3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Anti-Histone Deacetylase 10 (HDAC10)
Developed in Rabbit
Affinity Isolated Antibody

Product Number **H 3413**

Product Description

Anti-Histone Deacetylase 10 (HDAC10) is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acid residues 2-16 of human HDAC10 with C-terminal added cysteine, conjugated to KLH. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Histone Deacetylase 10 (HDAC10) recognizes native and denatured human, mouse, and rat HDAC10. Applications include immunoblotting (~72 kDa) and immunofluorescence. Additional weak bands may be detected in some extract preparations. Detection of HDAC10 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 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] HATs act as transcriptional coactivators and 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 HDAC10, 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] HDAC10 is highly expressed in liver, kidney, pancreas, and spleen.[6] HDAC10 is similar to HDAC6, both containing a unique putative second catalytic domain not found in other HDACs. However, this domain is not functional in HDAC10.[7] The deacetylase activity of class II HDACs is regulated by subcellular localization.[4] HDAC10 was localized to both the nucleus and cytoplasm.[7, 8, 9] HDAC10 can deacetylate histones, repress transcription, and interact with HDAC3.[6]

Reagent

Anti-Histone Deacetylase 10 (HDAC10) 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: 0.5-1.0 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. 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 working antibody concentration of 0.5-1.0 µg/ml is recommended using whole extracts of mouse NIH-3T3 and rat NRK cells and a chemiluminescent detection reagent.

By indirect immunofluorescence, a working antibody concentration of 10-20 µg/ml is recommended using human HeLa cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the 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. Tong, J.J., et al., Nucl. Acids Res., 30, 1114-1123 (2002).
7. Guardiola, A.R., et al., J. Biol. Chem., **277**, 3350-3356 (2002).
8. Kao, H.Y., et al., J. Biol. Chem., **277**,187-193 (2002).
9. Fischer, D.D., et al., J. Biol. Chem., **277**, 6656-6666 (2002).