

Datasheet for 600-401-I85**Histone H3 R2me2s/K4me2 Antibody****Overview**

Description:	Anti-Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] (RABBIT) Antibody - 600-401-I85
Item No.:	600-401-I85
Size:	50 µg
Applications:	ChIP, Dot Blot, IF, Multiplex, WB
Reactivity:	Human, Mouse, C. elegans
Host Species:	Rabbit

Product Details**Background:**

Chromatin is the arrangement of DNA and proteins in which chromosomes are formed. Correspondingly, chromatin is formed from nucleosomes, which are comprised of a set of four histone proteins (H2A, H2B, H3, H4) wrapped with DNA. Chromatin is a very dynamic structure in which numerous post-translational modifications work together to activate or repress the availability of DNA to be copied, transcribed, or repaired. These marks decide which DNA will be open and commonly active (euchromatin) or tightly wound to prevent access and activation (heterochromatin). Common histone modifications include methylation of lysine and arginine, acetylation of lysine, phosphorylation of threonine and serine, and sumoylation, biotinylation, and ubiquitylation of lysine. The dimethylation of both arginine 2 (H3 Arg2Me2) and lysine 4 (H3 K4Me2) of H3 are both known marks to have opposing affects. Arg2Me2 maintains transcriptional silence by silencing Set1 mediated K4 methylation, in which K4 methylation is normally associated with active chromatin. The protein arginine methyltransferase PRMT6 can methylate H3R2 in vivo, and overexpression of this enzyme downregulates Hox and Myc dependent genes, both of which are targets of H3 K4 methylation. Anti-Histone H3 are ideal for researchers interested in Chromatin Modifiers, Chromatin Research, Histones and Modified Histones, and Epigenetics research.

Synonyms:	rabbit anti-Histone H3 Sym-dimethyl Arg2 dimethyl Lys4 antibody, H3.3B, H3 histone, family 3A, H3.3AH3F3H3F3B, histone H3.3, MGC87783, MGC87782, H3 R2me2s/K4me2
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	HIST2H3C
Reactivity:	Human, Mouse, C. elegans
PTM Specificity:	Methylation
Immunogen Type:	Conjugated Peptide
Immunogen:	Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with synthetic dimethylated/dimethylated peptides surrounding Arginine 2 / Lysine 4 of human Histone H3.2.
Purity/Specificity:	Anti-Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] was affinity purified from monospecific antiserum by immunoaffinity chromatography. This antibody reacts with human Histone H3.2. A BLAST analysis was used to suggest cross-reactivity with Human, mouse, and C. elegans. Predicted to react with many species including rat, chicken, Xenopus, Drosophila, and plant based on 100% sequence homology. Cross-reactivity with Histone H3 from other sources has not been determined.
Relevant Links:	• UniProtKB - Q71DI3 • NCBI - NP_001005464 • GeneID - 126961

Application Details

Tested Applications:	ChIP, Dot Blot, IF, Multiplex, WB
Application Note:	Anti-Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] antibody is tested for Western Blot, Chromatin Immunoprecipitation, Dot Blot, and Immunofluorescence. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately ~15.4 kDa corresponding to Histone H3 protein by Western Blotting in HeLa histone prep lysate or the appropriate cell lysate or extract. Epi-Plus™ antibody production in collaboration with Novus Biologicals.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ChIP:	2-5µg/million cells
IF:	1:100
IHC:	1:100
WB:	1:500

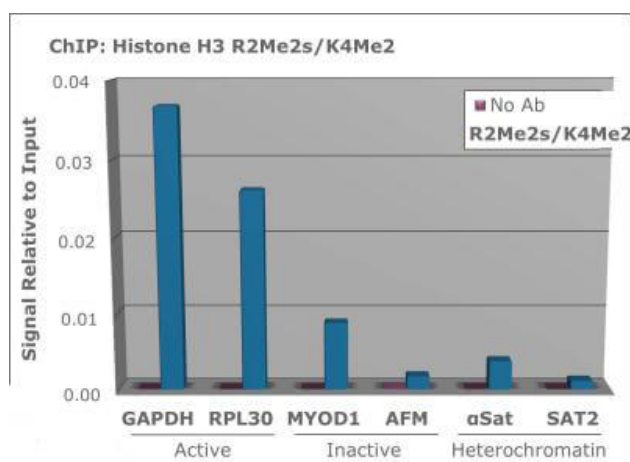
Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	0.91 mg/ml by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	30% Glycerol

Shipping & Handling

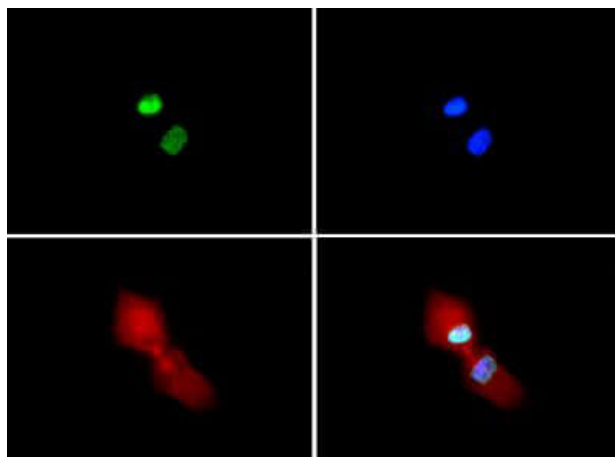
Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

Images



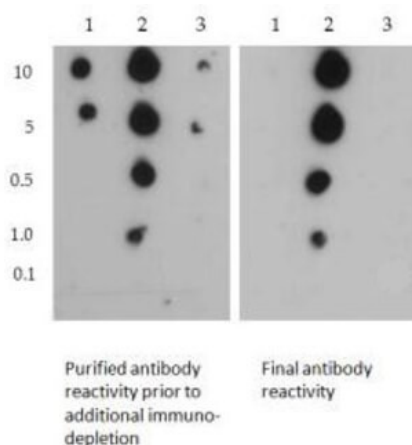
ChIP

Chromatin Immunoprecipitation of Rabbit Anti-Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] Antibody. Chromatin from one million formaldehyde cross-linked Hela cells was used with 2ug of Anti-Histone H3 R2me2s-K4me2 and 20ul of magnetic IgG beads per immunoprecipitation. A no antibody (No Ab) control was also used. Immunoprecipitated DNA was quantified using quantitative real-time PCR and SYBR green dye, then normalized to the non-precipitated input chromatin, which is equal to one.



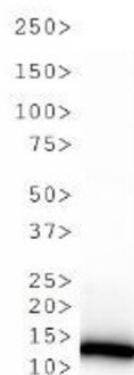
Immunofluorescence Microscopy

Immunofluorescence of Rabbit Anti-Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] Antibody. Tissue: HeLa cells. Fixation: 0.5% PFA. Antigen retrieval: Not required. Primary antibody: Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] antibody at a 1:100 dilution for 1 h at RT. Secondary antibody: Dylight 488 secondary antibody at 1:10,000 for 45 min at RT. Localization: Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] is nuclear and chromosomal. Staining: Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] is expressed in green, nuclei and alpha-tubulin are counterstained with DAPI (blue) and Dylight 594 (red).



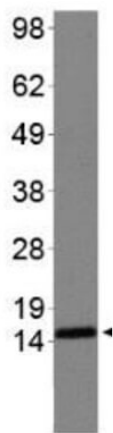
Dot Blot

Dot Blot of Rabbit Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] Antibody. Lane 1: R2Me2. Lane 2: R2Me2/K4Me2. Lane 3: K4Me2. Load: 0.1, 1, 0.5, 5, and 10 picomoles of peptide. Primary antibody: Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] antibody at 1:1000 for 45 min at 4°C. Secondary antibody: Dylight™488 rabbit secondary antibody at 1:10,000 for 45 min at RT. Block: 5% BLOTTO overnight at 4°C. Final Antibody reactivity to R2Me2/K4Me2 seen in the right blot.



Western Blot

Western Blot of Rabbit Anti-Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] Antibody. Lane 1: C. elegans embryo cell lysate. Load: 30 µg per lane. Primary antibody: Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] at 1:500 for overnight at 4°C. Secondary antibody: IRDye800™ rabbit secondary antibody at 1:10,000 for 45 min at RT. Block: 5% BLOTTO overnight at 4°C. Predicted/Observed size: ~15 kDa. Other band(s): None.

**Western Blot**

Western Blot of Rabbit Anti-Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] Antibody. Lane 1: NIH-3T3 histone preps. Load: 30 µg per lane. Primary antibody: Histone H3 [Sym-dimethyl Arg2, Dimethyl Lys4] at 1:500 for overnight at 4°C. Secondary antibody: IRDye800™ rabbit secondary antibody at 1:10,000 for 45 min at RT. Block: 5% BLOTTO overnight at 4°C. Predicted/Observed size: ~15 kDa. Other band(s): None.

Disclaimer

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