abcam

ab124993

Anti-KAT7 / Hbo1 / MYST2 antibody [EPR7194(B)]

Recombinant | RabMAb | Advanced Validation

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR7194(B)
Purification technique	Affinity purification Protein A
Dissociation constant	4.7 x 10^{-11} M
Concentration	1.763 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information KAT7

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: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). Plays a central role in the maintenance of leukemia stem cells in acute myeloid leukemia (AML) (PubMed:31827282). Acts by mediating acetylation of histone H3 at 'Lys-14' (H3K14ac), thereby facilitating the processivity of RNA polymerase II to maintain the high expression of key genes, such as HOXA9 and HOXA10 that help to sustain the functional properties of leukemia stem cells (PubMed:31827282).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	KAT7 also known as Hbo1 KAT-7 MYST2 KAT-7 and Katset functions as a histone acetyltransferase specifically modifying histone H4 at lysine 12 5 and 8. With a molecular mass typically around 63 kDa KAT7 is expressed in nucleus and localizes to chromatin. It associates with chromatin during DNA replication and is vital in histone H4 acetylation facilitating chromatin remodeling and gene expression.
Biological function summary	This protein plays a significant role in transcription regulation and DNA replication. KAT7 is a component of the HBO1 complex working together with other proteins like JADE1/2/3 BRPF1/2/3 and ING4/5 making it integral to cell cycle progression and transcriptional activation. This complex is essential for initiating DNA replication as it acetylates histones and regulates chromatin accessibility necessary for DNA synthesis.
Pathways	KAT7/Hbo1/MYST2 is actively engaged in the transcriptional regulatory network and DNA replication pathways. It influences gene expression through its interaction with the transcriptional machinery and by modifying the chromatin structure. Within these pathways it interacts with proteins like BRPF1 and ING5 enhancing transcription and replication. This positions KAT7 as an important component in ensuring cellular growth and division through its histone acetylation activities.
Associated diseases and disorders	Research indicates a link between KAT7 function and cancer. Its dysregulation contributes to tumorigenesis related to its role in cell proliferation and gene expression. KAT7 affects the expression of oncogenes and interacts with proteins like p53. Altered KAT7 activity disrupts normal cellular processes and in cancer results in aberrant cell cycle regulation and uncontrolled cell proliferation highlighting its potential as a therapeutic target in oncology.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

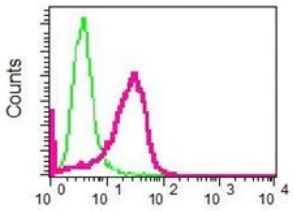
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

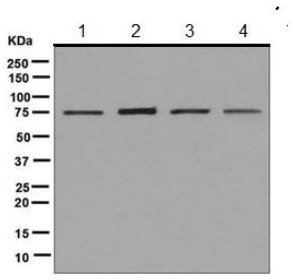
6 product images



Flow Cytometry (Intracellular) - Anti-KAT7 / Hbo1 / MYST2 antibody [EPR7194(B)] (ab124993)

KAT7 / Hbo1 / MYST2 Flow Cytometry (Intracellular) staining using rabbit Anti-KAT7 / Hbo1 / MYST2 antibody

ab124993 at 1/100 dilution staining KAT7 / Hbo1 / MYST2 in permeabilized HeLa cells by intracellular flow cytometry (red) or negative control (green).



Western blot - Anti-KAT7 / Hbo1 / MYST2 antibody [EPR7194(B)] (ab124993)

All lanes:
Western blot - Anti-KAT7 / Hbo1 / MYST2 antibody [EPR7194(B)] (ab124993) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
Jurkat cell lysate at 10 µg

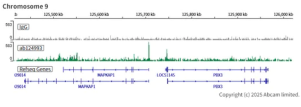
Lane 3:
MCF7 cell lysate at 10 µg

Lane 4:
HepG2 cell lysate at 10 µg

Secondary

All lanes:
Goat anti-Rabbit HRP at 1/2000 dilution

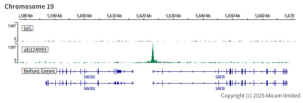
Predicted band size: 71 kDa



ChIC/CUT&RUN sequencing - Anti-KAT7 / Hbo1 / MYST2 antibody [EPR7194(B)] (ab124993)

ChIC/CUT&RUN was performed using a pAG-MNase at a final concentration of 700 ng/mL, 2.5 x 10^5 HeLa (human cervix adenocarcinoma epithelial cell) cells and 5 µg of ab124993 [EPR7194(B)]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown.

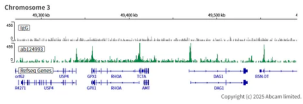
The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.



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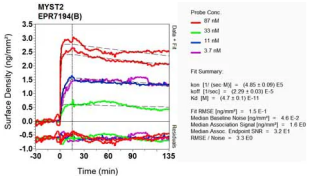
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OI-RD Scanning - Anti-KAT7 / Hbo1 / MYST2 antibody [EPR7194(B)] (ab124993)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.