

## Datasheet for 600-401-I85

**Histone H3 R2me2s/K4me2 Antibody****Overview**

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

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|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Synonyms:</b>     | 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 |
| <b>Host Species:</b> | Rabbit                                                                                                                                                           |
| <b>Clonality:</b>    | Polyclonal                                                                                                                                                       |
| <b>Format:</b>       | IgG                                                                                                                                                              |

## Target Details

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gene Name:</b>          | HIST2H3C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Reactivity:</b>         | Human, Mouse, C. elegans                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>PTM Specificity:</b>    | Methylation                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Immunogen Type:</b>     | Conjugated Peptide                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Immunogen:</b>          | 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.                                                                                                                                                                                                                             |
| <b>Purity/Specificity:</b> | 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. |
| <b>Relevant Links:</b>     | <ul style="list-style-type: none"> <li>• <a href="#">UniProtKB - Q71DI3</a></li> <li>• <a href="#">NCBI - NP_001005464</a></li> <li>• <a href="#">GeneID - 126961</a></li> </ul>                                                                                                                                                                                                                                                                                                        |

## Application Details

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Tested Applications:</b> | ChIP, Dot Blot, IF, Multiplex, WB                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Application Note:</b>    | 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. |
| <b>Assay Dilutions:</b>     | All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.                                                                                                                                                                                                                                                                                                                                                                              |
| <b>ChIP:</b>                | 2-5µg/million cells                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>IF:</b>                  | 1:100                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>IHC:</b>                 | 1:100                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>WB:</b>                  | 1:500                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

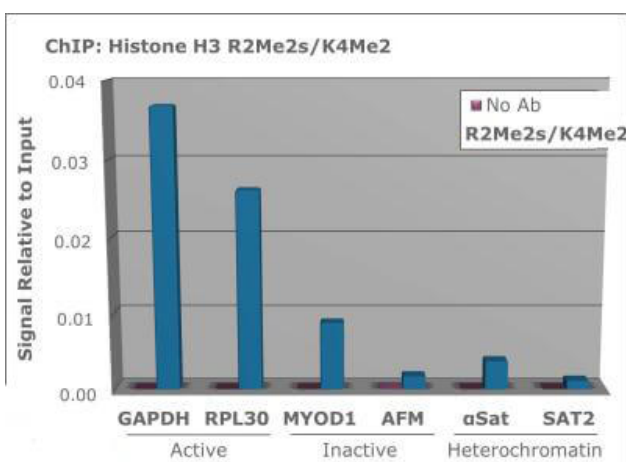
## Formulation

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

## Shipping & Handling

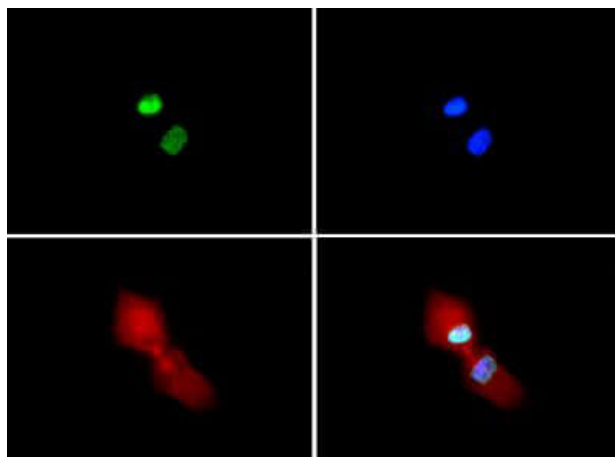
|                            |                                                                                                                                                                                                                                                                                                                                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Shipping Condition:</b> | Dry Ice                                                                                                                                                                                                                                                                                                                                       |
| <b>Storage Condition:</b>  | 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. |
| <b>Expiration:</b>         | Expiration date is one (1) year from date of receipt.                                                                                                                                                                                                                                                                                         |

## Images



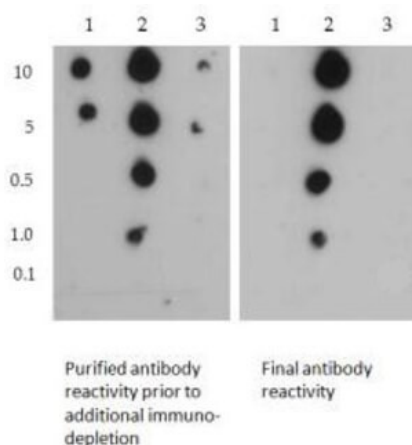
### ChIP

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.



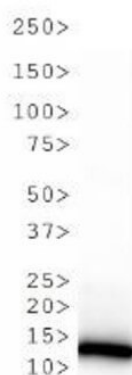
### Immunofluorescence Microscopy

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).



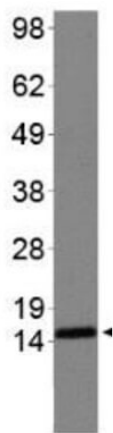
### Dot Blot

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**

This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information. All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation. All properties listed are typical characteristics and are not specifications. All suggestions and data are offered in good faith but without guarantee as conditions and methods of use of our products are beyond our control. All claims must be made within 30 days following the date of delivery. The prospective user must determine the suitability of our materials before adopting them on a commercial scale. Suggested uses of our products are not recommendations to use our products in violation of any patent or as a license under any patent of Rockland Immunochemicals, Inc. If you require a commercial license to use this material and do not have one, then return this material, unopened to: Rockland Inc., P.O. BOX 5199, Limerick, Pennsylvania, USA.