

Product Information

Anti-Histone Deacetylase 5 (HDAC5) antibody,

Mouse monoclonal, clone HDAC5-35
purified from hybridoma cell culture

Product Number **H4538**

Product Description

Monoclonal Anti-Histone Deacetylase 5 (HDAC5) (mouse IgG1 isotype) is derived from the HDAC5-35 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 HDAC5 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 5 (HDAC5) recognizes human, rat, and mouse HDAC5 (~124 kDa). The antibody may be used in various immunochemical techniques including 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 acetyl-transferases (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

HDAC5 activity is important for the differentiation of muscle cells by binding, through its N-terminal domain, to the MEF2 protein, thus repressing expression of MEF2 down stream genes.⁶ Overexpression of HDAC5 in different cancer cells suppresses their growth by induction of apoptosis in a p53-independent manner.⁷

Monoclonal antibodies specific to HDAC5 are an important tool for studying cancer growth and gene expression in mammalian cells.

Reagent

Monoclonal Anti-Histone Deacetylase 5 (HDAC5) is 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. 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 dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody concentration of 2–4 μ g/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

1. Wang, A.H. et al., Mol. Cell. Biol., **19**, 7816-7827 (1999).
2. Grozinger, C.M. et al., Proc. Natl. Acad. Sci. USA, **96**, 4868-4873 (1999).
3. Fischle, W. et al., Biochem. Cell Biol., **79**, 337-348 (2001).
4. Khochbin, S. et al., Curr. Opin. Genet. Dev., **11**, 162-166 (2001).
5. Fischle, W. et al., J. Biol. Chem., **274**, 11713-11720 (1999).
6. Mckinesy, T.A. et al., Nature, **408**, 106-111 (2000).
7. Huang, Y. et al., Cancer Res., **62**, 2913-2922 (2002).

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