Histone H3K9me1 antibody (pAb)

Catalog Nos: 39887, 39888

RRID: AB_2793381
Isotype: IgG
Application(s): ChIP, ChIP-Seq, DB, WB
Reactivity: Human, Wide Range Predicted

Quantities: 100 µg, 10 µg
Purification: Protein A Chromatography
Host: Rabbit
Concentration: 1 µg/µl
Molecular Weight: 17 kDa

Background: Histone H3 is one of the core components of the nucleosome. The nucleosome is the smallest subunit of chromatin and consists of 147 base pairs of DNA wrapped around an octamer of core histone proteins (two each of Histone H2A, Histone H2B, Histone H3 and Histone H4). Histone H1 is a linker histone, present at the interface between the nucleosome core and DNA entry/exit points. Histone H1 is responsible for establishing higher-order chromatin structure. Chromatin is subject to a variety of chemical modifications, including post-translational modifications of the histone proteins and the methylation of cytosine residues in the DNA. Reported histone modifications include acetylation, methylation, phosphorylation, ubiquitylation, glycosylation, ADP-ribosylation, carbonylation and SUMOylation; these modifications play a major role in regulating gene expression.

The methylation of histones can occur on two different residues: arginine or lysine. Histone methylation can be associated with transcriptional activation or repression, depending on the methylated residue. Lysine 9 of histone H3 can be mono-, di- or trimethylated by different histone methyltransferases (HMTs) such as SuvH39H1 or G9a. This methylated lysine can be demethylated by histone demethylases as JMJD1A, LSD1 or JMJD2C. Methylation of this residue is mainly associated with transcriptional repression.

Immunogen: This Histone H3 monomethyl Lys9 antibody was raised against a peptide including monomethyl lysine 9 of histone H3.

Buffer: Purified IgG in PBS (pH 7.5) with 30% glycerol and 0.035% sodium azide. Sodium azide is highly toxic. For your convenience, an unpurified serum version (Catalog No. 39249) of this antibody is also available.

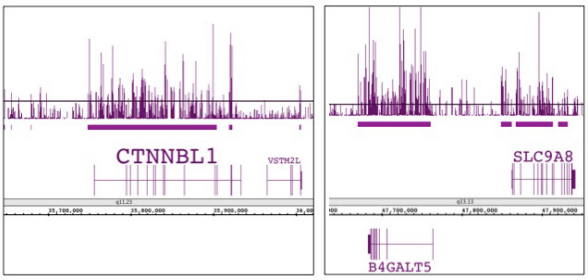
Application Notes:
Applications Validated by Active Motif:
ChIP: 4 µg per ChIP
ChIP-Seq & ChIP-chip: 4 µg each
WB*: 1 - 2 µg/ml dilution

The addition of 0.05% Tween 20 in the blocking buffer and primary antibody incubation buffer is recommended to aid in detection by Western blot. Individual optimization may be required.

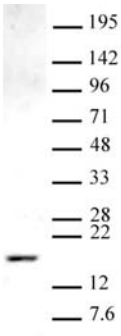
*Note: many chromatin-bound proteins are not soluble in a low salt nuclear extract and fractionate to the pellet. Therefore, we recommend a High Salt / Sonication Protocol when preparing nuclear extracts for Western blot.

Storage and Guarantee: Some products may be shipped at room temperature. This will not affect their stability or performance. Avoid repeated freeze/thaw cycles by aliquoting items into single-use fractions for storage at -20°C for up to 2 years. Keep all reagents on ice when not in storage. This product is guaranteed for 12 months from date of receipt.

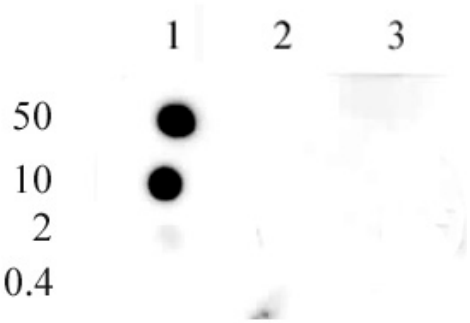
This product is for research use only and is not for use in diagnostic procedures.



Histone H3K9me1 antibody (pAb) tested by ChIP-chip.
ChIP was performed using the ChIP-IT® High Sensitivity Kit (Cat. No. 53040) with chromatin from a human breast cancer cell line (4.5 million cells) and 4 µl of antibody. ChIP DNA was amplified by WGA, labeled and hybridized to a human tiling array. The literature suggests that this histone modification is enriched in actively transcribed genes. The 2 images above show enrichment of H3K9me1 across gene bodies.



Histone H3 monomethyl Lys9 antibody (pAb) tested by Western blot.
Nuclear extract of HeLa cells (20 µg per lane) probed with Histone H3 monomethyl Lys9 antibody at a dilution of 2 µg/ml.



Histone H3 monomethyl Lys9 antibody (pAb) tested by dot blot analysis.
Dot blot analysis was used to confirm the specificity of Histone H3 monomethyl Lys9 antibody for monomethyl Lys9 of histone H3. Recombinant methylated proteins corresponding to the immunogen and related proteins were spotted onto PVDF and probed with Histone H3 monomethyl Lys9 antibody at 2 µg/ml. The amount of protein (picomoles) spotted is indicated next to each row.

Lane 1: recombinant monomethyl lysine 9 protein.
Lane 2: recombinant dimethyl lysine 9 protein.
Lane 3: recombinant trimethyl lysine 9 protein.