SANTA CRUZ BIOTECHNOLOGY, INC.

HDAC1 (N-19): sc-6299

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (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.

CHROMOSOMAL LOCATION

Genetic locus: HDAC1 (human) mapping to 1p35.1; Hdac1 (mouse) mapping to 4 D2.2.

SOURCE

HDAC1 (N-19) is available as either goat (sc-6299) or rabbit (sc-6299-R) polyclonal affinity purified antibody raised against a peptide mapping at the N-terminus of HDAC1 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.

Blocking peptide available for competition studies, sc-6299 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for ChIP application, sc-6299 X, 200 µg/0.1 ml.

APPLICATIONS

HDAC1 (N-19) is recommended for detection of HDAC1 of broad species and *Xenopus leavis,* zeblafish 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). HDAC1 (N-19) is also recommended for detection of HDAC1 in additional species, including canine, bovine and avian.

Suitable for use as control antibody for HDAC1 siRNA (h): sc-29343, HDAC1 siRNA (m): sc-29344, HDAC1 shRNA Plasmid (h): sc-29343-SH, HDAC1 shRNA Plasmid (m): sc-29344-SH, HDAC1 shRNA (h) Lentiviral Particles: sc-29343-V and HDAC1 shRNA (m) Lentiviral Particles: sc-29344-V.

HDAC1 (N-19) X TransCruz antibody is recommended for ChIP assays.

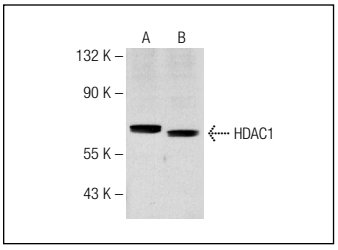
Molecular Weight of HDAC1: 60 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138, Hep G2 cell lysate: sc-2227 or KNRK nuclear extract: sc-2141.

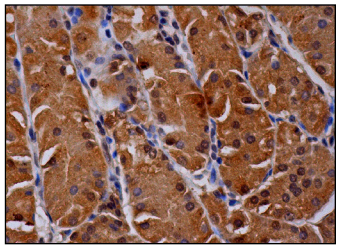
STORAGE

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

DATA



HDAC1 (N-19): sc-6299. Western blot analysis of HDAC1 expression in NIH/3T3 (**A**) and KNRK (**B**) nuclear extracts.



HDAC1 (N-19): sc-6299. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing nuclear and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Zhou, Q., et al. 2000. Rapid induction of histone hyperacetylation and cellular differeniation in human breast tumor cell lines following degradation of histone deacetylase-1. J. Biol. Chem. 275: 35256-35263.
2. Varshochi, R., et al. 2005. ICI182,780 induces $p21^{Waf1}$ gene transcription through releasing histone deacetylase 1 and estrogen receptor α from Sp1 sites to induce cell cycle arrest in MCF7 breast cancer cell line. J. Biol. Chem. 280: 3185-3196.
3. Reid, G., et al. 2005. Multiple mechanisms induce transcriptional silencing of a subset of genes, including oestrogen receptor α, in response to deacetylase inhibition by Valproic Acid and Trichostatin A. Oncogene 24: 4894-4907.
4. Stossi, F., et al. 2006. Estrogen-occupied estrogen receptor represses cyclin G_2 gene expression and recruits a repressor complex at the cyclin G_2 promoter. J. Biol. Chem. 281: 16272-16278.
5. Chang, D.F., et al. 2007. LIM-only protein, CRP2, switched on smooth muscle gene activity in adult cardiac myocytes. Proc. Natl. Acad. Sci. USA 104: 157-162.
6. Hurtado, A., et al. 2008. Regulation of ERBB2 by oestrogen receptor-Pax-2 determines response to Tamoxifen. Nature 456: 663-666.
7. Govindan, M.V. 2010. Recruitment of cAMP-response element-binding protein and histone deacetylase has opposite effects on glucocorticoid receptor gene transcription. J. Biol. Chem. 285: 4489-4510.
8. Nashine, S., et al. 2013. Ablation of C/EBP homologous protein does not protect T17M RHO mice from retinal degeneration. PLoS One 8: e63205.
9. Médale-Giamarchi, C., et al. 2013. RhoB modifies estrogen responses in breast cancer cells by influencing expression of the estrogen receptor. Breast Cancer Res. 15: R6.

RESEARCH USE

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