Revision 6

Store at -20C

#50722

Histone H2A.Z (E9M5G) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, ChIP, ChIP-seq	H M R Mk	Endogenous	14	Rabbit IgG	#P0C0S5	3015

Product Usage Information

For optimal ChIP and ChIP-seq 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
Chromatin IP	1:50
Chromatin IP-seq	1:50

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

Histone H2A.Z (E9M5G) Rabbit mAb recognizes endogenous levels of total H2A.Z protein. This antibody does not cross-react with H2A protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val110 of human H2A.Z protein.

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).

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 **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq

Cross-Reactivity Key

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

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