HDAC1 antibody (pAb)

Catalog No: 40967
RRID: AB_2614948
Application(s): ChIP, ChIP-Seq, WB
Reactivity: Human, Mouse, Rat

Quantity: 100 µg
Purification: Affinity Purified
Host: Rabbit
Isotype: IgG
Concentration: 1.0 µg/µl
Molecular Weight: 60 kDa

Background: HDAC1 (Histone Deacetylase 1, also designated HD1) is a member of the class I mammalian histone deacetylases (HDACs) involved in regulating chromatin structure during transcription. These enzymes catalyze the removal of acetyl groups from lysine residues of histones and other cellular proteins. Lysine N-ε-acetylation is a dynamic, reversible and tightly regulated protein and histone modification that plays a major role in regulation of gene expression in various cellular functions. It consists of the transfer of an acetyl moiety from an acetyl coenzyme A to the ε-amino group of a lysine residue.

In vivo, acetylation is controlled by the antagonistic activities of histone acetyltransferases (HATs) and histone deacetylases (HDACs). The HDACs are grouped into four classes, on the basis of similarity to yeast counterparts: class I (HDAC1, HDAC2, HDAC3 and HDAC8), class II (HDAC4, HDAC5, HDAC6, HDAC7, 9 and 10), class III (SIRT1-7) and class IV (HDAC11).

HDAC1 and HDAC2 are recruited to Mad-Max complexes, which associate with the mSin3 scaffold protein, and are required for the transcriptional repression of Mad-Max target genes. HDAC1 is also involved in the regulation of p53. HDAC1 is expressed in various tissues. HDAC1, HDAC2 and HDAC3 are also ubiquitously expressed and can deacetylate both H3 and H4 in free histones or nucleosome substrate.

Immunogen: This HDAC1 antibody was raised against a mixture of synthetic peptides corresponding to amino acid residues 1-5, 433-448 and 467-482 of human HDAC1.

Buffer: PBS containing 0.02% sodium azide. Sodium azide is highly toxic.

Application Notes:

Validated Applications:
ChIP: 4 µg per ChIP
ChIP-Seq: 4 µg each
WB: 1 - 2 µg/ml dilution

For optimal results in Western blotting, primary antibody incubations should be performed at room temperature. The addition of 0.1% Tween 20 to all Blotto solutions may also reduce background. Individual optimization may be required.

Storage and Guarantee: Some products may be shipped at room temperature. This will not affect their stability or performance. Store at 4°C for short term. Avoid repeated freeze/thaw cycles by aliquoting items into single-use fractions for storage at -20°C for up to 2 years. Keep all reagents on ice when not in storage. This product is guaranteed for 6 months from date of receipt.

This product is for research use only and is not for use in diagnostic procedures.

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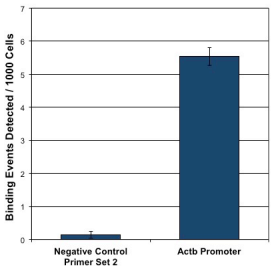
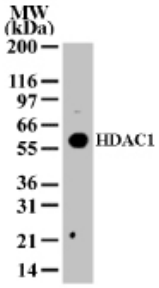
HDAC1 pAb tested by ChIP-Chip.
ChIP was performed using the ChIP-IT® High Sensitivity Kit (Cat. No. 53040) with 30 ug of mouse hippocampus chromatin and 4 ug of HDAC1 antibody. ChIP DNA was amplified by WGA, labeled and hybridized to a mouse tiling array. The left side of the image shows HDAC1 binding at multiple promoters. The right side of the image shows HDAC1 binding spread broadly across the Tcf4 gene.



HDAC1 pAb tested by ChIP-qPCR.

Chromatin immunoprecipitation (ChIP) was performed using the ChIP-IT® High Sensitivity Kit (Cat. No. 53040) with 20 µg of rat brain chromatin and 4 µg of HDAC1 antibody. ChIP DNA was used in qPCR with the negative control primer pairs and primers that amplify the Actb promoter. Data are presented as Binding Events Detected per 1000 Cells using Active Motif's Epigenetic Services normalization scheme which accounts for primer efficiency and the amount of chromatin used in the ChIP reaction.



HDAC1 pAb tested by Western blot.
Detection of HDAC1 by Western blot analysis. 293 nuclear extract was probed with HDAC1 pAb. A protein band of approximate molecular weight of 60 kDa was detected.