SANTA CRUZ BIOTECHNOLOGY, INC.

HDAC5 (B-11): sc-133106

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, HAT1 and the TFIID subunit TAF II p250. Mammalian HDAC1 (also designated HD1), HDAC2 (also designated RPD3) and HDAC3–6, have been identified as histone deacetylases.

CHROMOSOMAL LOCATION

Genetic locus: HDAC5 (human) mapping to 17q21.31; Hdac5 (mouse) mapping to 11 D.

SOURCE

HDAC5 (B-11) is a mouse monoclonal antibody raised against amino acids 371-443 of HDAC5 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HDAC5 (B-11) is available conjugated to agarose (sc-133106 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-133106 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133106 PE), fluorescein (sc-133106 FITC), Alexa Fluor® 488 (sc-133106 AF488), Alexa Fluor® 546 (sc-133106 AF546), Alexa Fluor® 594 (sc-133106 AF594) or Alexa Fluor® 647 (sc-133106 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133106 AF680) or Alexa Fluor® 790 (sc-133106 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

HDAC5 (B-11) is recommended for detection of HDAC5 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), 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).

Suitable for use as control antibody for HDAC5 siRNA (h): sc-35542, HDAC5 siRNA (m): sc-35543, HDAC5 shRNA Plasmid (h): sc-35542-SH, HDAC5 shRNA Plasmid (m): sc-35543-SH, HDAC5 shRNA (h) Lentiviral Particles: sc-35542-V and HDAC5 shRNA (m) Lentiviral Particles: sc-35543-V.

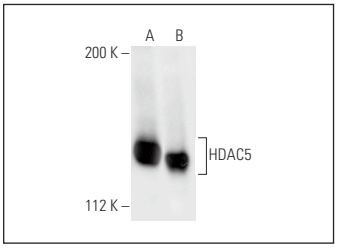
Molecular Weight of HDAC5: 140-150 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, Jurkat nuclear extract: sc-2132 or IMR-32 cell lysate: sc-2409.

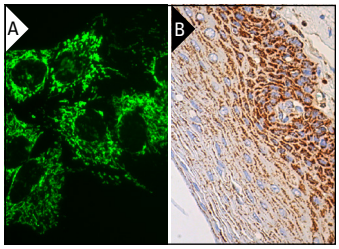
STORAGE

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

DATA



HDAC5 (B-11): sc-133106. Western blot analysis of HDAC5 expression in IMR-32 (**A**) and KNRK (**B**) whole cell lysates.



HDAC5 (B-11): sc-133106. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Zhang, Y., et al. 2011. Nuclear effects of G protein receptor kinase 5 on histone deacetylase 5-regulated gene transcription in heart failure. Circ. Heart Fail. 4: 659-668.
2. Qu, Y., et al. 2013. Expression level of histone deacetylase 2 correlates with occurring of chronic obstructive pulmonary diseases. Mol. Biol. Rep. 40: 3995-4000.
3. Whitehouse, A., et al. 2015. Histone deacetylases (HDACs) in fronto-temporal lobar degeneration. Neuropathol. Appl. Neurobiol. 41: 245-257.
4. Kabra, D.G., et al. 2016. Hypothalamic leptin action is mediated by histone deacetylase 5. Nat. Commun. 7: 10782.
5. Griffin, E.A., et al. 2017. Prior alcohol use enhances vulnerability to compulsive cocaine self-administration by promoting degradation of HDAC4 and HDAC5. Sci. Adv. 3: e1701682.
6. Wan, L., et al. 2018. Phosphorylation of EZH2 by AMPK suppresses PRC2 methyltransferase activity and oncogenic function. Mol. Cell 69: 279-291.e5.
7. McCann, J., et al. 2019. Class IIa HDACs do not influence β-cell function under normal or high glucose conditions. Islets 11: 112-118.
8. Schader, T., et al. 2020. Oxidation of HDAC4 by Nox4-derived H_2O_2 maintains tube formation by endothelial cells. Redox Biol. 36: 101669.
9. Truong, V., et al. 2021. Angiotensin II-induced histone deacetylase 5 phosphorylation, nuclear export, and Egr-1 expression are mediated by Akt pathway in A10 vascular smooth muscle cells. Am. J. Physiol. Heart Circ. Physiol. 320: H1543-H1554.

RESEARCH USE

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