

## Go-ChIP-Grade™ Purified anti-Histone H4 Monomethyl (Lys20) Antibody

<b>Catalog# / Size</b>	828003 / 25 µg 828004 / 100 µg
<b>Clone</b>	5E10-D8
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	Histone H4, Histone 1, H4a, H4 histone family member A
<b>Isotype</b>	Mouse IgG1, κ
<b>Description</b>	<p>Histone proteins are classified into core histones (H2A, H2B, H3, H4) and linker histones (H1, H5). Core histones form an octamer, which contains two H2A-H2B dimers and one H3-H4 tetramer. Core histones are predominantly globular except for the unstructured N-terminal tails. Posttranslational modifications, such as acetylation, methylation, phosphorylation, ubiquitination, SUMOylation and ADP-ribosylation occur in histone tails.</p> <p>Histone modifications induce changes of chromatin structure and thereby affect the accessibility of transcription factors, nuclear proteins and enzymes to genomic DNA, resulting in gene activation or repression. It is known that histone modifications play critical roles in DNA repair, DNA replication, transcription regulation, alternative splicing and chromosome condensation and some diseases including autoimmune diseases and cancers.</p>

### Product Details

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<b>Verified Reactivity</b>	Human, Rat, Mouse
<b>Antibody Type</b>	Monoclonal
<b>Host Species</b>	Mouse
<b>Immunogen</b>	This monoclonal antibody was raised against a synthetic peptide conjugated to KLH containing methylated lysine 20 of human Histone H4.
<b>Formulation</b>	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
<b>Preparation</b>	The antibody was purified by affinity chromatography.
<b>Concentration</b>	0.5 mg/ml
<b>Storage &amp; Handling</b>	The antibody solution should be stored undiluted between 2°C and 8°C.
<b>Application</b>	<a href="#">ChIP - Quality tested</a> <a href="#">IHC-P, WB - Verified</a>
<b>Recommended Usage</b>	Each lot of this antibody is quality control tested by ChIP Assay. The suggested dilution for ChIP application is 1:50-1:100 by volume. For immunohistochemistry on formalin-fixed paraffin-embedded tissue, a dilution range of 1:100 - 1:200 is suggested. For Western blotting, the suggested use of this reagent is 0.1 µg/mL (1:5000). It is recommended that the reagent be titrated for optimal performance for each application.
<b>Application Notes</b>	25 µg and 100 µg of Go-ChIP-Grade™ Purified Antibody can be used for 2-5 or 10-20 immunoprecipitations, respectively, at the recommended dilutions.
<b>Application References</b>	1. Shirakata Y, <i>et al.</i> 2014. <i>J. Reprod. Dev.</i> 60:383. (IHC-P)
<b>(PubMed link indicates BioLegend citation)</b>	
<b>RRID</b>	AB_2632897 (BioLegend Cat. No. 828003) AB_2632843 (BioLegend Cat. No. 828004)

### Antigen Details

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<b>Structure</b>	Histone H4 is a 103 amino acid protein with an apparent molecular mass of 12 kD
<b>Distribution</b>	Nucleus.
<b>Function</b>	Histones play a central role in transcription regulation, DNA repair, DNA replication and chromosomal stability. Histone proteins H3 and H4 bind to form a H3-H4 dimer, two of these H3-H4 dimers combine to form a tetramer. This tetramer further combines with two H2a-H2b dimers to form the compact Histone octamer core.
<b>Interaction</b>	Various transcription factors and nuclear protein.
<b>Cell Type</b>	Mesenchymal Stem Cells
<b>Biology Area</b>	Cell Biology, Chromatin Remodeling/Epigenetics, Neuroscience, Stem Cells, Transcription Factors
<b>Antigen References</b>	<ol style="list-style-type: none"> <li>1. Chen HM, <i>et al.</i> 2015. <i>Epigenetics and Dermatology</i>. 409:441.</li> <li>2. Wang Z, <i>et al.</i> 2008. <i>Nat. Genet.</i> 40:897.</li> <li>3. Beck DB, <i>et al.</i> 2012. <i>Genes Dev.</i> 26:325.</li> </ol>
<b>Gene ID</b>	<a href="#">8359</a>

## Related Protocols

[BioLegend's Tools for Chromatin Immunoprecipitation \(ChIP\) Assays - Video](#)

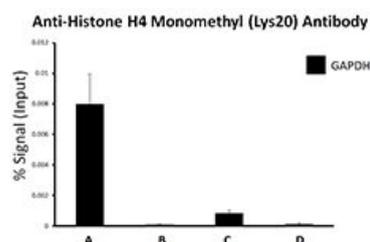
[Chromatin Immunoprecipitation \(ChIP\) Assay Protocol](#)

[Immunohistochemistry Protocol for Frozen Sections](#)

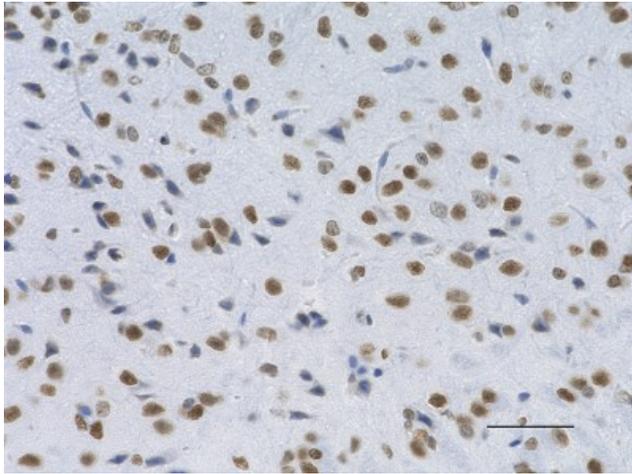
## Other Formats

Purified anti-Histone H4 Monomethyl (Lys20), Go-ChIP-Grade™ Purified anti-Histone H4 Monomethyl (Lys20)

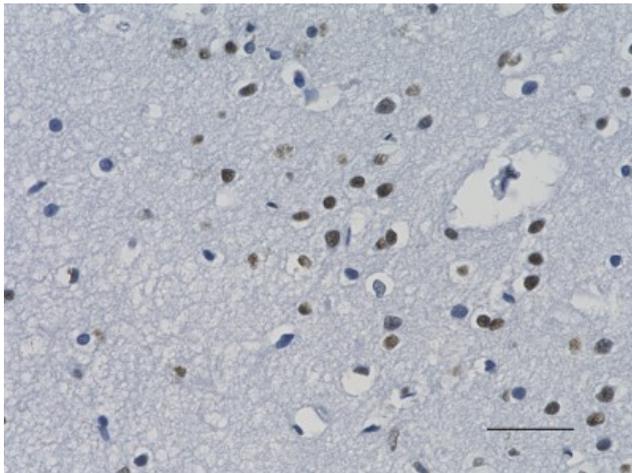
## Product Data



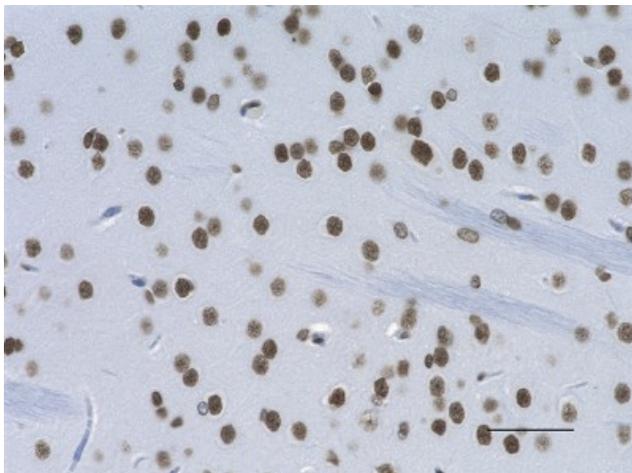
Chromatin Immunoprecipitation (ChIP) was performed using commercial Protein-G coated 96 well high-throughput ChIP assay kit by loading 3 µg of cross-linked chromatin samples from Jurkat cells with either A) 1:50 dilution of Go-ChIP-Grade™ Purified anti-Histone H4 Monomethyl (Lys20) (clone 5E10-D8), B) equal amount of Purified Mouse IgG1 Isotype Control Antibody (clone MG1-45), or C) competitor's ChIP-grade Purified anti-Histone H4 Monomethyl (Lys20) Antibody and D) equal amount of matched Isotype Control Antibody as recommended by the manufacturer. The enriched DNA was purified and quantified by real-time qPCR using primers targeting human GAPDH gene region. The amount of immunoprecipitated DNA in each sample is represented as signal relative to the 5% of total amount of input chromatin.



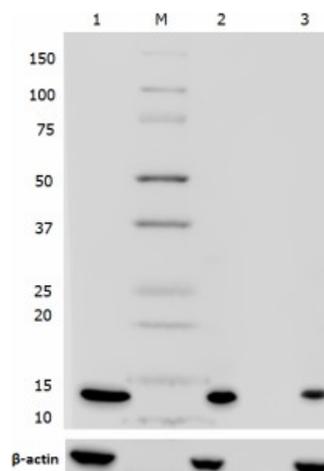
IHC staining of purified anti-Histone H4 Monomethyl (Lys20) antibody (clone 5E10-D8) on formalin-fixed paraffin-embedded mouse brain tissue. Following antigen retrieval using Sodium Citrate H.I.E.R., the tissue was incubated with 10  $\mu\text{g}/\text{ml}$  of the primary antibody overnight at 4°C. BioLegend's Ultra-Streptavidin (USA) HRP kit (Multi-Species, DAB, Cat. No. 929901) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The image was captured with a 40X objective. Scale bar: 50  $\mu\text{m}$



IHC staining of purified anti-Histone H4 Monomethyl (Lys20) antibody (clone 5E10-D8) on formalin-fixed paraffin-embedded human brain tissue. Following antigen retrieval using Sodium Citrate H.I.E.R., the tissue was incubated with 5  $\mu\text{g}/\text{ml}$  of the primary antibody overnight at 4°C. BioLegend's Ultra-Streptavidin (USA) HRP kit (Multi-Species, DAB, Cat. No. 929901) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The image was captured with a 40X objective. Scale bar: 50  $\mu\text{m}$



IHC staining of purified anti-Histone H4 Monomethyl (Lys20) antibody (clone 5E10-D8) on formalin-fixed paraffin-embedded rat brain tissue. Following antigen retrieval using Sodium Citrate H.I.E.R., the tissue was incubated with 5  $\mu\text{g}/\text{ml}$  of the primary antibody overnight at 4°C. BioLegend's Ultra-Streptavidin (USA) HRP kit (Multi-Species, DAB, Cat. No. 929901) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The image was captured with a 40X objective. Scale bar: 50  $\mu\text{m}$



Total lysates (15 $\mu\text{g}$  protein) from Jurkat (lane 1), Raw 264.7 (lane 2) and UMR106 (lane 3) cells were resolved by electrophoresis (4-20% Tris-Glycine gel), transferred to nitrocellulose, and probed with 1:5000 diluted (0.1  $\mu\text{g}/\text{mL}$ ) Purified anti-Histone H4 Monomethyl (Lys20) Antibody, clone 5E10-D8 (upper). Proteins were visualized by chemiluminescence detection using a 1:3000 diluted anti-Mouse-IgG secondary antibody conjugated to HRP for the anti-Histone H4 Monomethyl (Lys20) Antibody or 1:5000 diluted Direct-Blot™ HRP anti- $\beta$ -Actin Antibody, clone 2F1-1(lower). Lane M: Molecular weight ladder.

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