Revision 1

#96139 Store at +4C

Acetyl-Histone H2AZ (Lys4/Lys7) (D3V1I) Rabbit mAb (Alexa Fluor® 488 Conjugate)

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
FC-FP	H M R	Endogenous	Rabbit IgG	#P0C0S5	3015

Product Usage Information

Application	Dilution
Flow Cytometry (Fixed/Permeabilized)	1:50

Storage

Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.

Specificity/Sensitivity

Acetyl-Histone H2AZ (Lys4/Lys7) Rabbit mAb (Alexa Fluor® 488 Conjugate) recognizes endogenous levels of histone H2AZ protein only when acetylated at Lys4 and/or Lys7. This antibody does not cross-react with other acetylated histones, including histone H2A acetylated at Lys5. This antibody also detects a band around 22 kDa, which is most likely monoubiquitylated histone H2AZ that is acetylated on Lys4 and Lys7.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding acetylated Lys4 and Lys7 of human H2AZ protein.

Description

This Cell Signaling Technology antibody is conjugated to Alexa Fluor® 488 fluorescent dye and tested in-house for direct flow cytometric analysis in human cells. This antibody is expected to exhibit the same species cross-reactivity as the unconjugated Acetyl-Histone H2AZ (Lys4/Lys7) Rabbit mAb #75336.

Background

Modulation of chromatin structure plays a critical role in the regulation of transcription in eukaryotes. The nucleosome, made up of four core histone proteins (H2A, H2B, H3 and H4), is the primary building block of chromatin. In addition to the growing number of post-translational histone modifications regulating chromatin structure, cells can also exchange canonical histones with variant histones that can directly or indirectly modulate chromatin structure (1). There are five major variants of histone H2A: canonical H2A (most abundant), H2A.X, MacroH2A, H2ABbd and H2A.Z (2). Histone H2A.Z, the most conserved variant across species, functions as both a positive and negative regulator of transcription and is important for chromosome stability (2). Several homologous protein complexes, such as SWR-C (*S. cerevisiae*), TIP60 (*D. melanogaster*) and SRCAP (mammals), have been shown to catalyze the ATP-dependent exchange of H2A.Z for H2A in the nucleosome (3,4,5). This exchange of histone H2A variants changes histone-histone interactions in the nucleosome core and alters an acidic patch on the surface of the nucleosome, resulting in changes in nucleosome stability and binding of non-histone proteins such as HP1α (6,7).

Background References

1. Jin, J. et al. (2005) *Trends Biochem Sci* 30, 680-7.
2. Raisner, R.M. and Madhani, H.D. (2006) *Curr Opin Genet Dev* 16, 119-24.
3. Mizuguchi, G. et al. (2004) *Science* 303, 343-8.
4. Kusch, T. et al. (2004) *Science* 306, 2084-7.
5. Ruhl, D.D. et al. (2006) *Biochemistry* 45, 5671-7.
6. Suto, R.K. et al. (2000) *Nat Struct Biol* 7, 1121-4.
7. Fan, J.Y. et al. (2004) *Mol Cell* 16, 655-61.

Species Reactivity

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

Applications Key

FC-FP: Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

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

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