

**Datasheet for 600-401-I61****Histone H3 K4me1/phospho T6 Antibody****Overview**

|                      |                                                                           |
|----------------------|---------------------------------------------------------------------------|
| <b>Description:</b>  | Anti-Histone H3 [Monomethyl Lys4, p Thr6] (RABBIT) Antibody - 600-401-I61 |
| <b>Item No.:</b>     | 600-401-I61                                                               |
| <b>Size:</b>         | 50 µg                                                                     |
| <b>Applications:</b> | Dot Blot, IF, WB, ChIP                                                    |
| <b>Reactivity:</b>   | Human, 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. In particular, trimethylation of lysine 4 on H3 (H3 K4Me3) is a well known mark of gene activation. However, the role of phosphorylation at threonine 6 on H3 (H3 pT6) is more obscure. Yet recently, the two modifications have been shown to interact with each other. When H3 T6 is phosphorylated by protein kinase C beta 1 (PRKCbeta), the histone demethylase LSD1 is prevented from removing methyl groups from H3 K4. This same study also correlated high levels of pT6 and PRKCbeta as a possible marker for prostate cancer, as well as tumor progression in xenografts. Anti-Histone H3 are ideal for researchers interested in Chromatin Modifiers, Chromatin Research, Histones and Modified Histones, and Epigenetics research.

|                      |                                                                                                                                                  |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Synonyms:</b>     | rabbit anti-Histone H3 monomethyl Lys4 pT6 antibody, H3.3AH3F3H3F3B, H3.3B, H3 histone, family 3A, histone H3.3, MGC87783, MGC87782, H3K4me1/pT6 |
| <b>Host Species:</b> | Rabbit                                                                                                                                           |
| <b>Clonality:</b>    | Polyclonal                                                                                                                                       |
| <b>Format:</b>       | IgG                                                                                                                                              |

## Target Details

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gene Name:</b>          | HIST2H3C                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Reactivity:</b>         | Human, C. elegans                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>PTM Specificity:</b>    | Dual Modification                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Immunogen Type:</b>     | Conjugated Peptide                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Immunogen:</b>          | Histone H3 [Monomethyl Lys4, p Thr6] affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with synthetic monomethylated/phosphorylated peptides surrounding Lysine 4 and Threonine 6 of human Histone H3.2.                                                                                                                                                                                                                      |
| <b>Purity/Specificity:</b> | Anti-Histone H3 [Monomethyl Lys4, p Thr6] 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="#">GenelD - 126961</a></li></ul>                                                                                                                                                                                                                                                                                                   |

## Application Details

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tested Applications:</b>    | Dot Blot, IF, WB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Suggested Applications:</b> | ChIP (Based on references)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Application Note:</b>       | Anti-Histone H3 [Monomethyl Lys4, p Thr6] antibody is tested for Western Blot, Immunofluorescence, and Dot Blot. This antibody is useful for Immunocytochemistry and Chromatin Immunoprecipitation. 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>                     | 1:50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>IHC:</b>                    | 1:50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

WB: 1:500

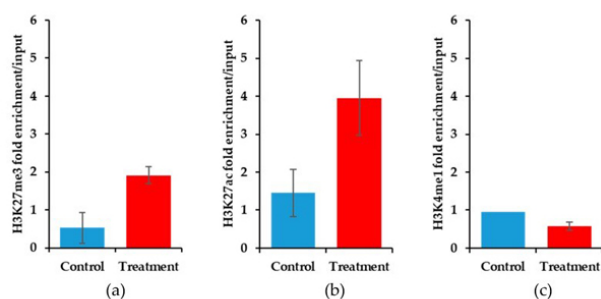
## Formulation

|                 |                                                            |
|-----------------|------------------------------------------------------------|
| Physical State: | Liquid (sterile filtered)                                  |
| Concentration:  | 0.55 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

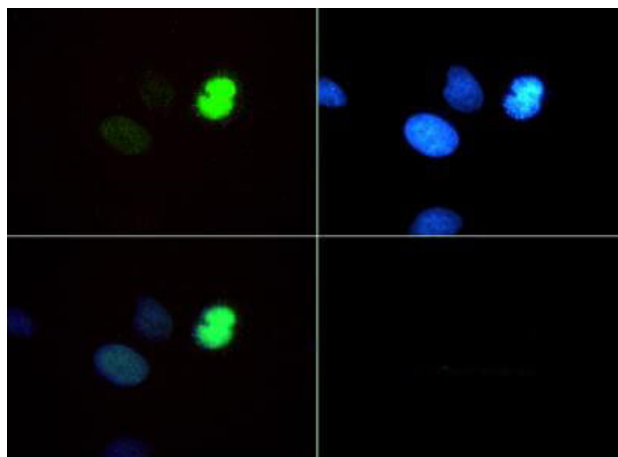
|                     |                                                                                                                                                                                                                                                                                                                                               |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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



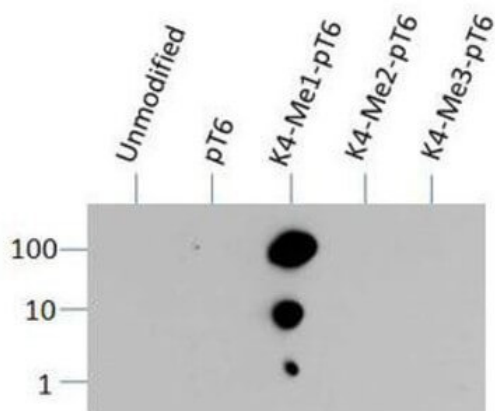
### ChIP

Epigenetic histone marks differ between control and YM155 treated mouse synovial sarcoma at the Birc5 promoter. (a) ChIP-qPCR for H3K27me3 shows elevated levels at the Birc5 promoter in the YM155 treated samples (n = 5) compared to controls (n = 3), error bars are SEM (p = 0.045). (b) ChIP-qPCR for H3K27ac shows elevated levels at the Birc5 promoter in the YM155 treated samples (n = 5) compared to controls (n = 3), error bars are SEM (p = 0.14). (c) ChIP-qPCR for H3K4me1 shows equally low levels at the Birc5 promoter between the YM155 treated samples (n = 5) compared to controls (n = 2), error bars for treated samples are SEM (p = 0.13). The following antibodies were used for immunoprecipitation. anti-H3K27me3 (Rockland, 600-401-I84), anti-H3K27ac (Rockland, 600-401-K00), anti-H3K4me1 (Rockland, 600-401-I61). Fig 7. PMID: 30909651



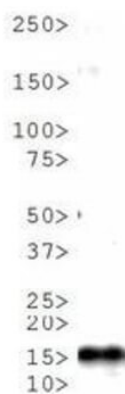
### Immunofluorescence Microscopy

Immunofluorescence of Rabbit Anti-Histone H3 [Monomethyl Lys4, p Thr6] Antibody. Tissue: HeLa cells. Fixation: 0.5% PFA. Antigen retrieval: Not required. Primary antibody: Histone H3 [Monomethyl Lys4, p Thr6] antibody at a 1:50 dilution for 1 h at RT. Secondary antibody: FITC secondary antibody at 1:10,000 for 45 min at RT. Localization: Histone H3 [Monomethyl Lys4, p Thr6] is nuclear and chromosomal. Staining: Histone H3 [Monomethyl Lys4, p Thr6] is expressed in green and the nuclei are counterstained with DAPI (blue).



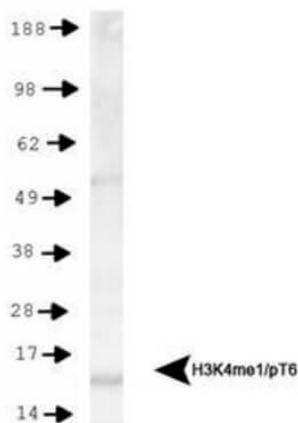
### Dot Blot

Dot Blot of Rabbit Histone H3 [Monomethyl Lys4, p Thr6] Antibody. Lane 1: unmodified. Lane 2: pT6. Lane 3: K4Me1 pT6. Lane 4: K4Me2 pT6. Lane 5: K4Me3 pT6. Load: 1, 10, and 100 picomoles of peptide. Primary antibody: Histone H3 [Monomethyl Lys4, p Thr6] 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.



### Western Blot

Western Blot of Rabbit Anti-Histone H3 [Monomethyl Lys4, p Thr6] Antibody. Lane 1: C. elegans embryonic lysate. Load: 30 µg per lane. Primary antibody: Histone H3 [Monomethyl Lys4, p Thr6] 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 [Monomethyl Lys4, p Thr6] Antibody. Lane 1: HeLa histone preps. Load: 30 µg per lane. Primary antibody: Histone H3 [Monomethyl Lys4, p Thr6] 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.

## References

- Mika A et al. Epigenetic changes at the Birc5 promoter induced by YM155 in synovial sarcoma. *J Clin Med.* (2019)

## 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.