Revision 7

Store at -20C

#9441

Acetylated-Lysine Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	Source/Isotype:
W, IP, IHC-P, IF-IC, ChIP, E-P	All	Endogenous	Rabbit

Product Usage Information

For optimal ChIP results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10^6 cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Immunohistochemistry (Paraffin)	1:300 - 1:1200
Immunofluorescence (Immunocytochemistry)	1:100 - 1:400
Chromatin IP	1:25
Peptide ELISA (DELFIA)	1:2000

Storage

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

Specificity/Sensitivity

Acetylated-Lysine Antibody detects proteins posttranslationally modified by acetylation on the epsilon-amine groups of lysine residues. The antibody recognizes acetylated lysine in a wide range of sequence contexts. It has been demonstrated to recognize acetylated histones, p53, CBP, PCAF and chemically acetylated BSA. The antibody has been shown to react with as little as 0.04 ng of chemically acetylated BSA while not recognizing up to 25 µg of nonacetylated BSA.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic acetylated lysine-containing peptide. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Acetylation of lysine, like phosphorylation of serine, threonine or tyrosine, is an important reversible modification controlling protein activity. The conserved amino-terminal domains of the four core histones (H2A, H2B, H3, and H4) contain lysines that are acetylated by histone acetyltransferases (HATs) and deacetylated by histone deacetylases (HDACs) (1). Signaling resulting in acetylation/deacetylation of histones, transcription factors, and other proteins affects a diverse array of cellular processes including chromatin structure and gene activity, cell growth, differentiation, and apoptosis (2-6). Recent proteomic surveys suggest that acetylation of lysine residues may be a widespread and important form of post-translational protein modification that affects thousands of proteins involved in control of cell cycle and metabolism, longevity, actin polymerization, and nuclear transport (7,8). The regulation of protein acetylation status is impaired in cancer and polyglutamine diseases (9), and HDACs have become promising targets for anti-cancer drugs currently in development (10).

Background References

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3. Liu, L. et al. (1999) *Mol Cell Biol* 19, 1202-9.
4. Boyes, J. et al. (1998) *Nature* 396, 594-8.
5. Polevoda, B. and Sherman, F. (2002) *Genome Biol* 3, reviews 0006.
6. Yoshida, M. et al. (2003) *Prog Cell Cycle Res* 5, 269-78.
7. Kim, S.C. et al. (2006) *Mol Cell* 23, 607-18.
8. Choudhary, C. et al. (2009) *Science* 325, 834-40.
9. Hughes, R.E. (2002) *Curr Biol* 12, R141-3.
10. Vigushin, D.M. and Coombes, R.C. (2004) *Curr Cancer Drug Targets* 4, 205-18.

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin) **IF-IC:** Immunofluorescence (Immunocytochemistry) **ChIP:** Chromatin IP **E-P:** Peptide ELISA (DELFIA)

Cross-Reactivity Key

All: All Species Expected

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