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ProductInformation

Anti-Histone Deacetylase 11 (HDAC11)
produced in rabbit, affinity isolated antibody

Catalog Number **H4539**

Product Description

Anti-Histone Deacetylase 11 (HDAC11) is developed in rabbit using a synthetic peptide corresponding to amino acid residues 2-16 of human HDAC11 with an N-terminal added cysteine, conjugated to KLH, as immunogen. The corresponding sequence differs by three amino acids in both rat and mouse HDAC11. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Histone Deacetylase 11 (HDAC11) recognizes human and mouse HDAC11 by immunoblotting (~39 kDa). Detection of the HDAC11 band by immunoblotting is specifically inhibited with the immunizing peptide.

The basic repeating unit of chromatin is the nucleosome, which is composed of a protein octamer containing two each of the core histones H2A, H2B, H3 and H4, surrounded by ~146 base pairs of DNA. Reversible acetylation of highly conserved lysine residues in the N-terminal tail domains of core histones plays an important role in transcriptional regulation, cell cycle progression and development events. Several histone acetyltransferases (HATs) catalyze this acetylation reaction (e.g. GCN5, PCAF, p300/CBP, TAFII250, P/CAF, SRC-1, BRCA-2). Acetylation of the core histones is generally considered to be associated with gene activation, probably through maintenance of the unfolded structure of transcribing nucleosomes.[1, 2] Histone acetylation is a dynamic process whose levels are determined by the net activities of HATs and the competing enzymes histone deacetylases (HDACs).[3] Both activities are associated with the nuclear matrix. Eleven different mammalian HDACs have been described to date. HDAC1-3 and 8 (Class I) are similar to yeast Rpd3 protein, while HDAC4-7, 9 and 10 (Class II) are similar to yeast Hda1 protein.[4, 5, 13] Histone deacetylase activities are often, but not always associated with transcriptional repression and nucleosome condensation.[6, 7] HDAC1, HDAC2, and several others are the catalytic subunits of different multiprotein regulatory may include corepressors such as mSin3, N-CoR, SMRT, and associated proteins such as SAP18, SAP30, RbAp46, RbAp48, and c-Ski oncogenic protein, a protein involved in DNA methylation. Nucleosome remodeling and deacetylation (NRD) complexes containing HDAC1, HDAC2, Mi-2 (CH3, CH4) dermatomyositis specific autoantigen and MAT2 (metastasis-associated protein) protein were recently described. It is therefore assumed that ATP-dependent nucleosome remodeling activity and histone deacetylation may be interconnected or interdependent.[9, 10] Recruitment of the multiprotein complexes to promoter sites occurs by many sequence specific DNA-binding proteins such as unliganded nuclear hormone receptors, DP1-E2F, YY1 and Rb family of transcription factors, transcriptional repressors and tumor suppressors (e.g. BRCA1). Aberrant recruitment of HDACs by certain oncoproteins may occur in certain neoplastic diseases.[11] HDAC11 is a new member of the HDAC family. The protein does not belong to HDAC class I or II but is related to a common ancestral gene(s) from which the eukaryotic HDACs evolved.[12] HDAC11 has a molecular weight of 39 kDa and is mainly expressed in brain, heart, skeletal muscle, kidney, testis, and cancer cells. The protein consists of one catalytic domain and is found in a complex with HDAC6.[12]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 4-6 µg/mL is recommended using nuclear extracts of HeLa cells and a chemiluminescent detection reagent.

Immunoblotting: a working concentration of 0.5-1 µg/mL is recommended using extracts of mouse brain and a chemiluminescent detection reagent.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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