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HDAC1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1101A

Product Information

Application	WB, IF, E
Primary Accession	Q13547
Other Accession	O09106
Reactivity	Human, Rat, Mouse
Predicted	Mouse, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB5642
Calculated MW	55103
Antigen Region	449-482

Additional Information

Gene ID	3065
Other Names	Histone deacetylase 1, HD1, HDAC1, RPD3L1
Target/Specificity	This HDAC1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 449-482 amino acids from the C-terminal region of human HDAC1.
Dilution	WB~~1:1000 IF~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	HDAC1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	HDAC1 {ECO:0000303|PubMed:10846170, ECO:0000312|HGNC:HGNC:4852}
Function	Histone deacetylase that catalyzes the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4) (PubMed:16762839, PubMed:17704056, PubMed:28497810). Histone

	deacetylation gives a tag for epigenetic repression and plays an important role in transcriptional regulation, cell cycle progression and developmental events (PubMed:16762839, PubMed:17704056). Histone deacetylases act via the formation of large multiprotein complexes (PubMed:16762839, PubMed:17704056). Acts as a component of the histone deacetylase NuRD complex which participates in the remodeling of chromatin (PubMed:16428440, PubMed:28977666). As part of the SIN3B complex is recruited downstream of the constitutively active genes transcriptional start sites through interaction with histones and mitigates histone acetylation and RNA polymerase II progression within transcribed regions contributing to the regulation of transcription (PubMed:21041482). Also functions as a deacetylase for non-histone targets, such as NR1D2, RELA, SP1, SP3, STAT3, ZNF76 and TSHZ3 (PubMed:12837748, PubMed:16285960, PubMed:16337145, PubMed:16478997, PubMed:17996965, PubMed:19343227). Deacetylates SP proteins, SP1 and SP3, and regulates their function (PubMed:12837748, PubMed:16478997). Component of the BRG1-RB1-HDAC1 complex, which negatively regulates the CREST-mediated transcription in resting neurons (PubMed:19081374). Upon calcium stimulation, HDAC1 is released from the complex and CREBBP is recruited, which facilitates transcriptional activation (PubMed:19081374). Deacetylates TSHZ3 and regulates its transcriptional repressor activity (PubMed:19343227). Deacetylates 'Lys-310' in RELA and thereby inhibits the transcriptional activity of NF-kappa-B (PubMed:17000776). Deacetylates NR1D2 and abrogates the effect of KAT5-mediated relieving of NR1D2 transcription repression activity (PubMed:17996965). Component of a RCOR/GFI/KDM1A/HDAC complex that suppresses, via histone deacetylase (HDAC) recruitment, a number of genes implicated in multilineage blood cell development (By similarity). Involved in CIART-mediated transcriptional repression of the circadian transcriptional activator: CLOCK-BMAL1 heterodimer (By similarity). Required for the transcriptional repression of circadian target genes, such as PER1, mediated by the large PER complex or CRY1 through histone deacetylation (By similarity). In addition to protein deacetylase activity, also has protein-lysine deacylase activity: acts as a protein decrotonylase and delactylase by mediating decrotonylation ((2E)-butenoyl) and delactylation (lactoyl) of histones, respectively (PubMed:28497810, PubMed:35044827).
Cellular Location	Nucleus
Tissue Location	Ubiquitous, with higher levels in heart, pancreas and testis, and lower levels in kidney and brain

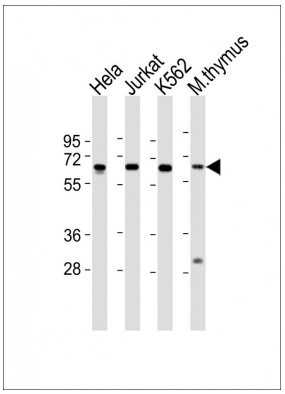
Background

Histone acetylation and deacetylation, catalyzed by multisubunit complexes, play a key role in the regulation of eukaryotic gene expression. HDAC1 belongs to the histone deacetylase/acuc/apha family and is a component of the histone deacetylase complex. It also interacts with retinoblastoma tumor-suppressor protein and this complex is a key element in the control of cell proliferation and differentiation. Together with metastasis-associated protein-2, it deacetylates p53 and modulates its effect on cell growth and apoptosis.

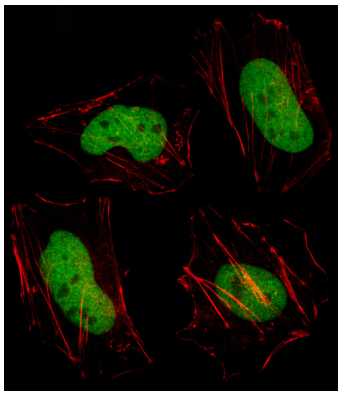
References

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Wang, S., et al., Oncogene 22(40):6204-6213 (2003).
Xia, Z.B., et al., Proc. Natl. Acad. Sci. U.S.A. 100(14):8342-8347 (2003).
Rocha, S., et al., Mol. Cell. Biol. 23(13):4713-4727 (2003).
Macaluso, M., et al., Oncogene 22(23):3511-3517 (2003).

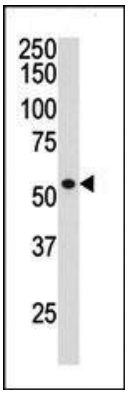
Images



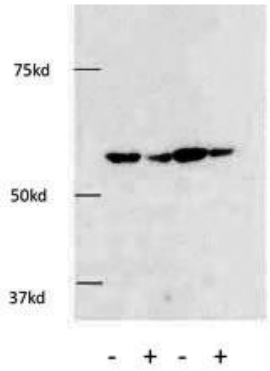
All lanes : Anti-HDAC1 Antibody (K464) at 1:2000 dilution Lane 1: Hela whole cell lysates Lane 2: Jurkat whole cell lysates Lane 3: K562 whole cell lysates Lane 4: mouse thymus lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution Predicted band size : 55 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Fluorescent image of Hela cell stained with HDAC1 Antibody (C-term)(Cat#AP1101a/SH040527D).Hela cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with HDAC1 primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C).HDAC1 immunoreactivity is localized to Nucleus significantly.



The anti-HDAC1 Pab (Cat. #AP1101a) is used in Western blot to detect HDAC1 in ZR-75-1 cell lysate.



The anti-HDAC1 Pab (Cat.#AP1101a) was used in Western Blot to detect HDAC1 in HEK293 cells. Knockdown of HDAC1 using siRNA against HDAC1 showed a significant decrease of HDAC1 protein using this anti-HDAC1 Pab in HEK293 cells.

Citations

- Acetylation of Beclin 1 inhibits autophagosome maturation and promotes tumour growth.

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