SANTA CRUZ BIOTECHNOLOGY, INC.

HDAC1 (10E2): sc-81598

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), HDAC2 (also designated mammalian RPD3) and HDAC3, all 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.

CHROMOSOMAL LOCATION

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

SOURCE

HDAC1 (10E2) is a mouse monoclonal antibody raised against amino acids 467-482 of HDAC1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-81598 X, 200 µg/0.1 ml.

HDAC1 (10E2) is available conjugated to agarose (sc-81598 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-81598 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81598 PE), fluorescein (sc-81598 FITC), Alexa Fluor® 488 (sc-81598 AF488), Alexa Fluor® 546 (sc-81598 AF546), Alexa Fluor® 594 (sc-81598 AF594) or Alexa Fluor® 647 (sc-81598 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-81598 AF680) or Alexa Fluor® 790 (sc-81598 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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.

APPLICATIONS

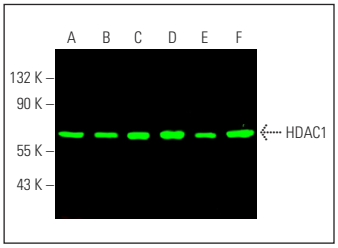
HDAC1 (10E2) is recommended for detection of HDAC1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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); non cross-reactive with other HDAC proteins.

Suitable for use as control antibody for HDAC1 siRNA (h): sc-29343, HDAC1 siRNA (m): sc-29344, HDAC1 siRNA (r): sc-270070, HDAC1 shRNA Plasmid (h): sc-29343-SH, HDAC1 shRNA Plasmid (m): sc-29344-SH, HDAC shRNA Plasmid (r): sc-270070-SH, shRNA (h) Lentiviral Particles: sc-29343-V, HDAC1 shRNA (m) Lentiviral Particles: sc-29344-V and HDAC1 shRNA (r) Lentiviral Particles: sc-270070-V.

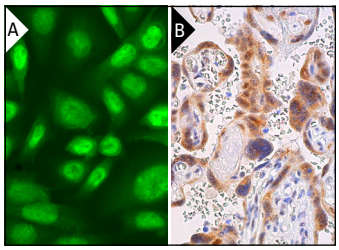
Molecular Weight of HDAC1: 60 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138, K-562 nuclear extract: sc-2130 or Jurkat nuclear extract: sc-2132.

DATA



HDAC1 (10E2) Alexa Fluor® 680: sc-81598 AF680. Direct near-infrared western blot analysis of HDAC1 expression in HeLa (**A**), NIH/3T3 (**B**), K-562 (**C**), Jurkat (**D**), KNRK (**E**) and C32 (**F**) nuclear extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214.



HDAC1 (10E2) Alexa Fluor® 488: sc-81598 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells, showing nuclear and cytoplasmic localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (**A**). HDAC1 (10E2): sc-81598. Immunoperoxidase detection of HDAC1 in formalin fixed, paraffin-embedded human placenta tissue, showing nuclear and cytoplasmic staining of trophoblastic cells. Detection reagent used: m-IgGκ BP-HRP: sc-516102 (**B**).

SELECT PRODUCT CITATIONS

1. Yi, J., et al. 2010. Reduced nuclear export of HuR mRNA by HuR is linked to the loss of HuR in replicative senescence. Nucleic Acids Res. 38: 1547-1558.
2. Khan, M., et al. 2023. Mechanism of antitumor effects of saffron in human prostate cancer cells. Nutrients 16: 114.
3. Torres, H.M., et al. 2024. Comprehensive analysis of the proximity-dependent nuclear interactome for the oncoprotein NOTCH1 in live cells. J. Biol. Chem. 300: 105522.

RESEARCH USE

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