mSin3A. The interaction of HDAC7 with mSin3A suggests the association of multiple repression complexes of transcription factors.

REFERENCES

- Lee, D.Y., et al. 1993. A positive role for histone acetylation in transcription factor access to nucleosomal DNA. *Cell* 72: 73-82.
- Braunstein, M., et al. 1993. Transcriptional silencing in yeast is associated with reduced nucleosome acetylation. *Genes Dev.* 7: 592-604.
- Bauer, W.R., et al. 1994. Nucleosome structural changes due to acetylation. *J. Mol. Biol.* 236: 685-690.
- Utlely, R.T., et al. 1998. Transcriptional activators direct histone acetyltransferase complexes to nucleosomes. *Nature* 394: 498-502.
- Verreault, A., et al. 1998. Nucleosomal DNA regulates the core-histone-binding subunit of the human Hat1 acetyltransferase. *Curr. Biol.* 8: 96-108.
- Kao, H.Y., et al. 2000. Isolation of a novel histone deacetylase reveals that class I and class II deacetylases promote SMRT-mediated repression. *Genes Dev.* 14: 55-66.

SOURCE

HDAC4/5/7 (H-273) is a rabbit polyclonal antibody raised against amino acids 163-435 mapping near the N-terminus of HDAC7 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.

Available as TransCruz reagent for ChIP application, sc-11421 X, 200 µg/0.1 ml.

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 or our catalog for detailed protocols and support products.

APPLICATIONS

HDAC4/5/7 (H-273) is recommended for detection of HDAC4, HDAC5 and HDAC7 of mouse, rat and human 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).

HDAC7 (H-273) X TransCruz antibody is recommended for ChIP assays.

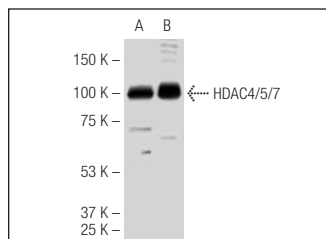
Molecular Weight of HDAC4: 140 kDa.

Molecular Weight of HDAC5: 140-150 kDa.

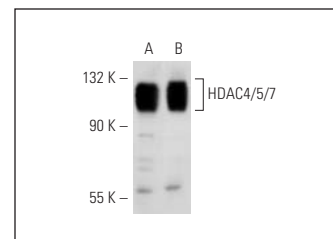
Molecular Weight of HDAC7: 105 kDa.

Positive Controls: HDAC7 (h2): 293T Lysate: sc-117296, HDAC7 (h): 293 Lysate: sc-112934 or HeLa whole cell lysate: sc-2200.

DATA



HDAC4/5/7 (H-273): sc-11421. Western blot analysis of HDAC4/5/7 expression in NIH/3T3 whole cell lysate (A) and NIH/3T3 nuclear extract (B).



HDAC4/5/7 (H-273): sc-11421. Western blot analysis of HDAC4/5/7 expression in K-562 nuclear extract (A) and SUP-T1 whole cell lysate (B).

SELECT PRODUCT CITATIONS

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- Shen, S., et al. 2005. Histone modifications affect timing of oligodendrocyte progenitor differentiation in the developing rat brain. *J. Chem. Biol.* 169: 577-589.
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- Stossi, F., et al. 2006. Estrogen-occupied estrogen receptor represses cyclin G2 gene expression and recruits a repressor complex at the cyclin G2 promoter. *J. Biol. Chem.* 281: 16272-16278.
- Kasler, H., et al. 2007. Histone deacetylase 7 functions as a key regulator of genes involved in both positive and negative selection of thymocytes. *Mol. Cell. Biol.* 27: 5184-5200.
- Gutti, R., et al. 2008. Gonadotropin-regulated testicular helicase (DDX25), an essential regulator of spermatogenesis, prevents testicular germ cell apoptosis. *J. Biol. Chem.* 283: 17055-17064.