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Product Information

Anti-Histone Deacetylase 4 (HDAC4) antibody
Mouse monoclonal, clone HDAC4-144
purified from hybridoma cell culture

Product Number **H0163**

Product Description

Monoclonal Anti-Histone Deacetylase 4 (HDAC4) (mouse IgG2a isotype) is derived from the HDAC4-144 hybridoma produced by the fusion of mouse myeloma cells (NS1) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a fragment of human HDAC4 with C-terminal added lysine, conjugated to KLH. The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2.

Monoclonal Anti-Histone Deacetylase 4 (HDAC4) recognizes human, rat, and mouse HDAC4 (~140 kDa). The antibody can be used in ELISA, immunoblotting, immunocytochemistry, and immunoprecipitation.

Regulation of gene expression is mediated by several mechanisms, among them are DNA methylation, ATP-dependent chromatin remodeling, and post-translational modifications of histones. These modifications include the dynamic acetylation and deacetylation of ε-amino groups of lysine residues present in the tail of core histones.[1] The enzymes responsible for this reversible acetylation/deacetylation process are histone acetyltransferases (HATs) and histone deacetylases (HDACs), respectively.[2] While HATs act as transcriptional coactivators, HDACs are part of transcriptional corepressor complexes.[3]

Mammalian HDACs can be divided into three classes according to sequence homology.[4] Class I consists of the yeast Rpd3-like proteins HDAC1, HDAC2, HDAC3, and HDAC8. Class II consists of the yeast Hda1-like proteins HDAC4, HDAC5, HDAC6, HDAC7, HDAC9, and HDAC10.[5] Class III comprises the yeast Sir2-like proteins. Whereas class I HDACs are ubiquitously expressed, most class II HDACs are tissue-specific.[2] The deacetylase activity of class II HDACs is regulated by subcellular localization.[4]

It has been found that HDAC4 possesses intrinsic nuclear import and export signals for its dynamic nucleocytoplasmic shuttling. Its association with 14-3-3 and MEF2 proteins affects such shuttling and thus directs HDAC4 to the cytoplasm and the nucleus, respectively.[6]

Reagent

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

Antibody concentration: ~2 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet 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, 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 1–2 μg/mL is recommended using total cell extracts of NIH3T3 fibroblast cells.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

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5. Fischle, W. et al., J. Biol. Chem., **274**, 11713-11720 (1999).
6. Wang, A.H., and Yang, X.J., Mol. Cell. Biol., **19**, 5992-6005 (2001).

VS,DS,EK,KAA,PHC,MAM 08/19-1