

HDAC4 (HDAC-144): sc-56686

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, p300/CBP, PCAF (p300/CBP associated factor), HAT1, 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

1. Lee, D.Y., et al. 1993. A positive role for histone acetylation in transcription factor access to nucleosomal DNA. *Cell* 72: 73-82.
2. Braunstein, M., et al. 1993. Transcriptional silencing in yeast is associated with reduced nucleosome acetylation. *Genes Dev.* 7: 592-604.
3. Bauer, W.R., et al. 1994. Nucleosome structural changes due to acetylation. *J. Mol. Biol.* 236: 685-690.
4. Taunton, J., et al. 1996. A mammalian histone deacetylase related to the yeast transcriptional regulator Rpd3p. *Science* 272: 408-411.
5. Utle, R.T., et al. 1998. Transcriptional activators direct histone acetyltransferase complexes to nucleosomes. *Nature* 394: 498-502.
6. Verreault, A., et al. 1998. Nucleosomal DNA regulates the core-histone-binding subunit of the human HAT1 acetyltransferase. *Curr. Biol.* 8: 96-108.
7. Kuo, M.H., et al. 1998. Roles of histone acetyltransferase and deacetylases in gene regulation. *Bioessays* 20: 615-626.
8. Emiliani, S., et al. 1998. Characterization of a human RPD3 ortholog, HDAC3. *Proc. Natl. Acad. Sci. USA* 95: 2795-2800.
9. Grozinger, C.M., et al. 1999. Three proteins define a class of human histone deacetylases related to yeast Hda1p. *Proc. Natl. Acad. Sci. USA* 96: 4868-4873.

CHROMOSOMAL LOCATION

Genetic locus: HDAC4 (human) mapping to 2q37.3; Hdac4 (mouse) mapping to 1 D.

SOURCE

HDAC4 (HDAC-144) is a mouse monoclonal antibody raised against amino acids 1-19 of HDAC4 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

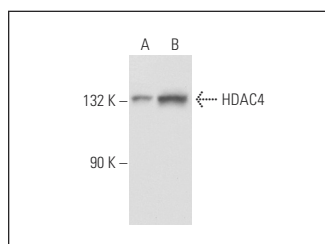
HDAC4 (HDAC-144) is recommended for detection of HDAC4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for HDAC4 siRNA (h): sc-35540, HDAC4 siRNA (m): sc-35541, HDAC4 shRNA Plasmid (h): sc-35540-SH, HDAC4 shRNA Plasmid (m): sc-35541-SH, HDAC4 shRNA (h) Lentiviral Particles: sc-35540-V and HDAC4 shRNA (m) Lentiviral Particles: sc-35541-V.

Molecular Weight of HDAC4: 140 kDa.

Positive Controls: HDAC4 (h): 293T Lysate: sc-115502, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

DATA



HDAC4 (HDAC-144): sc-56686. Western blot analysis of HDAC4 expression in non-transfected: sc-117752 (A) and human HDAC4 transfected: sc-115502 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Jebessa, Z.H., et al. 2019. The lipid droplet-associated protein ABHD5 protects the heart through proteolysis of HDAC4. *Nat. Metab.* 1: 1157-1167.

STORAGE

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

PROTOCOLS

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



See **HDAC4 (A-4): sc-46672** for HDAC4 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.