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ProductInformation

Monoclonal Anti-Histone Deacetylase 3 (HDAC3)
Clone HDAC3-83
Purified Mouse Immunoglobulin

Product Number **H 6537**

Product Description

Monoclonal Anti-Histone Deacetylase 3 (HDAC3) (mouse IgM isotype) is derived from the HDAC3-83 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to amino acids 411-428 of human and mouse HDAC3. The isotype is determined using Sigma ImmunoType™ Kit (Sigma ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Sigma ISO-2).

Monoclonal Anti-Histone Deacetylase 3 (HDAC3) recognizes human and mouse HDAC3 (approx. 50 kDa). The epitope recognized by the antibody resides within amino acids 411-428 of human HDAC3. The product is useful in ELISA and immunoblotting..

Chromatin is composed of basic repeating units called nucleosomes, which are 146 bp of DNA wound around a histone octamer composed of two each of the core histones H2A, H2B, H3 and H4. Reversible acetylation of highly conserved lysine residues in N-terminal tail domains of core histones plays an important role in transcriptional regulation, cell cycle progression and developmental events. Several histone acetyltransferases (HATs) catalyze the acetylation reaction (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. Six or seven different mammalian HDACs have been described. HDACs 1-3 are similar to the yeast Rpd3 protein, while HDACs 4-6 are similar to the yeast Hda1 protein.[4, 5]

Histone deacetylase activities are often, but not always, associated with transcriptional repression and nucleosomal condensations.[6, 7] HDAC1 and 2 are the catalytic subunits of different multiprotein regulatory complexes.[8] The components of such complexes include: corepressors such as mSin3, N-CoR, SMRT, associated proteins such as SAP18, SAP30, RbAp46, RbAp48, c-Ski oncogenic protein, a protein involved in DNA methylation and more. Nucleosome remodeling (NRD) and deacetylation complexes containing HDAC1, HDAC2, Mi-2 (CH3,CH4) dermatomyositis specific autoantigen, and MTA2 protein that is related to metastasis-associated protein 1, have been described indicating 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]

Monoclonal antibodies specific for HDAC3 are an important tool for the study of the involvement of HDACs in transcription regulation in eukaryotic cells.

Reagent

Monoclonal Anti-Histone Deacetylase 3 (HDAC3) is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin (BSA) and 15 mM sodium azide.

Antibody concentration: Approx. 1 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 hazards 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 at –20 °C. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also 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
By immunoblotting, a minimum working concentration of approximately 1 µg/ml is recommended using total cell extracts of NIH3T3 cells.

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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