

Datasheet for 600-401-K00**Histone H3 K27ac Antibody****Overview**

Description:	Anti-Histone H3 [ac Lys27] (RABBIT) Antibody - 600-401-K00
Item No.:	600-401-K00
Size:	50 µg
Applications:	Dot Blot, WB, ChIP
Reactivity:	Human, Mouse, C. elegans, Monkey
Host Species:	Rabbit

Product Details**Background:**

The nucleosome is comprised of 146 bp of DNA wrapped around a series of histone proteins arranged as an octamer consisting of 2 copies of histone H2A, H2B, H3 and H4. Within the nucleosome core the histone proteins are covalent modified at specific residues predominantly within the N-terminal tail including lysine (acetylation, methylation, SUMOylation, and ubiquitinylation), arginine methylation and citrullination, serine and threonine phosphorylation, as well as proline isomerization. The lysine side chains can carry up to three methyl groups (mono-, di- and tri- methylated forms) and the arginine side chain can be monomethylated or can be dimethylated as the symmetric or asymmetric forms. The modifications show temporal, disease-specific, and other types of cell-specific regulation and there are specific families of enzymes that regulate the methylation, demethylation, acetylation, deacetylation and other modifications. Research has indicated that whereas the histone mark H3K4Me3 (tri-methyl lysine 4 of histone H3) localizes to gene promoter regions (it is associated with transcriptional activation) other modifications at H3K4 such as monomethyl is present predominantly at enhancer sequences. Specific marks have been shown to be associated with the activation (H3K9Me1, H3K27Me1, and H4K20Me1) or repression (H3K9Me2 and Me3, H3K27Me2 and Me3, and H4K20Me2 and Me3) of genes. Monomethylation of H4 at K20, catalyzed by SET8, is essential to genome replication and stability. Multiple DNA breaks are associated with demethylation at this site, resulting in activation of p53 to avoid mitosis and aberrant chromosomal activity. In mammalian stem cells, Xist expression blocks the formation of H4K20me1, which is one of the first examples of a direct connection between chromatin and stem cell differentiation. Anti-Histone H3 are ideal for researchers interested in Chromatin Research, Epigenetics, Chromatin Modifiers, Histones and Modified Histones, and Phospho Specific research.

Synonyms:	rabbit anti-Histone H3 Ac Lys27 antibody, Histone H3 (K27 modification), H3 K27-Ac, H3.3B, H3 histone, family 3A, H3.3AH3F3H3F3B, histone H3.3, MGC87783, MGC87782, H3K27ac
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Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	HIST2H3C
Reactivity:	Human, Mouse, C. elegans, Monkey
PTM Specificity:	Acetylation
Immunogen Type:	Conjugated Peptide
Immunogen:	Histone H3 [ac Lys27] affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide surrounding the K27ac site of human Histone H3.
Purity/Specificity:	Anti-Histone H3 [ac Lys27] was affinity purified from monospecific antiserum by immunoaffinity chromatography. A BLAST analysis was used to suggest cross-reactivity with Human, mouse, rat, and C. elegans based on 100% sequence homology. Cross-reactivity with Histone H3 [ac Lys27] from other sources has not been determined.
Relevant Links:	• GeneID - 126961 • NCBI - NP_001005464.1 • UniProtKB - Q71DI3

Application Details

Tested Applications:	Dot Blot, WB
Suggested Applications:	ChIP (Based on references)
Application Note:	Anti-Histone H3 [ac Lys27] antibody is tested for Dot Blot and Western Blot. This antibody is suitable in ELISA. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately ~15.4kDa corresponding to 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.
ELISA:	1: 10,000
IP:	1:100
WB:	1:500-1:1000

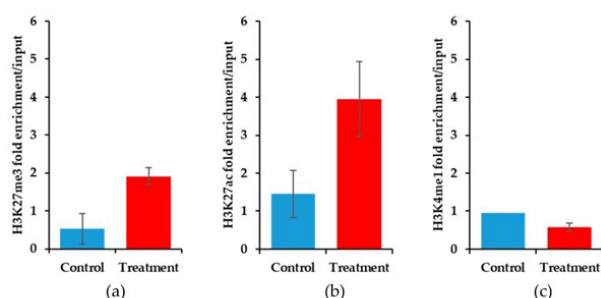
Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	0.37 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

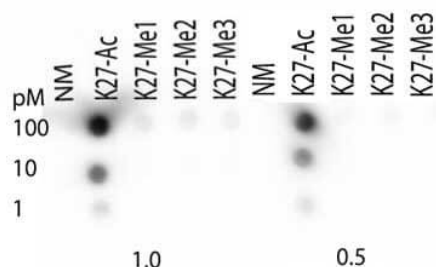
Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several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



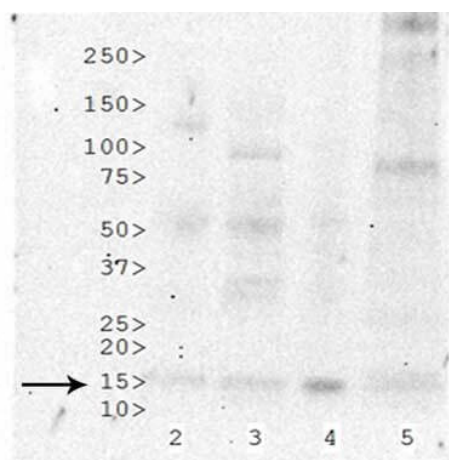
ChIP

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



Dot Blot

Dot Blot of Rabbit Histone H3 [ac Lys27] Antibody. Lane 1: K27 unmodified. Lane 2: K27-Ac. Lane 3: K27-Me1. Lane 4: K27-Me2. Lane 5: K27-Me3. Load: 1, 10, and 100 picomoles of peptide. Primary antibody: Histone H3 [ac Lys27] antibody at 1:1000 for 45 min at 4°C. Secondary antibody: RABBIT IgG (H&L) Secondary Antibody Peroxidase Conjugated Pre-adsorbed at 1:40,000 for 30 min at RT. Block: 5% BLOTTO 30 minutes at RT.



Western Blot

Western Blot of Histone H3 [ac Lys27] (RABBIT) Antibody. Western Blot analysis against untreated cell extracts. Lane 2: HeLa cell lysates. Lane 3: NIH/3T3 cell lysates. Lane 4: Cos 7 cell lysates. Lane 5: C. Elegans lysates. Load: 35 µg per lane. Primary antibody: Histone H3 [ac Lys27] antibody at 1:400 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 for Histone H3 [ac Lys27]. Other band(s): non-specific.

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.