

Anti-Histone H3 (tri methyl K9) Antibody [2G1]

RT1287



Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human
Applications:	WB, IF
Molecular Wt:	11kDa
Clone number:	2G1

Description: Eukaryotic histones are basic and water soluble nuclear proteins that form hetero-octameric nucleosome particles by wrapping 146 base pairs of DNA in a left-handed super-helical turn sequentially to form chromosomal fibers. Two molecules of each of the four core histones (H2A, H2B, H3 and H4) form the octamer, which is comprised of two H2A-H2B dimers and two H3-H4 dimers, forming two nearly symmetrical halves by tertiary structure. Histones are subject to posttranslational modification by enzymes primarily on their N-terminal tails, but also in their globular domains. Human Histone H3 is subject to trimethylation at Lys 9, a modification that may be necessary for select DNA transactions or chromatin state transitions. Acetylation is generally linked to gene activation. Acetylation on Lys-10 (H3K9ac) impairs methylation at Arg-9 (H3R8me2s). Acetylation on Lys-19 (H3K18ac) and Lys-24 (H3K24ac) favors methylation at Arg-18 (H3R17me). Citrullination at Arg-9 (H3R8ci) and/or Arg-18 (H3R17ci) by PADI4 impairs methylation and represses transcription. Asymmetric dimethylation at Arg-18 (H3R17me2a) by CARM1 is linked to gene activation. Symmetric dimethylation at Arg-9 (H3R8me2s) by PRMT5 is linked to gene repression. Asymmetric dimethylation at Arg-3 (H3R2me2a) by PRMT6 is linked to gene repression and is mutually exclusive with H3 Lys-5 methylation (H3K4me2 and H3K4me3). H3R2me2a is present at the 3' of genes regardless of their transcription state and is enriched on inactive promoters, while it is absent on active promoters.

Immunogen: Amino acids 6-16 of Histone H3 trimethylated at Lysine 9 of human origin.

Positive control: Expressed during S phase, then expression strongly decreases as cell division slows down during the process of differentiation.

Subcellular location: Nucleus.

Database links: SwissProt: P68431 Human

Recommended Dilutions:

WB 1:100-1:1,000

IF 1:50-1:500

Storage Buffer: 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Storage Instruction: Store at +4°C.

Purity: Protein A affinity purified.

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Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Chang, Q., Zhang, Y., Beezhold, K.J., Bhatia, D., Zhao, H., Chen, J., Castranova, V., Shi, X. and Chen, F. 2008. Sustained JNK1 activation is associated with altered Histone H3 methylations in human liver cancer. *J. Hepatol.* E-published.
2. Jin, Y., Rodriguez, A.M. and Wyrick, J. 2008. Genetic and genome-wide analysis of simultaneous mutations in acetylated and methylated lysine residues in Histone H3 in *Saccharomyces cerevisiae*. *Genetics* E-published.

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