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HBO1/MYST2 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1113c

Product Information

Application	IHC-P, IF, WB, E
Primary Accession	O95251
Other Accession	Q810T5, Q5SVQ0
Reactivity	Human, Mouse
Predicted	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	70642
Antigen Region	213-246

Additional Information

Gene ID	11143
Other Names	Histone acetyltransferase KAT7, Histone acetyltransferase binding to ORC1, Lysine acetyltransferase 7, MOZ, YBF2/SAS3, SAS2 and TIP60 protein 2, MYST-2, KAT7, HBO1, HBOa, MYST2
Target/Specificity	This HBO1/MYST2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 213-246 amino acids from the Central region of human HBO1/MYST2.
Dilution	IHC-P~~1:100~500 IF~~1:10~50 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	HBO1/MYST2 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

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: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.

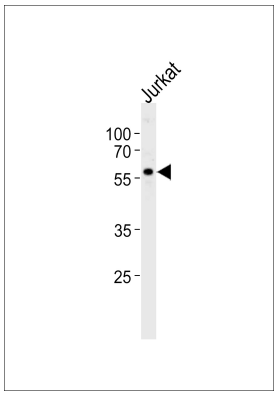
Background

HBO1/MYST2 is a histone acetyltransferase which specifically represses AR-mediated transcription. It may play a role in DNA replication.

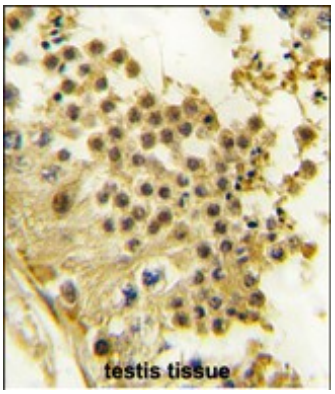
References

Wu,Z.Q., Proc. Natl. Acad. Sci. U.S.A. 105 (6), 1919-1924 (2008)
Iizuka,M., Mol. Cell. Biol. 28 (1), 140-153 (2008)

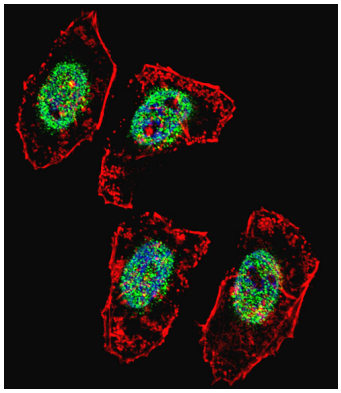
Images



HBO1/MYST2 Antibody (Center) (Cat. #AP1113c) western blot analysis in Jurkat cell line lysates (35ug/lane).This demonstrates the HBO1/MYST2 antibody detected the HBO1/MYST2 protein (arrow).



Formalin-fixed and paraffin-embedded human testis tissue reacted with HBO1/MYST2 antibody (Center) (Cat.#AP1113c), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Fluorescent confocal image of Hela cell stained with HBO1/MYST2 Antibody (Center)(Cat#AP1113c). Hela cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with HBO1/MYST2 primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C). Nuclei were counterstained with DAPI (blue) (10 µg/ml, 10 min). HBO1/MYST2 immunoreactivity is localized to nucleus significantly.