Revision 3

#5113 Store at -20C

HDAC2 (3F3) Mouse mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC	H M R Mk	Endogenous	60	Mouse IgG1 kappa	#Q92769	3066

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (Immunocytochemistry)	1:400

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

HDAC2 (3F3) Mouse mAb detects endogenous levels of HDAC2 protein. The antibody does not cross-react with other HDAC proteins.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the carboxy terminus of human HDAC2.

Background

Acetylation of the histone tail causes chromatin to adopt an "open" conformation, allowing increased accessibility of transcription factors to DNA. The identification of histone acetyltransferases (HATs) and their large multiprotein complexes has yielded important insights into how these enzymes regulate transcription (1,2). HAT complexes interact with sequence-specific activator proteins to target specific genes. In addition to histones, HATs can acetylate nonhistone proteins, suggesting multiple roles for these enzymes (3). In contrast, histone deacetylation promotes a "closed" chromatin conformation and typically leads to repression of gene activity (4). Mammalian histone deacetylases can be divided into three classes on the basis of their similarity to various yeast deacetylases (5). Class I proteins (HDACs 1, 2, 3, and 8) are related to the yeast Rpd3-like proteins, those in class II (HDACs 4, 5, 6, 7, 9, and 10) are related to yeast Hda1-like proteins, and class III proteins are related to the yeast protein Sir2. Inhibitors of HDAC activity are now being explored as potential therapeutic cancer agents (6,7).
HDAC1 and HDAC2 are highly homologous and are involved in histone deacetylation, chromatin remodeling and transcriptional repression (8-10). Both proteins are found together in numerous complexes including the nucleosome remodeling and deacetylation complex (NuRD), MeCP1, and the mSin3A corepressor complex.

Background References

1. Marmorstein, R. (2001) *Cell Mol Life Sci* 58, 693-703.
2. Gregory, P.D. et al. (2001) *Exp Cell Res* 265, 195-202.
3. Liu, Y. et al. (2000) *Mol Cell Biol* 20, 5540-53.
4. Cress, W.D. and Seto, E. (2000) *J Cell Physiol* 184, 1-16.
5. Gray, S.G. and Ekström, T.J. (2001) *Exp Cell Res* 262, 75-83.
6. Thiagalingam, S. et al. (2003) *Ann. N.Y. Acad. Sci.* 983, 84-100.
7. Vigushin, D.M. and Coombes, R.C. (2004) *Curr Cancer Drug Targets* 4, 205-18.
8. Zhang, Y. et al. (1999) *Genes Dev* 13, 1924-35.
9. Ng, H.H. et al. (1999) *Nat Genet* 23, 58-61.
10. Zhang, Y. et al. (1997) *Cell* 89, 357-64.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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