

#3815 Store at -20°C

Phospho-HDAC3 (Ser424) Antibody



Orders ■ 877-616-CELL (2355)
 orders@cellsignal.com
Support ■ 877-678-TECH (8324)
 info@cellsignal.com
Web ■ www.cellsignal.com

rev. 01/22/10

This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP, IHC-P, IF-IC Endogenous	H, M, R, (Mk, C, X, Hr)	49 kDa	Rabbit**

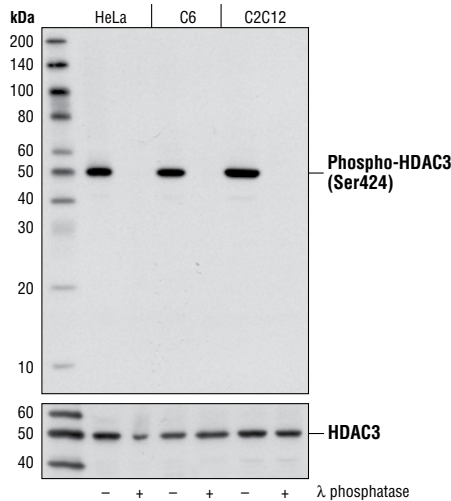
Background: Acetylation of the histone tail causes chromatin to adopt an "open" conformation, allowing increased accessibility of transcription factors to DNA. The identification of histone acetyltransferases (HATs) and their large multiprotein complexes has yielded important insights into how these enzymes regulate transcription (1,2). HAT complexes interact with sequence-specific activator proteins to target specific genes. In addition to histones, HATs can acetylate non-histone 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 (HDACs 1, 2, 3 and 8) proteins 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).

HDAC3 is a nuclear and cytoplasmic protein that deacetylates both histone (H2A, H3, H4) and non-histone substrates (RelA, SRY, p53, MEF2, PCAF and p300/CBP) (8). HDAC3 deacetylase activity is stimulated by interactions with the N-CoR and SMRT co-repressor proteins. Together, these three proteins form a functional complex that represses transcription associated with nuclear hormone receptors and other transcription factors, including Rev-Erb, COUP-TF, DAX1, MAD and Pit-1 (8,9). Phosphorylation of HDAC3 on Ser424 by casein kinase 2 (CK2) also increases HDAC3 deacetylase activity (9). Subsequently, de-phosphorylation by protein phosphatase 4 (PP4) decreases HDAC3 activity (9).

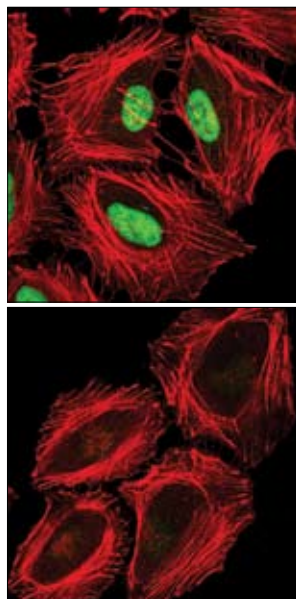
Specificity/Sensitivity: Phospho-HDAC3 (Ser424) Antibody detects endogenous levels of HDAC3 protein only when phosphorylated on Ser424. The antibody does not cross-react with other HDAC proteins.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide (KLH-coupled) corresponding to Ser424 of human HDAC3 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Confocal immunofluorescent analysis of HeLa cells, untreated (left) or λ -phosphatase-treated (right), using Phospho-HDAC3 (Ser424) Antibody (green). Actin filaments were labeled using DY-554 phalloidin (red).



Western blot analysis of extracts from HeLa, C6 and C2C12 cells, untreated or λ -phosphatase-treated, using Phospho-HDAC3 (Ser424) Antibody (upper) or HDAC3 Antibody #2632 (lower).



Entrez-Gene ID #8841
Swiss-Prot Acc. #015379

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μ g/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western Blotting	1:1000
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:200
Unmasking buffer:	Citrate
Antibody diluent:	SignalStain® Antibody Diluent #8112
Immunofluorescence (IF-IC)	1:200

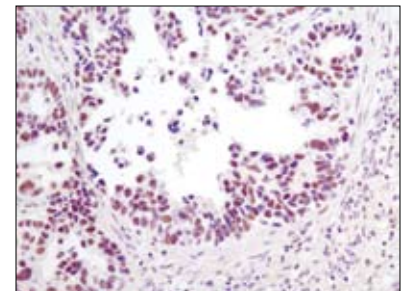
For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

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, 205–218.
- (8) Karagianni, P. and Wong, J. (2007) *Oncogene* 26, 5439–5449.
- (9) Zhang, X. et al. (2005) *Genes Dev.* 19, 827–839.

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



Immunohistochemical analysis of paraffin-embedded human lung carcinoma using Phospho-HDAC3 (S424) Antibody.

Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.