10320 Camino Santa Fe, Suite G
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KD-Validated Anti-Lysine acetyltransferase 7 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1293

Specification

KD-Validated Anti-Lysine acetyltransferase 7 Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	O95251
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 71 kDa , observed, 75 kDa KDa**
Gene Name	**KAT7**
Aliases	**KAT7; Lysine Acetyltransferase 7; HBO1; Histone Acetyltransferase Binding To ORC1; ZC2HC7; MYST2; HBOA; MOZ, YBF2/SAS3, SAS2 And TIP60 Protein; MYST Histone Acetyltransferase 2; Histone Acetyltransferase KAT7; K(Lysine) Acetyltransferase 7; Histone Acetyltransferase MYST2; EC 2.3.1.48; MYST-2; HBOa**
Immunogen	**A synthesized peptide derived from human KAT7 / HBO1 / MYST2**

KD-Validated Anti-Lysine acetyltransferase 7 Rabbit Monoclonal Antibody - Additional Information

Gene ID	**11143**

Other Names
Histone acetyltransferase KAT7, 2.3.1.48, Histone acetyltransferase binding to ORC1, Lysine acetyltransferase 7, MOZ, YBF2/SAS3, SAS2 and TIP60 protein 2 {ECO:0000303|Ref.4}, MYST-2 {ECO:0000303|Ref.4}, KAT7 {ECO:0000303|PubMed:31767635, ECO:0000312|HGNC:HGNC:17016}

KD-Validated Anti-Lysine acetyltransferase 7 Rabbit Monoclonal Antibody - Protein Information

Name KAT7 {ECO:0000303|PubMed:31767635, ECO:0000312|HGNC:HGNC:17016}

Function
Catalytic subunit of histone acetyltransferase HBO1 complexes, which specifically mediate acetylation of histone H3 at 'Lys-14' (H3K14ac), thereby regulating various processes, such as gene transcription, protein ubiquitination, immune regulation, stem cell pluripotent and self-renewal maintenance and embryonic development (PubMed:16387653, PubMed:21753189, PubMed:<a

href="http://www.uniprot.org/citations/24065767" target="_blank">24065767, PubMed:26620551, PubMed:31767635, PubMed:31827282). Some complexes also catalyze acetylation of histone H4 at 'Lys-5', 'Lys-8' and 'Lys-12' (H4K5ac, H4K8ac and H4K12ac, respectively), regulating DNA replication initiation, regulating DNA replication initiation (PubMed:10438470, PubMed:19187766, PubMed:20129055, PubMed:24065767). Specificity of the HBO1 complexes is determined by the scaffold subunit: complexes containing BRPF scaffold (BRPF1, BRD1/BRPF2 or BRPF3) direct KAT7/HBO1 specificity towards H3K14ac, while complexes containing JADE (JADE1, JADE2 and JADE3) scaffold direct KAT7/HBO1 specificity towards histone H4 (PubMed:19187766, PubMed:20129055, PubMed:24065767, PubMed:26620551). H3K14ac promotes transcriptional elongation by facilitating the processivity of RNA polymerase II (PubMed:31827282). Acts as a key regulator of hematopoiesis by forming a complex with BRD1/BRPF2, directing KAT7/HBO1 specificity towards H3K14ac and promoting erythroid differentiation (PubMed:21753189). H3K14ac is also required for T-cell development (By similarity). KAT7/HBO1-mediated acetylation facilitates two consecutive steps, licensing and activation, in DNA replication initiation: H3K14ac facilitates the activation of replication origins, and histone H4 acetylation (H4K5ac, H4K8ac and H4K12ac) facilitates chromatin loading of MCM complexes, promoting DNA replication licensing (PubMed:10438470, PubMed:11278932, PubMed:18832067, PubMed:19187766, PubMed:20129055, PubMed:21856198, PubMed:24065767, PubMed:26620551). Acts as a positive regulator of centromeric CENPA assembly: recruited to centromeres and mediates histone acetylation, thereby preventing centromere inactivation mediated by SUV39H1, possibly by increasing histone turnover/exchange (PubMed:27270040). Involved in nucleotide excision repair: phosphorylation by ATR in response to ultraviolet irradiation promotes its localization to DNA damage sites, where it mediates histone acetylation to facilitate recruitment of XPC at the damaged DNA sites (PubMed:28719581). Acts as an inhibitor of NF-kappa-B independently of its histone acetyltransferase activity (PubMed:16997280).

Cellular Location
Nucleus. Chromosome. Chromosome, centromere. Cytoplasm, cytosol {ECO:0000250|UniProtKB:Q5SVQ0}. Note=Associates with replication origins specifically during the G1 phase of the cell cycle (PubMed:18832067, PubMed:20129055). Localizes to transcription start sites (PubMed:21753189, PubMed:24065767). Localizes to ultraviolet- induced DNA damage sites following phosphorylation by ATR (PubMed:28719581). Localizes to centromeres in G1 phase (PubMed:27270040).

Tissue Location
Ubiquitously expressed, with highest levels in testis.

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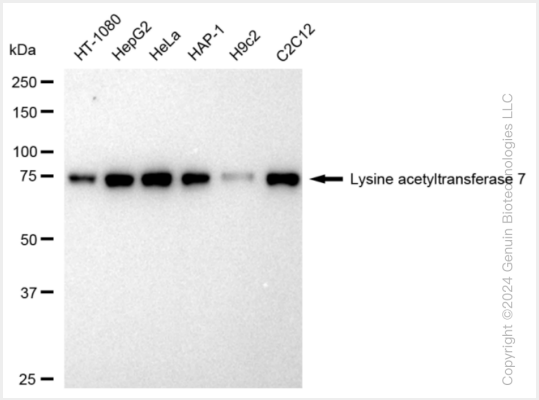
KD-Validated Anti-Lysine acetyltransferase 7 Rabbit Monoclonal Antibody - Protocols

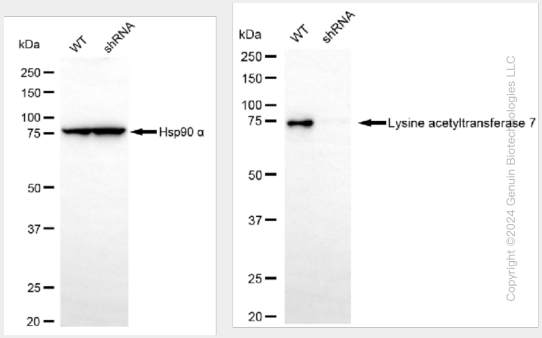
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

KD-Validated Anti-Lysine acetyltransferase 7 Rabbit Monoclonal Antibody - Images



Western blotting analysis using anti-Lysine acetyltransferase 7 antibody (Cat#AGI1293). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-Lysine acetyltransferase 7 antibody (Cat#AGI1293, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-Lysine acetyltransferase 7 antibody (Cat#AGI1293). Lysine acetyltransferase 7 expression in wild type (WT) and lysine acetyltransferase 7 shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. β-Tubulin serves as a loading control. The blot was incubated with anti-Lysine acetyltransferase 7 antibody (Cat#AGI1293, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.

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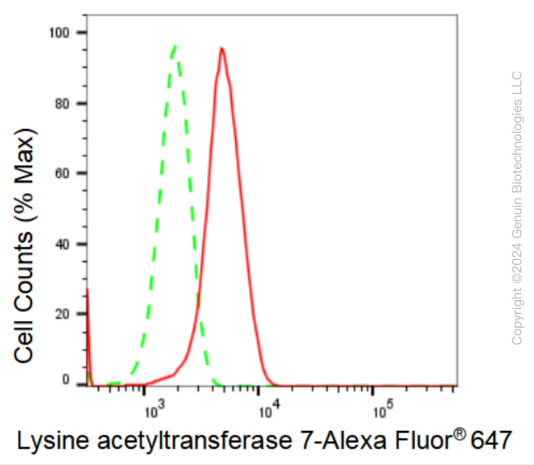
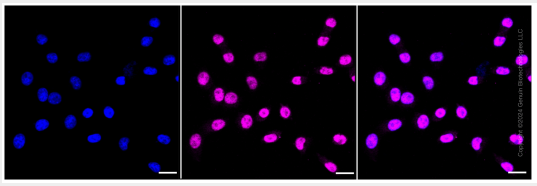


Flow cytometric analysis of Lysine acetyltransferase 7 expression in HepG2 cells using Lysine acetyltransferase 7 antibody (Cat#AGI1293, 1:2,000). Green, isotype control; red, Lysine acetyltransferase 7.



Immunocytochemical staining of HepG2 cells with Lysine acetyltransferase 7 antibody (Cat#AGI1293, 1:1,000). Nuclei were stained blue with DAPI; Lysine acetyltransferase 7 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar: 20 µm.