

## Product Information

### Anti-Histone Deacetylase 7 (YS-19)

Developed in Rabbit  
Affinity Isolated Antibody

Product Number **H 2537**

#### Product Description

Anti-Histone Deacetylase 7 (YS-19) is developed in rabbit using a synthetic peptide corresponding to amino acid residues 137-155 of mouse Histone Deacetylase 7 (HDAC7) with N-terminal added lysine, conjugated to KLH as immunogen. The corresponding sequence is identical in rat and differs by three amino acids in human. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Histone Deacetylase 7 (HDAC7) (YS-19), recognizes human, mouse and rat HDAC7. Applications include immunoblotting (approximately 105 kDa) and immunoprecipitation. Additional weak bands may be detected by immunoblotting in various extract preparations. Detection of HDAC7 by immunoblotting is specifically inhibited with the immunizing peptide.

Regulation of gene expression is mediated by several mechanisms. Among them are DNA methylation, ATP-dependent chromatin remodeling, and posttranslational modifications of histones, such as the dynamic acetylation and deacetylation of  $\epsilon$ -amino groups of lysine residues present in the tail of core histones.<sup>1</sup> The enzymes responsible for this reversible acetylation/deacetylation process are histone acetyltransferases (HATs) and histone deacetylases (HDACs), respectively.<sup>2</sup> HATs act as transcriptional coactivators and HDACs are part of transcriptional corepressor complexes.<sup>3</sup>

Mammalian HDACs can be divided into three classes according to sequence homology.<sup>4</sup> 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.<sup>5</sup> Class III consists of the yeast Sir2-like proteins. Most class II HDACs are tissue-specific and class I HDACs are ubiquitously expressed.<sup>2</sup>

Class II HDACs have been implicated in the regulation of muscle differentiation.<sup>6</sup> Interaction of HDAC4, -5, and -7 with members of the MEF2 family of transcription factors represses their transcriptional activity and prevents myogenesis.<sup>7</sup> The deacetylase activity of class II HDACs is regulated by subcellular localization.<sup>4</sup> Although HDAC7 is localized mostly to the cell nucleus, it is also found in the cytoplasm.<sup>6</sup> 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.<sup>8</sup> The HDAC7 enzymatic activity depends on its interaction with the class I HDAC3, and the corepressors SMRT and N-CoR.<sup>6</sup> HDAC7 also interacts with the transcriptional repressor BCL-6.<sup>9</sup>

#### Reagent

Anti-Histone Deacetylase 7 (HDAC7) (YS-19) is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide.

Antibody Concentration: 1.0-1.5 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 prolonged 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

For immunoblotting, a minimum working antibody dilution of 1:2,000 is recommended using whole extracts of mouse NIH-3T3 cells.

For immunoblotting, a minimum working antibody dilution of 1:500 is recommended using whole extracts of rat PC12 cells.

For immunoprecipitation, 1.5-1.8 µg of the antibody immunoprecipitates HDAC7 from a RIPA extract (180 µg) of 293T human embryonic kidney cells expressing recombinant human HDAC7.

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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