SANTA CRUZ BIOTECHNOLOGY, INC.

HDAC2 (3F3): sc-81599

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

SOURCE

HDAC2 (3F3) is a mouse monoclonal antibody raised against amino acids 473-488 corresponding to the C-terminus of HDAC2 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.

HDAC2 (3F3) is available conjugated to agarose (sc-81599 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-81599 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81599 PE), fluorescein (sc-81599 FITC), Alexa Fluor® 488 (sc-81599 AF488), Alexa Fluor® 546 (sc-81599 AF546), Alexa Fluor® 594 (sc-81599 AF594) or Alexa Fluor® 647 (sc-81599 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-81599 AF680) or Alexa Fluor® 790 (sc-81599 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

HDAC2 (3F3) is recommended for detection of HDAC2 of mouse, rat, human and bovine 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with other HDAC proteins.

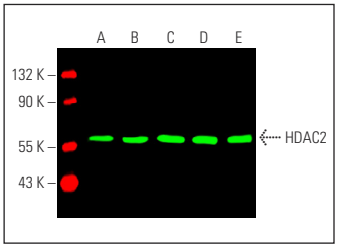
Suitable for use as control antibody for HDAC2 siRNA (h): sc-29345, HDAC2 siRNA (m): sc-29346, HDAC2 siRNA (r): sc-270150, shRNA Plasmid (h): sc-29345-SH, HDAC2 shRNA Plasmid (m): sc-29346-SH, HDAC2 shRNA Plasmid (r): sc-270150-SH, HDAC2 shRNA (h) Lentiviral Particles: sc-29345-V, HDAC2 shRNA (m) Lentiviral Particles: sc-29346-V, HDAC2 shRNA (r) Lentiviral Particles: sc-270150-V.

Molecular Weight of HDAC2: 59 kDa.

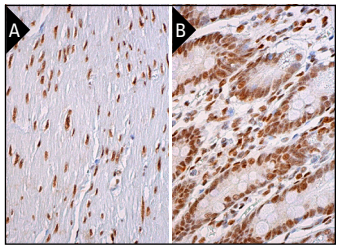
STORAGE

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

DATA



HDAC2 (3F3) Alexa Fluor® 680: sc-81599 AF680. Direct near-infrared western blot analysis of HDAC2 expression in Hep G2 (**A**), NIH/3T3 (**B**), Ramos (**C**), K-562 (**D**) and Jurkat (**E**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 790: sc-516731.



HDAC2 (3F3): sc-81599. Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing nuclear staining of smooth muscle cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Bantscheff, M., et al. 2011. Chemoproteomics profiling of HDAC inhibitors reveals selective targeting of HDAC complexes. Nat. Biotechnol. 29: 255-265.
2. Mao, Q.D., et al. 2017. MicroRNA-455 suppresses the oncogenic function of HDAC2 in human colorectal cancer. Braz. J. Med. Biol. Res. 50: e6103.
3. Snijders Blok, L., et al. 2018. *De novo* mutations in MED13, a component of the mediator complex, are associated with a novel neurodevelopmental disorder. Hum. Genet. 137: 375-388.
4. Ma, S., et al. 2019. Histone deacetylases inhibitor MS-275 suppresses human esophageal squamous cell carcinoma cell growth and progression via the PI3K/Akt/mTOR pathway. J. Cell. Physiol. 234: 22400-22410.
5. Miao, J., et al. 2020. NFκB p65-dependent transcriptional regulation of histone deacetylase 2 contributes to the chronic constriction injury-induced neuropathic pain via the microRNA-183/TXNIP/NLRP3 axis. J. Neuroinflammation 17: 225.
6. Salvi, A., et al. 2022. PHY34 inhibits autophagy through V-ATPase V0A2 subunit inhibition and CAS/CSE1L nuclear cargo trafficking in high grade serous ovarian cancer. Cell Death Dis. 13: 45.
7. Lee, J., et al. 2023. Nucleolin regulates pulmonary artery smooth muscle cell proliferation under hypoxia by modulating miRNA expression. Cells 12: 817.
8. Jung, D.H., et al. 2024. Therapeutic effects of a novel electrode for transcranial direct current stimulation in ischemic stroke mice. Theranostics 14: 1325-1343.

RESEARCH USE

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