

## Datasheet for 600-401-I56

## Histone H3 phospho T3/K4ac Antibody

### Overview

<b>Description:</b>	Anti-Histone H3 [ac Lys4, p Thr3] (RABBIT) Antibody - 600-401-I56
<b>Item No.:</b>	600-401-I56
<b>Size:</b>	50 µg
<b>Applications:</b>	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. Phosphorylation of threonine 3 (H3 pT3) is a known mitotic marker and modified by the Haspin/Thr3 enzyme, while acetylation of lysine 4 (H3K4ac) on histone 3 is associated with transcriptional activation by Esa1. Methylation that occurs on H3K4 concurrently with acetylation seems to act as an adjuster to the activation effects of acetylation. Shugoshin protein cannot bind to the centromere of active cells when H3K4 is acetylated, which reduces dimethylation, and thus slows meiosis and mitosis. Usually, H3K4Ac is a transitional modification, and will become further modified with methylation as transcription progresses, indicating complex transcriptional regulation. 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 Ac Lys4 pT3 antibody, H3.3B, H3 histone, family 3A, H3.3AH3F3H3F3B, histone H3.3, MGC87782, MGC87783, H3pT3/K4ac
<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>	Dual Modification
<b>Immunogen Type:</b>	Conjugated Peptide
<b>Immunogen:</b>	Histone H3 [ac Lys4, p Thr3] affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with synthetic acetylated/phosphorylated peptide surrounding Lysine 4 and Threonine 3 of human Histone H3.
<b>Purity/Specificity:</b>	Anti-Histone H3 [ac Lys4, p Thr3] was affinity purified from monospecific antiserum by immunoaffinity chromatography. This antibody reacts with human Histone H3. 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

<b>Tested Applications:</b>	Dot Blot, IF, Multiplex, WB
<b>Application Note:</b>	Anti-Histone H3 [ac Lys4, p Thr3] antibody is tested for Western Blot, Immunocytochemistry/Immunofluorescence, and Dot Blot. This antibody is useful in 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
<b>WB:</b>	1:500

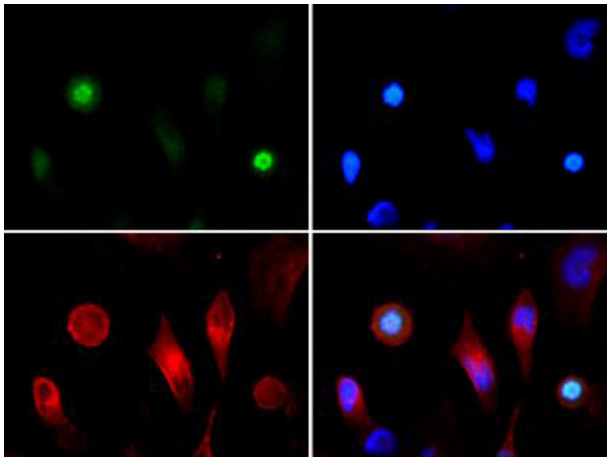
## Formulation

<b>Physical State:</b>	Liquid (sterile filtered)
<b>Concentration:</b>	0.57 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

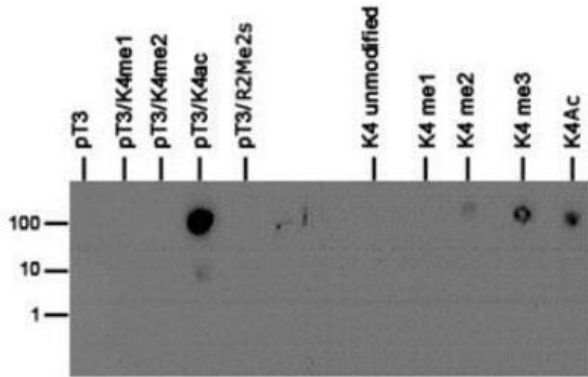
<b>Shipping Condition:</b>	Dry Ice
<b>Storage Condition:</b>	Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is 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

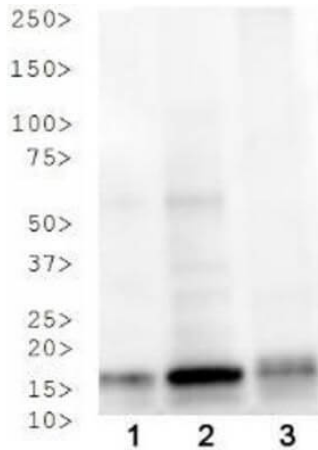


### Immunofluorescence Microscopy

Immunofluorescence Microscopy of Rabbit Anti-Histone H3 [ac Lys4, p Thr3] Antibody. Tissue: HeLa cells. Fixation: 0.5% PFA. Antigen retrieval: Not required. Primary antibody: Histone H3 [ac Lys4, p Thr3] 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 [ac Lys4, p Thr3] is nuclear and chromosomal. Staining: Histone H3 [ac Lys4, p Thr3] is expressed in green while the nuclei and alpha-tubulin were coexpressed with DAPI (blue) and Dylight 550 (red).


**Dot Blot**

Dot Blot of Rabbit Histone H3 [p Thr3, ac Lys4] Antibody. Lane 1: pT3. Lane 2: pT3/K4me1. Lane 3: pT3/K4me2. Lane 4: pT3/K4ac. Lane 5: pT3/RZm2s. Lane 6: K4 unmodified. Lane 7: K4me1. Lane 8: K4me2. Lane 9: K4me3. Lane 10: K4me ac. Load: 1, 10, and 100 picomoles of peptide. Primary antibody: Histone H3 [p Thr3, ac 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.


**Western Blot**

Western Blot of Rabbit Anti-Histone H3 [p Thr3, ac Lys4] Antibody. Lane 1: HeLa histone prep. 2. NIH-3T3 histone prep. Lane 3: C. elegans embryo lysate. Load: 30 µg per lane. Primary antibody: Histone H3 [p Thr3, ac 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.