

## Mouse Anti-Histone H3 (tri methyl K4) antibody

SLM-33110M

**Product Name** Histone H3 (tri methyl K4)

**Chinese Name** 甲基化组蛋白 H3(tri methyl K4)单克隆抗体

**Alias**

Histone H3 (tri methyl Lys4) ; H3K4me3; H3 histone family member E pseudogene; H3 histone family, member A; H3/A; H31\_HUMAN; H3F3; H3FA; Hist1h3a; HIST1H3B; HIST1H3C; HIST1H3D; HIST1H3E; HIST1H3F; HIST1H3G; HIST1H3H; HIST1H3I; HIST1H3J; HIST3H3; histone 1, H3a; Histone cluster 1, H3a; Histone H3 3 pseudogene; Histone H3.1; Histone H3/a; Histone H3/b; Histone H3/c; Histone H3/d; Histone H3/f; Histone H3/h; Histone H3/i; Histone H3/j; Histone H3/k; Histone H3/l; H3.1; H3/d; H3C1; H3C10; H3C11; H3C12; H3C2; H3C3; H3C4; H3C7; H3C8; H3FD;

**Product Type** Methylated anti

**Research Area** Chromatin and nuclear signals Epigenetics

**Immunogen Species** Mouse

**Clonality** Monoclonal

**Clone NO.** 4E11

**React Species** Human,Rat(predicted:Mouse,Pig,Cow,Rabbit,Fruit Fly)

IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500 (Paraffin sections need antigen repair)

**Applications** not yet tested in other applications.  
optimal dilutions/concentrations should be determined by the end user.

**Theoretical molecular weight** 15kDa

**Cellular localization** The nucleus

**Form** Liquid

**Concentration** 1mg/ml

**immunogen** KLH conjugated synthesised methylpeptide derived from human Histone H3 around the methylation site of Tri Methyl K4: RT(Tri Methyl-K)QT



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<b>Lsotype</b>	IgG1
<b>Purification</b>	affinity purified by Protein G
<b>Buffer Solution</b>	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
<b>Storage</b>	Shipped at 4°C. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
<b>Attention</b>	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
<b>PubMed</b>	<a href="#">PubMed</a> Histones are basic nuclear proteins that are responsible for the nucleosome structure of the chromosomal fiber in eukaryotes. Nucleosomes consist of approximately 146 bp of DNA wrapped around a histone octamer composed of pairs of each of the four core histones (H2A, H2B, H3, and H4). The chromatin fiber is further compacted through the interaction of a linker histone, H1, with the DNA between the nucleosomes to form higher order chromatin structures. This gene is intronless and encodes a replication-dependent histone that is a member of the histone H3 family. Transcripts from this gene lack polyA tails; instead, they contain a palindromic termination element. This gene is located separately from the other H3 genes that are in the histone gene cluster on chromosome 6p22-p21.3. [provided by RefSeq, Aug 2015]
<b>Product Detail</b>	<p><b>Function:</b> Core component of nucleosome. Nucleosomes wrap and compact DNA into chromatin, limiting DNA accessibility to the cellular machineries which require DNA as a template. Histones thereby play a central role in transcription regulation, DNA repair, DNA replication and chromosomal stability. DNA accessibility is regulated via a complex set of post-translational modifications of histones, also called histone code, and nucleosome remodeling.</p> <p><b>Subunit:</b> The nucleosome is a histone octamer containing two molecules each of H2A, H2B, H3 and H4 assembled in one H3-H4 heterotetramer and two H2A-H2B heterodimers. The octamer wraps approximately 147 bp of DNA.</p> <p><b>Subcellular Location:</b> Nucleus; Chromosome</p> <p><b>Tissue Specificity:</b> Expressed in testicular cells.Expressed during S phase, then expression strongly decreases as cell division slows down during the process of differentiation.</p> <p><b>Post-translational modifications:</b> 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). Acetylation at Lys-123 (H3K122ac)</p>

by EP300/p300 plays a central role in chromatin structure: localizes at the surface of the histone octamer and stimulates transcription, possibly by promoting nucleosome instability (By similarity).

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 (By similarity). Methylation at Lys-5 (H3K4me), Lys-37 (H3K36me) and Lys-80 (H3K79me) are linked to gene activation. Methylation at Lys-5 (H3K4me) facilitates subsequent acetylation of H3 and H4. Methylation at Lys-80 (H3K79me) is associated with DNA double-strand break (DSB) responses and is a specific target for TP53BP1. Methylation at Lys-10 (H3K9me) and Lys-28 (H3K27me) are linked to gene repression. Methylation at Lys-10 (H3K9me) is a specific target for HP1 proteins (CBX1, CBX3 and CBX5) and prevents subsequent phosphorylation at Ser-11 (H3S10ph) and acetylation of H3 and H4. Methylation at Lys-5 (H3K4me) and Lys-80 (H3K79me) require preliminary monoubiquitination of H2B at 'Lys-120'. Methylation at Lys-10 (H3K9me) and Lys-28 (H3K27me) are enriched in inactive X chromosome chromatin. Monomethylation at Lys-57 (H3K56me1) by EHMT2/G9A in G1 phase promotes interaction with PCNA and is required for DNA replication (By similarity).

Phosphorylated at Thr-4 (H3T3ph) by GSG2/haspin during prophase and dephosphorylated during anaphase. Phosphorylation at Ser-11 (H3S10ph) by AURKB is crucial for chromosome condensation and cell-cycle progression during mitosis and meiosis. In addition phosphorylation at Ser-11 (H3S10ph) by RPS6KA4 and RPS6KA5 is important during interphase because it enables the transcription of genes following external stimulation, like mitogens, stress, growth factors or UV irradiation and result in the activation of genes, such as c-fos and c-jun. Phosphorylation at Ser-11 (H3S10ph), which is linked to gene activation, prevents methylation at Lys-10 (H3K9me) but facilitates acetylation of H3 and H4. Phosphorylation at Ser-11 (H3S10ph) by AURKB mediates the dissociation of HP1 proteins (CBX1, CBX3 and CBX5) from heterochromatin.

Phosphorylation at Ser-11 (H3S10ph) is also an essential regulatory mechanism for neoplastic cell transformation. Phosphorylated at Ser-29 (H3S28ph) by MLTK isoform 1, RPS6KA5 or AURKB during mitosis or upon ultraviolet B irradiation. Phosphorylation at Thr-7 (H3T6ph) by PRKCB is a specific tag for epigenetic transcriptional activation that prevents demethylation of Lys-5 (H3K4me) by LSD1/KDM1A. At centromeres, specifically phosphorylated at Thr-12 (H3T11ph) from prophase to early anaphase, by DAPK3 and PKN1. Phosphorylation at Thr-12 (H3T11ph) by PKN1 is a specific tag for epigenetic transcriptional activation that promotes demethylation of Lys-10 (H3K9me) by KDM4C/JMJD2C. Phosphorylation at Tyr-42 (H3Y41ph) by JAK2 promotes exclusion of CBX5 (HP1 alpha) from chromatin (By similarity).

Ubiquitinated.

Lysine deamination at Lys-5 (H3K4all) to form allysine is mediated by LOXL2. Allysine formation by LOXL2 only takes place on H3K4me3 and results in gene repression.

**Similarity:**

Belongs to the histone H3 family.

**SWISS:**

P68431

**Gene ID:**

8350

**Database links:**

[Entrez Gene: 8350](#) Human

[Entrez Gene: 8351](#) Human

[Entrez Gene: 8352](#) Human

[Entrez Gene: 8353](#) Human

[Entrez Gene: 8354](#) Human

[Entrez Gene: 8355](#) Human

[Entrez Gene: 8356](#) Human

[Entrez Gene: 8357](#) Human

[Entrez Gene: 8358](#) Human

[Entrez Gene: 8968](#) Human

[Entrez Gene: 260423](#) Mouse

[Entrez Gene: 319148](#) Mouse

[Entrez Gene: 319149](#) Mouse

[Entrez Gene: 319150](#) Mouse

[Entrez Gene: 319151](#) Mouse

[Entrez Gene: 319152](#) Mouse

[Entrez Gene: 319153](#) Mouse

[Entrez Gene: 360198](#) Mouse

[Entrez Gene: 97908](#) Mouse

[Entrez Gene: 100364501](#) Rat

[Entrez Gene: 100365669](#) Rat

[Entrez Gene: 291159](#) Rat

[Entrez Gene: 314977](#) Rat

[Entrez Gene: 364716](#) Rat

[Entrez Gene: 679950](#) Rat

[Entrez Gene: 679994](#) Rat

[Entrez Gene: 680511](#) Rat

[Entrez Gene: 680599](#) Rat

[Entrez Gene: 682330](#) Rat

[Entrez Gene: 691496](#) Rat

[SwissProt: P68431](#) Human

[SwissProt: P84243](#) Human

[SwissProt: Q16695](#) Human

[SwissProt: Q6NXT2](#) Human

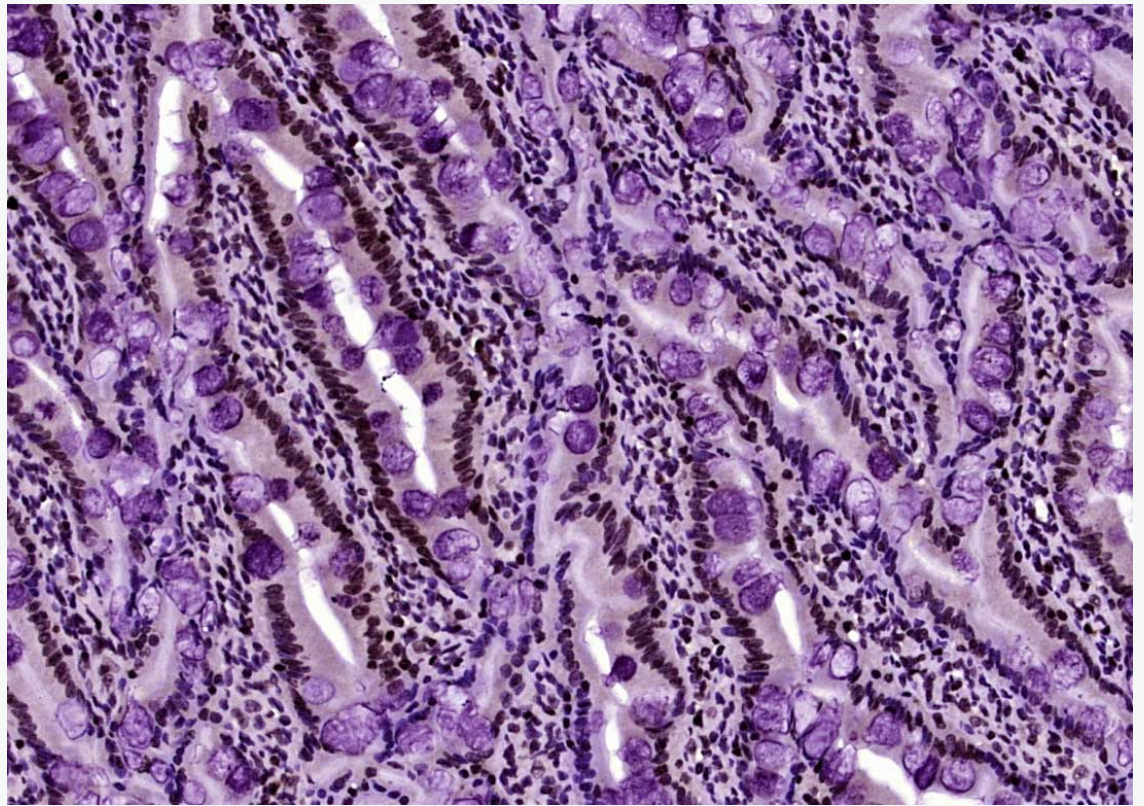
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[SwissProt: P68433](#) Mouse

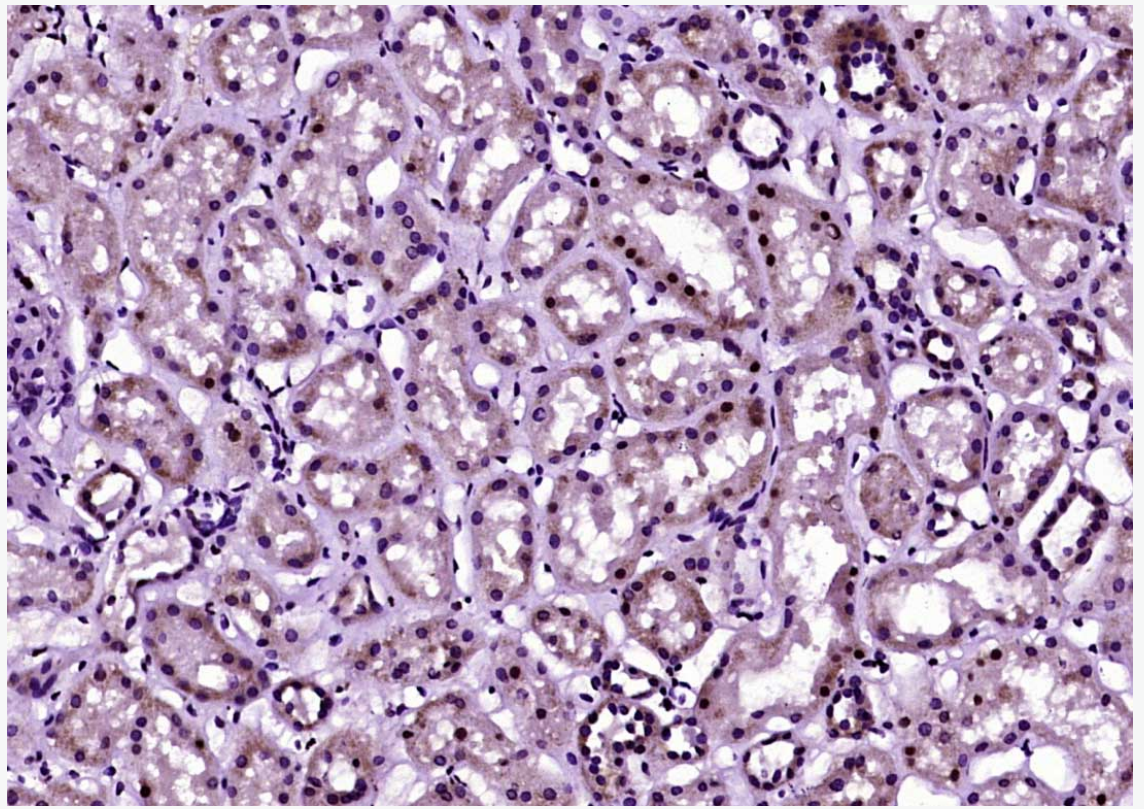
[SwissProt: P84228](#) Mouse

[SwissProt: Q6LED0](#) Rat

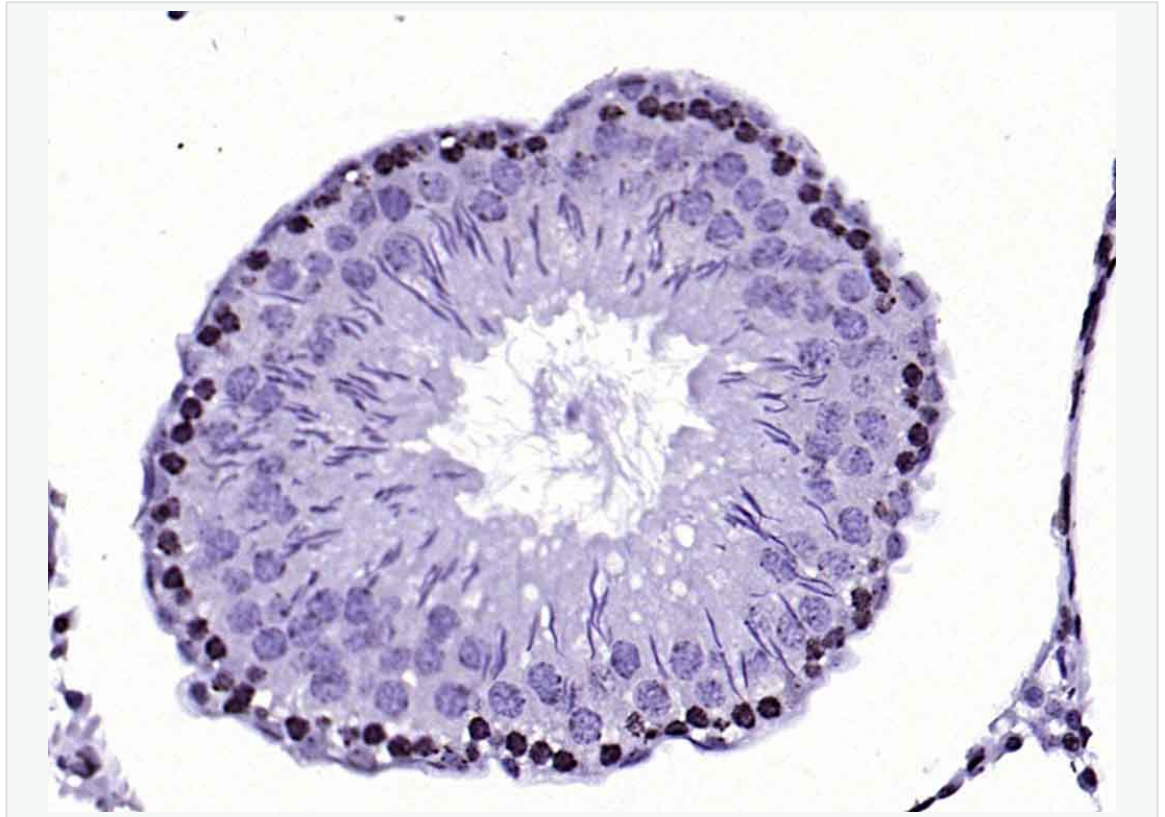
**Product  
Picture**



Paraformaldehyde-fixed, paraffin embedded (Rat colon); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (Histone H3 (tri methyl K4)) Monoclonal Antibody, Unconjugated (SLM-33110M) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Mouse) (sp-0024) instructions and DAB staining.



Paraformaldehyde-fixed, paraffin embedded (Human kidney); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (Histone H3 (tri methyl K4)) Monoclonal Antibody, Unconjugated (SLM-33110M) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Mouse) (sp-0024) instructions and DAB staining.



Paraformaldehyde-fixed, paraffin embedded (rat testis); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (Histone H3 (tri methyl K4)) Monoclonal Antibody, Unconjugated (SLM-33110M) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Mouse)(sp-0024) instructions and DAB staining.