

## Immunotag™ Histone H3 (Mono Methyl Lys80) Polyclonal Antibody

Antibody Specification	
Catalog No.	ITH0005
Product Description	Immunotag™ Histone H3 (Mono Methyl Lys80) Polyclonal Antibody
Size	50 µg, 100 µg
Conjugation	HRP, Biotin, FITC, Alexa Fluor® 350, Alexa Fluor® 405, Alexa Fluor® 488, Alexa Fluor® 555, Alexa Fluor® 647
IMPORTANT NOTE	This product is custom manufactured with a lead time of 3-4 weeks. Once in production, this item cannot be returned.
Target Protein	Histone H3 (M-Lys80)
Clonality	Polyclonal
Storage/Stability	-20°C/1 year
Application	WB,ELISA
Recommended Dilution	Western Blot: 1/500 - 1/2000. ELISA: 1/20000. Not yet tested in other applications.
Concentration	1 mg/ml
Reactive Species	Human,Mouse,Rat
Host Species	Rabbit
Immunogen	Synthesized peptide derived from human Histone H3 around the mono-methylation site of K80
Specificity	Mono-Methyl-Histone H3 (K80) Polyclonal Antibody detects endogenous levels of Histone H3 protein on Western Blot.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific protein A-Sepharose.
Form	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Gene Name	HIST1H3A/HIST1H3/HIST1H3C/HIST1H3D/HIST1H3E/HIST1H3F/HIST1H3G/HIST1H3H/HIST1H3I/HIST1H3J/HIST1H3K/HIST1H3L/HIST1H3M/HIST1H3N/HIST1H3O/HIST1H3P/HIST1H3Q/HIST1H3R/HIST1H3S/HIST1H3T/HIST1H3U/HIST1H3V/HIST1H3W/HIST1H3X/HIST1H3Y/HIST1H3Z/HIST1H3AA/HIST1H3AB/HIST1H3AC/HIST1H3AD/HIST1H3AE/HIST1H3AF/HIST1H3AG/HIST1H3AH/HIST1H3AI/HIST1H3AJ/HIST1H3AK/HIST1H3AL/HIST1H3AM/HIST1H3AN/HIST1H3AO/HIST1H3AP/HIST1H3AQ/HIST1H3AR/HIST1H3AS/HIST1H3AT/HIST1H3AU/HIST1H3AV/HIST1H3AW/HIST1H3AX/HIST1H3AY/HIST1H3AZ/HIST1H3BA/HIST1H3BB/HIST1H3BC/HIST1H3BD/HIST1H3BE/HIST1H3BF/HIST1H3BG/HIST1H3BH/HIST1H3BI/HIST1H3BJ/HIST1H3BK/HIST1H3BL/HIST1H3BM/HIST1H3BN/HIST1H3BO/HIST1H3BP/HIST1H3BQ/HIST1H3BR/HIST1H3BS/HIST1H3BT/HIST1H3BU/HIST1H3BV/HIST1H3BW/HIST1H3BX/HIST1H3BY/HIST1H3BZ/HIST1H3CA/HIST1H3CB/HIST1H3CC/HIST1H3CD/HIST1H3CE/HIST1H3CF/HIST1H3CG/HIST1H3CH/HIST1H3CI/HIST1H3CJ/HIST1H3CK/HIST1H3CL/HIST1H3CM/HIST1H3CN/HIST1H3CO/HIST1H3CP/HIST1H3CQ/HIST1H3CR/HIST1H3CS/HIST1H3CT/HIST1H3CU/HIST1H3CV/HIST1H3CW/HIST1H3CX/HIST1H3CY/HIST1H3CZ/HIST1H3DA/HIST1H3DB/HIST1H3DC/HIST1H3DD/HIST1H3DE/HIST1H3DF/HIST1H3DG/HIST1H3DH/HIST1H3DI/HIST1H3DJ/HIST1H3DK/HIST1H3DL/HIST1H3DM/HIST1H3DN/HIST1H3DO/HIST1H3DP/HIST1H3DQ/HIST1H3DR/HIST1H3DS/HIST1H3DT/HIST1H3DU/HIST1H3DV/HIST1H3DW/HIST1H3DX/HIST1H3DY/HIST1H3DZ/HIST1H3EA/HIST1H3EB/HIST1H3EC/HIST1H3ED/HIST1H3EE/HIST1H3EF/HIST1H3EG/HIST1H3EH/HIST1H3EI/HIST1H3EJ/HIST1H3EK/HIST1H3EL/HIST1H3EM/HIST1H3EN/HIST1H3EO/HIST1H3EP/HIST1H3EQ/HIST1H3ER/HIST1H3ES/HIST1H3ET/HIST1H3EU/HIST1H3EV/HIST1H3EW/HIST1H3EX/HIST1H3EY/HIST1H3EZ/HIST1H3FA/HIST1H3FB/HIST1H3FC/HIST1H3FD/HIST1H3FE/HIST1H3FF/HIST1H3FG/HIST1H3FH/HIST1H3FI/HIST1H3FJ/HIST1H3FK/HIST1H3FL/HIST1H3FM/HIST1H3FN/HIST1H3FO/HIST1H3FP/HIST1H3FQ/HIST1H3FR/HIST1H3FS/HIST1H3FT/HIST1H3FU/HIST1H3FV/HIST1H3FW/HIST1H3FX/HIST1H3FY/HIST1H3FZ/HIST1H3GA/HIST1H3GB/HIST1H3GC/HIST1H3GD/HIST1H3GE/HIST1H3GF/HIST1H3GG/HIST1H3GH/HIST1H3GI/HIST1H3GJ/HIST1H3GK/HIST1H3GL/HIST1H3GM/HIST1H3GN/HIST1H3GO/HIST1H3GP/HIST1H3GQ/HIST1H3GR/HIST1H3GS/HIST1H3GT/HIST1H3GU/HIST1H3GV/HIST1H3GW/HIST1H3GX/HIST1H3GY/HIST1H3GZ/HIST1H3HA/HIST1H3HB/HIST1H3HC/HIST1H3HD/HIST1H3HE/HIST1H3HF/HIST1H3HG/HIST1H3HH/HIST1H3HI/HIST1H3HJ/HIST1H3HK/HIST1H3HL/HIST1H3HM/HIST1H3HN/HIST1H3HO/HIST1H3HP/HIST1H3HQ/HIST1H3HR/HIST1H3HS/HIST1H3HT/HIST1H3HU/HIST1H3HV/HIST1H3HW/HIST1H3HX/HIST1H3HY/HIST1H3HZ/HIST1H3IA/HIST1H3IB/HIST1H3IC/HIST1H3ID/HIST1H3IE/HIST1H3IF/HIST1H3IG/HIST1H3IH/HIST1H3IJ/HIST1H3IK/HIST1H3IL/HIST1H3IM/HIST1H3IN/HIST1H3IO/HIST1H3IP/HIST1H3IQ/HIST1H3IR/HIST1H3IS/HIST1H3IT/HIST1H3IU/HIST1H3IV/HIST1H3IW/HIST1H3IX/HIST1H3IY/HIST1H3IZ/HIST1H3JA/HIST1H3JB/HIST1H3JC/HIST1H3JD/HIST1H3JE/HIST1H3JF/HIST1H3JG/HIST1H3JH/HIST1H3JI/HIST1H3JJ/HIST1H3JK/HIST1H3JL/HIST1H3JM/HIST1H3JN/HIST1H3JO/HIST1H3JP/HIST1H3JQ/HIST1H3JR/HIST1H3JS/HIST1H3JT/HIST1H3JU/HIST1H3JV/HIST1H3JW/HIST1H3JX/HIST1H3JY/HIST1H3JZ/HIST1H3KA/HIST1H3KB/HIST1H3KC/HIST1H3KD/HIST1H3KE/HIST1H3KF/HIST1H3KG/HIST1H3KH/HIST1H3KI/HIST1H3KJ/HIST1H3KK/HIST1H3KL/HIST1H3KM/HIST1H3KN/HIST1H3KO/HIST1H3KP/HIST1H3KQ/HIST1H3KR/HIST1H3KS/HIST1H3KT/HIST1H3KU/HIST1H3KV/HIST1H3KW/HIST1H3KX/HIST1H3KY/HIST1H3KZ/HIST1H3LA/HIST1H3LB/HIST1H3LC/HIST1H3LD/HIST1H3LE/HIST1H3LF/HIST1H3LG/HIST1H3LH/HIST1H3LI/HIST1H3LJ/HIST1H3LK/HIST1H3LL/HIST1H3LM/HIST1H3LN/HIST1H3LO/HIST1H3LP/HIST1H3LQ/HIST1H3LR/HIST1H3LS/HIST1H3LT/HIST1H3LU/HIST1H3LV/HIST1H3LW/HIST1H3LX/HIST1H3LY/HIST1H3LZ/HIST1H3MA/HIST1H3MB/HIST1H3MC/HIST1H3MD/HIST1H3ME/HIST1H3MF/HIST1H3MG/HIST1H3MH/HIST1H3MI/HIST1H3MJ/HIST1H3MK/HIST1H3ML/HIST1H3MN/HIST1H3MO/HIST1H3MP/HIST1H3MQ/HIST1H3MR/HIST1H3MS/HIST1H3MT/HIST1H3MU/HIST1H3MV/HIST1H3MW/HIST1H3MX/HIST1H3MY/HIST1H3MZ/HIST1H3NA/HIST1H3NB/HIST1H3NC/HIST1H3ND/HIST1H3NE/HIST1H3NF/HIST1H3NG/HIST1H3NH/HIST1H3NI/HIST1H3NJ/HIST1H3NK/HIST1H3NL/HIST1H3NM/HIST1H3NO/HIST1H3NP/HIST1H3NQ/HIST1H3NR/HIST1H3NS/HIST1H3NT/HIST1H3NU/HIST1H3NV/HIST1H3NW/HIST1H3NX/HIST1H3NY/HIST1H3NZ/HIST1H3OA/HIST1H3OB/HIST1H3OC/HIST1H3OD/HIST1H3OE/HIST1H3OF/HIST1H3OG/HIST1H3OH/HIST1H3OI/HIST1H3OJ/HIST1H3OK/HIST1H3OL/HIST1H3OM/HIST1H3ON/HIST1H3OO/HIST1H3OP/HIST1H3OQ/HIST1H3OR/HIST1H3OS/HIST1H3OT/HIST1H3OU/HIST1H3OV/HIST1H3OW/HIST1H3OX/HIST1H3OY/HIST1H3OZ/HIST1H3PA/HIST1H3PB/HIST1H3PC/HIST1H3PD/HIST1H3PE/HIST1H3PF/HIST1H3PG/HIST1H3PH/HIST1H3PI/HIST1H3PJ/HIST1H3PK/HIST1H3PL/HIST1H3PM/HIST1H3PN/HIST1H3PO/HIST1H3PP/HIST1H3PQ/HIST1H3PR/HIST1H3PS/HIST1H3PT/HIST1H3PU/HIST1H3PV/HIST1H3PW/HIST1H3PX/HIST1H3PY/HIST1H3PZ/HIST1H3QA/HIST1H3QB/HIST1H3QC/HIST1H3QD/HIST1H3QE/HIST1H3QF/HIST1H3QG/HIST1H3QH/HIST1H3QI/HIST1H3QJ/HIST1H3QK/HIST1H3QL/HIST1H3QM/HIST1H3QN/HIST1H3QO/HIST1H3QP/HIST1H3QQ/HIST1H3QR/HIST1H3QS/HIST1H3QT/HIST1H3QU/HIST1H3QV/HIST1H3QW/HIST1H3QX/HIST1H3QY/HIST1H3QZ/HIST1H3RA/HIST1H3RB/HIST1H3RC/HIST1H3RD/HIST1H3RE/HIST1H3RF/HIST1H3RG/HIST1H3RH/HIST1H3RI/HIST1H3RJ/HIST1H3RK/HIST1H3RL/HIST1H3RM/HIST1H3RN/HIST1H3RO/HIST1H3RP/HIST1H3RQ/HIST1H3RR/HIST1H3RS/HIST1H3RT/HIST1H3RU/HIST1H3RV/HIST1H3RW/HIST1H3RX/HIST1H3RY/HIST1H3RZ/HIST1H3SA/HIST1H3SB/HIST1H3SC/HIST1H3SD/HIST1H3SE/HIST1H3SF/HIST1H3SG/HIST1H3SH/HIST1H3SI/HIST1H3SJ/HIST1H3SK/HIST1H3SL/HIST1H3SM/HIST1H3SN/HIST1H3SO/HIST1H3SP/HIST1H3SQ/HIST1H3SR/HIST1H3SS/HIST1H3ST/HIST1H3SU/HIST1H3SV/HIST1H3SW/HIST1H3SX/HIST1H3SY/HIST1H3SZ/HIST1H3TA/HIST1H3TB/HIST1H3TC/HIST1H3TD/HIST1H3TE/HIST1H3TF/HIST1H3TG/HIST1H3TH/HIST1H3TI/HIST1H3TJ/HIST1H3TK/HIST1H3TL/HIST1H3TM/HIST1H3TN/HIST1H3TO/HIST1H3TP/HIST1H3TQ/HIST1H3TR/HIST1H3TS/HIST1H3TT/HIST1H3TU/HIST1H3TV/HIST1H3TW/HIST1H3TX/HIST1H3TY/HIST1H3TZ/HIST1H3UA/HIST1H3UB/HIST1H3UC/HIST1H3UD/HIST1H3UE/HIST1H3UF/HIST1H3UG/HIST1H3UH/HIST1H3UI/HIST1H3UJ/HIST1H3UK/HIST1H3UL/HIST1H3UM/HIST1H3UN/HIST1H3UO/HIST1H3UP/HIST1H3UQ/HIST1H3UR/HIST1H3US/HIST1H3UT/HIST1H3UU/HIST1H3UV/HIST1H3UW/HIST1H3UX/HIST1H3UY/HIST1H3UZ/HIST1H3VA/HIST1H3VB/HIST1H3VC/HIST1H

Antibody Specification

Description	histone cluster 1 H3 family member a(HIST1H3A) Homo sapiens Histones are basic nuclear proteins that are the main component of the nucleosome, the basic unit of chromatin. They are also involved in the chromosomal fiber in eukaryotes. This structure consists of approximately 146 bp of DNA wrapped around a core of eight histone molecules, two molecules of each of the four core histones (H2A, H2B, H3, and H4). The chromatin fiber is further compacted by the association of the histone H1 protein with the DNA between the nucleosomes to form higher order chromatin structures. This gene is intronless and encodes a protein that is a member of the histone H3 family. Transcripts from this gene lack polyA tails; instead, they contain a 3' UTR that is found in the large histone gene cluster on chromosome 6p22-p21.3. [provided by RefSeq, Aug 2015]
Cell Pathway/ Category	Systemic lupus erythematosus,
Protein Expression	Blood,Epithelium,Kidney,Lung,Ovary,Spleen,Uterus,
Subcellular Localization	nuclear chromosome,nuclear chromosome, telomeric region,nucleosome,nuclear nucleosome,extracellular space,cell-cell junction,membrane,protein complex,extracellular exosome,

## Antibody Specification

	caution:Was originally (PubMed:2587222) thought to originate from mouse.,developmental stage:Expresses at embryonic stages.,expression pattern:Expression decreases as cell division slows down during the process of differentiation.,function:Core component of nucleosome which packages DNA into chromatin, limiting DNA accessibility to the cellular machineries which require DNA as a template. Involved in gene expression regulation, DNA repair, DNA replication and chromosomal stability. DNA accessibility is regulated via acetylation/deacetylation of histones, also called histone code, and nucleosome remodeling.,mass spectrometry:Monoisotopic with molecular weight 16 kDa.,PubMed:16457589,miscellaneous:This histone is only present in mammals and is enriched in acetylating agents like acetate.(H3K9me2).,PTM:Acetylation is generally linked to gene activation. Acetylation on Lys-10 (H3K9ac) impairs methylation at Arg-9 (H3R8ci),Lys-19 (H3K18ac) and Lys-24 (H3K24ac) favors methylation at Arg-18 (H3R17me).,PTM:Asymmetric dimethylation on H3 is linked to gene activation. Symmetric dimethylation at Arg-9 (H3R8sme2) by PRMT5 is linked to gene repression. Asymmetric dimethyllysine (H3R2me2a) by PRMT6 is linked to gene repression and is mutually exclusive with H3 Lys-5 methylation. Methylation at Ser-10 (H3S10ph) at the 3' of genes regardless of their transcription state and is enriched on inactive promoters, while it is absent or reduced on active ones.Arg-9 (H3R8ci) and/or Arg-18 (H3R17ci) by PADI4 impairs methylation and represses transcription.,PTM:Hydroxy-methylation entry.,PTM:Methylation at Lys-5 (H3K4me), Lys-37 (H3K36me) and Lys-80 (H3K79me) are linked to gene repression. Methylation facilitates subsequent acetylation of H3 and H4. Methylation at Lys-80 (H3K79me) is associated with DNase hypersensitivity. It is specific target for TP53BP1. Methylation at Lys-10 (H3K9me) and Lys-28 (H3K27me) are linked to gene repression. Methylation is specific target for HP1 proteins (CBX1, CBX3 and CBX5) and prevents subsequent phosphorylation at Ser-10 (H3S10ph). Methylation at Lys-5 (H3K4me) and Lys-80 (H3K79me) require preliminary monoubiquitination of H2B and H2A.Methylation at Lys-28 (H3K27me) are enriched in inactive X chromosome chromatin.,PTM:Monoubiquitination of Lys-120 by RNF2/RING2 marks a tag for epigenetic transcriptional repression and participates in X chromosome inactivation of female mice. Ubiquitin-mediated imprinting and random X inactivation. Ubiquitinated H2A is enriched in inactive X chromosome chromatins. Monoubiquitination of methylated methylation of 'Lys-27' of histone H3. Monoubiquitination of Lys-120 by RNF2/RING2 can also be induced after deubiquitination.Following DNA double-strand breaks (DSBs), it is ubiquitinated through 'Lys-63' linkage of ubiquitin moiety by E3 complex containing RNF8 and RNF168, leading to the recruitment of repair proteins to sites of DNA damage. Monoubiquitination and polyubiquitination are distinct events.,PTM:Phosphorylated at Thr-4 (H3T3ph) by GSG2/haspin during prophase I and II of meiosis. Phosphorylates centromeres, specifically phosphorylated at Thr-12 (H3T11ph) from prophase to early anaphase, probably mediated by AURKB. Ser-11 (H3S10ph) by AURKB is crucial for chromosome condensation and cell-cycle progression during mitosis and meiosis. Ser-11 (H3S10ph) by RPS6KA4 and RPS6KA5 is important during interphase because it enables the transcription of genes responsive to growth factors, stress, growth factors or UV irradiation and result in the activation of genes, such as c-fos and c-jun.Phosphorylation mediates gene activation, prevents methylation at Lys-10 (H3K9me) but facilitates acetylation of H3 and H4. Phosphorylation promotes dissociation of HP1 proteins (CBX1, CBX3 and CBX5) from heterochromatin. Phosphorylation serves as regulatory mechanism for neoplastic cell transformation. Phosphorylated at Ser-29 (H3S28ph) by MLTK isoform 1 upon ultraviolet B irradiation.,PTM:Phosphorylated at Thr-4 (H3T3ph) by GSG2/haspin during prophase I and II of meiosis. Phosphorylates centromeres, specifically phosphorylated at Thr-12 (H3T11ph) from prophase to early anaphase, probably mediated by AURKB. Ser-11 (H3S10ph) by AURKB is crucial for chromosome condensation and cell-cycle progression during mitosis and meiosis. Ser-11 (H3S10ph) by RPS6KA4 and RPS6KA5 is important during interphase because it enables the transcription of genes responsive to growth factors or UV irradiation and result in the activation of genes, such as c-fos and c-jun. Phosphorylation promotes gene activation, prevents methylation at Lys-10 (H3K9me) but facilitates acetylation of H3 and H4. Phosphorylation promotes dissociation of HP1 proteins (CBX1, CBX3 and CBX5) from heterochromatin. Phosphorylation at Ser-11 (H3S10ph) serves as regulatory mechanism for neoplastic cell transformation. Phosphorylated at Ser-29 by MLTK isoform 1, RPS6KA5 or RPS6KA4 upon ultraviolet B irradiation.,PTM:Phosphorylation on Ser-2 is enhanced during mitosis. Phosphorylation on Ser-2 by RPS6KA5 inhibits acetylation of H3.,PTM:Acetylation of H3 inhibits Ser-2 phosphorylation by RPS6KA5/MSK1.,PTM:Symmetric dimethylation on Arg-9 (H3R8sme2) plays a crucial role in the germ-cell lineage.,PTM:The chromatin-associated form is phosphorylated on Thr-121 (H3T11ph) by RBX1 complex in response to ultraviolet irradiation. This may weaken the interaction between histones and other nuclear proteins.,similarity:Belongs to the histone H2A family.,similarity:Belongs to the histone H3 family.,subunit composition: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.,subunit:The nucleosome is a histone octamer containing two molecules each of H2A, H2B, H3 and H4 heterotetramer and two H2A-H2B heterodimers. The octamer wraps approximately 147 bp of DNA. During transcription, RNA polymerase interacts with the histone H3-H4 heterodimer.,
Protein Function	
Usage	For Research Use Only! Not for diagnostic or therapeutic procedures.

