SANTA CRUZ BIOTECHNOLOGY, INC.

HDAC2 (HDAC2-62): sc-56685

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 histones 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 (for p300/CBP-associated factor), p300/CBP and the TFIID subunit TAF II p250. Mammalian HDAC1 (also designated HD1) and HDAC2 (also designated mammalian RPD3), both of which are related to the yeast transcriptional regulator Rpd3p, 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. Brownell, J.E., et al. 1996. *Tetrahymena* histone acetyltransferase A: a homolog to yeast Gcn5p linking histone acetylation to gene activation. Cell 84: 843-851.
5. Yang, X.J., et al. 1996. A p300/CBP-associated factor that competes with the adenoviral oncoprotein E1A. Nature 382: 319-324.
6. Taunton, J., et al. 1996. A mammalian histone deacetylase related to the yeast transcriptional regulator Rpd3p. Science 272: 408-411.
7. Yang, W.M., et al. 1996. Transcriptional repression by YY1 is mediated by interaction with a mammalian homolog of the yeast global regulator RPD3. Proc. Natl. Acad. Sci. USA 93: 12845-12850.
8. Bartl, S., et al. 1997. Identification of mouse histone deacetylase 1 as a growth factor-inducible gene. Mol. Cell. Biol. 17: 5033-5043.

CHROMOSOMAL LOCATION

Genetic locus: HDAC2 (human) mapping to 6q21; Hdac2 (mouse) mapping to 10 B1.

SOURCE

HDAC2 (HDAC2-62) is a mouse monoclonal antibody raised against amino acids 471-488 of HDAC2 of human origin.

PRODUCT

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

APPLICATIONS

HDAC2 (HDAC2-62) is recommended for detection of HDAC2 of mouse, rat, human, bovine and canine 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 HDAC2 siRNA (h): sc-29345, HDAC2 siRNA (m): sc-29346, HDAC2 siRNA (r): sc-270150, HDAC2 shRNA Plasmid (h): sc-29345-SH, HDAC2 shRNA Plasmid (m): sc-29346-SH, HDAC2 shRNA Plasmid (r): sc-270150-SH, HDAC2 shRNA (h) Lentiviral Particles: sc-29345-V, HDAC2 shRNA (m) Lentiviral Particles: sc-29346-V and HDAC2 shRNA (r) Lentiviral Particles: sc-270150-V.

Molecular Weight of HDAC2: 59 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, K-562 whole cell lysate: sc-2203 or Hep G2 cell lysate: sc-2227.

SELECT PRODUCT CITATIONS

1. Piskun, C.M. and Stein, T.J. 2013. β-Catenin transcriptional activity is minimal in canine osteosarcoma and its targeted inhibition results in minimal changes to cell line behaviour. Vet. Comp. Oncol. 14: e4-e16.
2. Valenzuela, R., et al. 2016. Mitochondrial Angiotensin receptors in dopaminergic neurons. Role in cell protection and aging-related vulnerability to neurodegeneration. Cell Death Dis. 7: e2427.
3. Villar-Cheda, B., et al. 2017. The intracellular Angiotensin system buffers deleterious effects of the extracellular paracrine system. Cell Death Dis. 8: e3044.
4. Costa-Besada, M.A., et al. 2018. Paracrine and intracrine Angiotensin 1-7/Mas receptor axis in the substantia nigra of rodents, monkeys, and humans. Mol. Neurobiol. 55: 5847-5867.

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.