

HDAC4 (h): 293T Lysate: sc-115502

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 and the TFIID subunit TAF II p250. Mammalian HDAC1 (also designated HD1), HDAC2 (also designated RPD3) and HDAC3-6 have been identified as histone deacetylases.

REFERENCES

- Lee, D.Y., Hayes, J.J., Pruss, D. and Wolffe, A.P. 1993. A positive role for histone acetylation in transcription factor access to nucleosomal DNA. *Cell* 72: 73-82.
- Braunstein, M., Rose, A.B., Holmes, S.G., Allis, C.D. and Broach, J.R. 1993. Transcriptional silencing in yeast is associated with reduced nucleosome acetylation. *Genes Dev.* 7: 592-604.
- Bauer, W.R., Hayes, J.J., White, J.H. and Wolffe, A.P. 1994. Nucleosome structural changes due to acetylation. *J. Mol. Biol.* 236: 685-690.
- Taunton, J., Hassig, C.A. and Schreiber, S.L. 1996. A mammalian histone deacetylase related to the yeast transcriptional regulator Rpd3p. *Science* 272: 408-411.
- Uitley, R.T., Ikeda, K., Grant, P.A., Cote, J., Steger, D.J., Eberharter, A., John, S. and Workman, J.L. 1998. Transcriptional activators direct histone acetyltransferase complexes to nucleosomes. *Nature* 394: 498-502.
- Verreault, A., Kaufman, P.D., Kobayashi, R. and Stillman, B. 1998. Nucleosomal DNA regulates the core-histone-binding subunit of the human Hat1 acetyltransferase. *Curr. Biol.* 8: 96-108.
- Kuo, M.H. and Allis, C.D. 1998. Roles of histone acetyltransferase and deacetylases in gene regulation. *Bioessays* 20: 615-626.
- Emiliani, S., Fischle, W., Van Lint, C. and Verdin, E. 1998. Characterization of a human RPD3 ortholog, HDAC3. *Proc. Natl. Acad. Sci. USA* 95: 2795-2800.
- Grozinger, C.M., Hassig, C.A. and Schreiber, S.L. 1999. Three proteins define a class of human histone deacetylases related to yeast Hda1p. *Proc. Natl. Sci. USA* 96: 4868-4873.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: HDAC4 (human) mapping to 2q37.3.

PRODUCT

HDAC4 (h): 293T Lysate represents a lysate of human HDAC4 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

HDAC4 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive HDAC4 antibodies. Recommended use: 10-20 µl per lane.

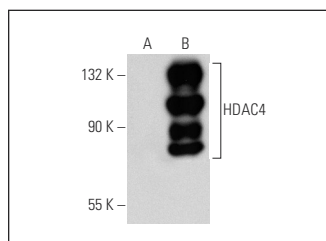
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

HDAC4 (A-4): sc-46672 is recommended as a positive control antibody for Western Blot analysis of enhanced human HDAC4 expression in HDAC4 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



HDAC4 (A-4): sc-46672. Western blot analysis of HDAC4 expression in non-transfected: sc-117752 (A) and human HDAC4 transfected: sc-115502 (B) 293T whole cell lysates.

RESEARCH USE

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