

Product Information

Anti-Histone Deacetylase 7 (HDAC7) antibody

Mouse monoclonal, clone HDAC7-97
purified from hybridoma cell culture

Product Number **H6663**

Product Description

Monoclonal Anti-Histone Deacetylase 7 (HDAC7) (mouse IgG1 isotype) is derived from the hybridoma HDAC7-97 produced by the fusion of mouse myeloma cells (NS1 cells) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a fragment of mouse HDAC7, 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 7 recognizes human and mouse HDAC7 (~105 kDa). The antibody may be used in ELISA, immunoblotting, immunoprecipitation, and immunocytochemistry.

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 Class II HDACs have been implicated in the regulation of muscle differentiation.⁶ Interaction of HDAC4, -5, and -7 with members of the MEF2 family of transcription factors represses their transcriptional activity and prevents myogenesis.⁷ The deacetylase activity of class II HDACs is regulated by subcellular localization.⁴

Although HDAC7 is localized mainly to the cell nucleus, it is also found in the cytoplasm.⁶ Shuttling of HDAC7 between the cell nucleus and the cytoplasm is controlled by a mechanism involving calmodulin-dependent kinase I (CaMKI) and 14-3-3 proteins.⁸ The HDAC7 enzymatic activity depends on its interaction with the class I HDAC3, and the corepressors SMRT and N-CoR.⁶ HDAC7 also interacts with the transcriptional repressor BCL-6.⁹

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. 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 antibody concentration of 0.25-0.5 $\mu\text{g}/\text{mL}$ is recommended using recombinant protein from embryonal kidney 293T cells overexpressing human HDAC7.

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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