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HDAC3 Antibody

Rabbit mAb
Catalog # AP90598

Product Information

Application	WB, IHC, IF, ICC, IP, IHF
Primary Accession	O15379
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Other Names	HD3; Histone deacetylase 3; RPD3-2; SMAP45; HDAC3;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	48848

Additional Information

Dilution	WB 1:1000~1:2000 IHC 1:50~1:100 ICC/IF 1:50~1:200 IP 1:30
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human HDAC3
Description	HDAC3 is a nuclear and cytoplasmic protein that deacetylates both histone (H2A, H3, H4) and non-histone substrates (RelA, SRY, p53, MEF2, PCAF and p300/CBP). HDAC3 deacetylase activity is stimulated by interactions with the N-CoR and SMRT co-repressor proteins. Together, these three proteins form a functional complex that represses transcription associated with nuclear hormone receptors and other transcription factors, including Rev-Erb, COUP-TF, DAX1, MAD and Pit-1.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	HDAC3
Function	Histone deacetylase that catalyzes the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4), and some other non-histone substrates (PubMed:21030595, PubMed:21444723, PubMed:23911289, PubMed:25301942, PubMed:28167758, PubMed:28497810, PubMed:32404892, PubMed:22230954). Histone deacetylation gives a tag for epigenetic repression and plays an important role in transcriptional regulation, cell cycle progression and developmental events (PubMed:23911289). Histone deacetylases act via the formation of large multiprotein complexes, such as N-Cor repressor complex, which activate the histone deacetylase activity (PubMed:23911289, PubMed:22230954). Participates in the BCL6 transcriptional repressor activity by deacetylating the H3 'Lys-27' (H3K27) on enhancer elements, antagonizing

EP300 acetyltransferase activity and repressing proximal gene expression (PubMed:23911289). Acts as a molecular chaperone for shuttling phosphorylated NR2C1 to PML bodies for sumoylation (By similarity). Contributes, together with XBP1 isoform 1, to the activation of NFE2L2-mediated HMOX1 transcription factor gene expression in a PI(3)K/mTORC2/Akt-dependent signaling pathway leading to endothelial cell (EC) survival under disturbed flow/oxidative stress (PubMed:25190803). Regulates both the transcriptional activation and repression phases of the circadian clock in a deacetylase activity-independent manner (By similarity). During the activation phase, promotes the accumulation of ubiquitinated BMAL1 at the E-boxes and during the repression phase, blocks FBXL3-mediated CRY1/2 ubiquitination and promotes the interaction of CRY1 and BMAL1 (By similarity). The NCOR1-HDAC3 complex regulates the circadian expression of the core clock gene BMAL1 and the genes involved in lipid metabolism in the liver (By similarity). Also functions as a deacetylase for non-histone targets, such as KAT5, MEF2D, MAPK14, RARA and STAT3 (PubMed:15653507, PubMed:21030595, PubMed:21444723, PubMed:25301942, PubMed:28167758). Serves as a corepressor of RARA, mediating its deacetylation and repression, leading to inhibition of RARE DNA element binding (PubMed:28167758). In association with RARA, plays a role in the repression of microRNA-10a and thereby in the inflammatory response (PubMed:28167758). In addition to protein deacetylase activity, also acts as a protein-lysine deacylase by recognizing other acyl groups: catalyzes removal of (2E)-butenoyl (crotonyl), lactoyl (lactyl), 2-hydroxyisobutanoyl (2-hydroxyisobutyryl) and isonicotinyl acyl groups from lysine residues, leading to protein decrotonylation, delactylation, de-2- hydroxyisobutyrylation and deisonicotinylation, respectively (PubMed:28497810, PubMed:29192674, PubMed:34608293, PubMed:34545082, PubMed:35044827). Catalyzes decrotonylation of MAPRE1/EB1 (PubMed:34608293). Mediates delactylation NBN/NBS1, thereby inhibiting DNA double-strand breaks (DSBs) via homologous recombination (HR) (PubMed:38961290).

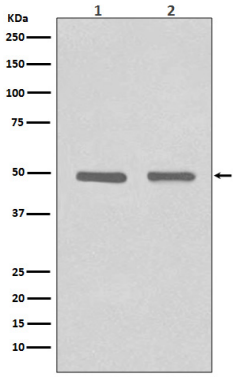
Cellular Location

Nucleus. Chromosome. Cytoplasm. Cytoplasm, cytosol. Note=Colocalizes with XBP1 and AKT1 in the cytoplasm (PubMed:25190803). Predominantly expressed in the nucleus in the presence of CCAR2 (PubMed:21030595)

Tissue Location

Widely expressed..

Images



Western blot analysis of HDAC3 expression in (1) HeLa cell lysate; (2) NIH/3T3 cell lysate.

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