SANTA CRUZ BIOTECHNOLOGY, INC.

HDAC3 (A-3): sc-376957

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 (p300/CBP-associated factor), p300/CBP and the TFIID subunit TAF II p250. Mammalian HDAC1 (also designated HD1), HDAC2 (also designated RPD3) and HDAC3, all of which are related to the yeast transcriptional factor 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: HDAC3 (human) mapping to 5q31.3; Hdac3 (mouse) mapping to 18 B3.

SOURCE

HDAC3 (A-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-29 at the N-terminus of HDAC3 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 ChIP application, sc-376957 X, 200 µg/0.1 ml.

HDAC3 (A-3) is available conjugated to agarose (sc-376957 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376957 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376957 PE), fluorescein (sc-376957 FITC), Alexa Fluor® 488 (sc-376957 AF488), Alexa Fluor® 546 (sc-376957 AF546), Alexa Fluor® 594 (sc-376957 AF594) or Alexa Fluor® 647 (sc-376957 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376957 AF680) or Alexa Fluor® 790 (sc-376957 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376957 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

HDAC3 (A-3) is recommended for detection of HDAC3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HDAC3 (A-3) is also recommended for detection of HDAC3 in additional species, including equine, canine, bovine, porcine and avian.

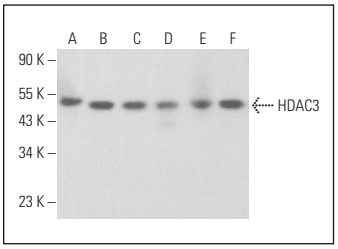
Suitable for use as control antibody for HDAC3 siRNA (h): sc-35538, HDAC3 siRNA (m): sc-35539, HDAC3 siRNA (r): sc-270161, HDAC3 shRNA Plasmid (h): sc-35538-SH, HDAC3 shRNA Plasmid (m): sc-35539-SH, HDAC3 shRNA Plasmid (r): sc-270161-SH, HDAC3 shRNA (h) Lentiviral Particles: sc-35538-V, HDAC3 shRNA (m) Lentiviral Particles: sc-35539-V and HDAC3 shRNA (r) Lentiviral Particles: sc-270161-V.

HDAC3 (A-3) X TransCruz antibody is recommended for ChIP assays.

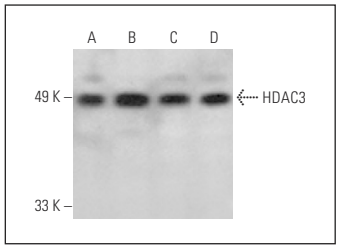
Molecular Weight of HDAC3: 49 kDa.

Positive Controls: AN3 CA cell lysate: sc-24662, K-562 whole cell lysate: sc-2203 or 3T3-L1 cell lysate: sc-2243.

DATA



HDAC3 (A-3): sc-376957. Western blot analysis of HDAC3 expression in Jurkat (**A**), AN3 CA (**B**), NIH/3T3 (**C**), C6 (**D**), 3T3-L1 (**E**) and RAT2 (**F**) whole cell lysates.



HDAC3 (A-3) HRP: sc-376957 HRP. Direct western blot analysis of HDAC3 expression in Jurkat nuclear extract (**A**) and MOLT-4 (**B**), NCI-H1299 (**C**) and K-562 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Sindlinger, J., et al. 2016. Probing the structure-activity relationship of endogenous histone deacetylase complexes with immobilized peptide-inhibitors. J. Pept. Sci. 22: 352-359.
2. Dai, J., et al. 2019. Acetylation blocks cGAS activity and inhibits self-DNA-induced autoimmunity. Cell 176: 1447-1460.e14.
3. Zicari, S., et al. 2020. DNA dependent protein kinase (DNA-PK) enhances HIV transcription by promoting RNA polymerase II activity and recruitment of transcription machinery at HIV LTR. Oncotarget 11: 699-726.
4. Lee, M., et al. 2021. Epigenetic regulation of p62/SQSTM1 overcomes the radioresistance of head and neck cancer cells via autophagy-dependent senescence induction. Cell Death Dis. 12: 250.

RESEARCH USE

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